Chapter 2
Sowing the Seeds for Potential Growth

Abstract This chapter explores literature that sheds light on the thinking and action that has traditionally framed approaches to teacher professional development. A review of relevant research highlights the limitations of these practices in terms of producing meaningful teacher learning and sustainable educational change. This carries implications in terms of the effectiveness of such approaches to address the nature of teacher learning – in particular the complex interrelatedness between teaching, thinking, experience, context and action. This chapter then explores an alternative role of the teacher in the learning process by examining three key ideas emerging from literature in the area of professional learning: (1) professional learning must be personal; (2) it must be about noticing; and (3) it inevitably challenges teachers because it involves hard work. This chapter then explores the literature which frames some important considerations around the ownership of expert knowledge, in particular teachers' professional knowledge of practice and the value and place of this expertise in teacher education. The chapter concludes with a call for more research into the operational conditions conducive to meaningful teacher learning.

Introduction

A range of accepted assumptions about the purpose and nature of teacher learning frame programmes designed to attend to in-service teacher education. These assumptions and the power relations that shape such thinking give rise to a range of approaches, which in reality, impede rather than open opportunities for meaningful teacher learning and sustainable educational change. This chapter explores what we know about teacher in-service education in an attempt to better understand more about these power relationships. Three key aspects are explored: the purpose of professional development (PD), the role of the teacher in the learning process and the ownership of expert knowledge in teacher education. To ensure alternative models of practice actually shift the nature of the prevailing interactions and experiences inherent in current in-service practice, three key ideas are examined from the research literature about the role of the teacher in the learning process: (1) professional learning must be personal; (2) it must be about noticing; and (3) it inevitably challenges teachers because it involves hard work. It is also essential to explore some of the work that has been done to date around the ownership of expert

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knowledge, in particular teachers' professional knowledge of practice and the value and place of this expertise in teacher education. As the work in this chapter reveals, such work highlights the need for research which sheds light on operational conditions that effectively address the complex nature of teacher learning – in particular the interrelatedness between teaching, thinking, experience, context and action.

In Pursuit of Effective Teacher Professional Development

The classroom teacher has been identified as the point at which all layers of teaching, assessment and curriculum innovation come into contact, and a range of research suggests that the quality of what teachers know and can do has the greatest impact on student learning (Darling-Hammond 2000; Ferguson 1991; Ferguson and Ladd 1996; Muijs and Reynolds 2000; Wenglinsky 2000), particularly in terms of developing meaningful classroom practice designed to meet student learning needs (Anders and Richardson 1992; Hiebert and Calfee 1992; Johnston 1992b; Stiggins 1985). Recognition of the teacher's influential role has highlighted the importance of providing teachers with educational opportunities that ultimately aim to continuously develop their professional competencies. This process is often referred to as in-service teacher education or PD and has been widely linked to improving schools and increasing teacher quality.

The pursuit of 'effective' teacher PD has become an increasingly important part of educational change (Ashdown 2002; Elmore and Burney 1997; Thompson and Zeuli 1999). This connection is based on a belief that high-quality in-service education will produce superior teaching in classrooms, which will, in turn, translate into higher levels of student achievement (Supovitz 2001). In the USA alone, public schools spend 20 billion dollars annually on PD activities (National Center for Educational Statistics (NCES) 2008). This type of large financial investment, together with globally prevailing agendas such as school accountability, curriculum standardisation, assessment, improved student learning, and teacher performance standards, has produced high expectations of return from PD programmes. Governments worldwide look to local education systems for demonstrable evidence that such priorities have been addressed. The most favoured indicator tends to be demonstrable improvements in student learning outcomes. Sectors within such systems, given obligations to government funding and the incentives available for compliant performance (see, e.g. Hargreaves and Shirley 2012), require their investment in PD to produce such observable outcomes.

There is little doubt that such 'leverage' has placed in-service teacher education programmes and practices under greater scrutiny; programmes are assessed on their efficiency to deliver outcomes, and there is a call for more empirical evidence to identify what makes some programmes effective. As a consequence of these agendas, 'professional development' (PD) has become a convenient and manageable channel through which to exert influence over teachers and their teaching. Characterised by approaches that work in particular ways to deliver such outcomes, it has become the embattled domain of educational change.

PD programme content can too easily adopt a narrow focus on the technical aspects of teaching, that is, assisting teachers to develop teaching strategies to improve practical teaching and the teaching of specific curriculum content (Darling-Hammond and Richardson 2009). Arguments in support of such approaches have sometimes suggested that programmes which focus on the very practical aspects of teaching are far more likely to have positive effects on student learning than programmes that focus mainly on teaching behaviours (Boyd et al. 2009; Kennedy 1999). However, such approaches characterise PD as practice that defines and entrenches teaching as a technical activity, implicitly suggesting that teacher learning is understood, and attended to, as linear and task orientated.

These prevailing trends have also had inevitable consequences for research agendas in the area of PD. By concentrating programmes on teaching actions, i.e. what teachers can be seen to do, researchers have been able to frame teacher learning as a process-product model, whereby learning outcomes are exemplified in the 'product' of teaching actions and student learning. In this scenario, teacher learning becomes an observable and measureable entity. This construct creates opportunities to generate data to address the concerns of the prevailing 'bottom line' and accountability mindsets driving current political education agendas.

Limitations of PD: The Tension Between Intent and Outcomes

The ultimate aim of any teacher PD programme appears to be improved student learning; this is the outcome valued by education systems around the world, and yet it appears to be the outcome that continually remains elusive. Making a difference to student learning is of course a logical intention of teacher learning; however, the expectation that teachers will produce such change as an immediate outcome of a programme experience positions teachers as merely a conduit of linear change, with PD input at one end and changed teaching practice at the other. Delivering this prized outcome appears consistently problematic for stakeholders at all levels of PD, and this difficulty suggests that the conduit metaphor is too simplistic. Disappointing results place further pressure on research to find explanations for the low correlation between intentions and outcomes. In response, working within the limitations of accepted improvement frameworks, the concern of research has been to focus on why changed teaching practices have not produced the intended outcome of improved student learning. For some time, such outcomes have been attributed to a number of possibilities: the incompatibilities between standards-based reform practices and the assessment instruments used to measure impact; the relationship between the content taught to that which was tested; unrealistic timelines for change leading to expectations of immediate rather than accumulated effects; models of teaching practice being disconnected to crucial environmental specifications for student achievement; and, the inadequacy of reformers' specifications lacking the precision required to powerfully impact student achievement (Supovitz 2001).

What appears to be neglected in many studies is the search for evidence, or concern for, factors relating to the complex nature of teacher learning and the contextual nature of situations being researched, despite a considerable amount of educational research conducted since the 1980s that has continued to highlight the importance of these considerations when examining teacher learning (Anderson et al. 2000; Ball 1997; Cobb and Bowers 1999; Greeno et al. 1996; Lave and Wenger 1991; Leinhardt 1988; Mockler 2011; Putnam and Borko 1997).

The lack of attention to these factors clearly demonstrates that contemporary research concentrates mainly on what Opfer and Pedder (2011) described as the 'micro context' of PD, i.e. individual teaching action or individual activities or programmes to the exclusion of, and disconnected from, the broader contexts of teaching. This list of explanations, by omission, reveals an approach to PD that somewhat superficially understands and attends to teacher learning. A more comprehensive list would also attend to:

- the assumptions about teacher learning which underlie each of the PD programmes and how these ideas drive facilitator pedagogy in each programme;
- how teacher actions provide evidence of the precise nature of various aspects of teacher thinking;
- the interpretative framework used by researchers and facilitators in responding to this evidence, in particular the approaches used in acting on these interpretations and the consequent rationale driving programme design including choice and presentation of learning experiences;
- the divisions of responsibility between teachers and facilitators in the learning process;
- the perceptions and beliefs held by teachers about themselves as 'learners' and 'learning', together with their individual purpose and motivation, their intention for their own learning work and perceptions about their own 'abilities' and professional expertise;
- the nature of the social setting in the classroom; and,
- how teachers perceive and evaluate the constraints of the wider school system.

The findings of contemporary research would then enable a greater understanding of the actions, processes and conditions that may be useful in supporting effective teacher professional learning. However, it could well be argued that the implications of such neglect produce potentially lethargic and inconsequential findings in relation to teacher learning and thus inherently limit future discourse about and potential growth in PD practice.

Much research, which emerges from such practice and the ensuing literature about PD, continues to commit what Opfer and Pedder (2011) call an 'epistemological fallacy' of taking empirical relationships between the technical aspects of teaching and some measures of teacher change to *be* teacher learning. Overall, measuring programme effectiveness based solely on the impact on student learning prevents attempts to dig deeper and understand more about the required conditions that enhance teacher learning. Only then can we really begin to understand how teachers learn in such programmes and the conditions that are needed to ensure teachers

experience effective and meaningful learning. It could well be argued then that PD practice and research remains constrained by the limited agendas of prevailing educational priorities.

PD has moved from a term that delineates a stage of teacher education to a prevailing practice (PD) that aims to 'improve' teaching rather than nurture meaningful teacher learning about their professional practice. A complex mix of prevailing political and research agendas, together with a desire to satisfy these with products that exemplify success, drives this approach. While many in-service and school-based programmes continue to comply with these expectations and persistently focus on student outcomes as the sole determinant of teacher learning, then attempts to broaden understandings of the conditions that nurture and support effective teacher professional learning remain somewhat opaque.

The disconnection of the action of teaching from the contextual nature of practice continues to frame teacher learning within a cause–effect model. Maintaining a limited and fixed focus on existing variables excludes consideration of a richer and more powerful factors influencing teacher learning and in doing so reduces the professional practice of teachers to a technical rationality model (Schön 1983). In reality, PD programmes become merely a series of events focusing on content delivery and pedagogical strategies. While research simply interrogates existing practice in pursuit of the 'silver bullet' for improved student outcomes, then it can probably do little more than confirm the rather discouraging findings reported in a range of studies.

Hunting the Assumptions Shaping PD

To be informative and productive, we need to assess the success of teacher in-service education programmes in terms of genuine teacher learning and, in so doing, investigate alternative operations. We need to value and explore further questions about teacher learning, including: Why is it that some learning experiences matter in PD programmes for some teachers? How do teachers make decisions about what matters for their practice and their students' learning? How can teacher capacity for effective decision making be enhanced and supported? Such inquiry necessitates the importance of understanding more about why teachers work in the ways they do, in particular how they use new knowledge to inform professional judgements and respond with contextually relevant action.

To effectively address these types of concerns, it becomes important to question the assumptions and practices that, presently, appear to make PD manageable but which in reality work against the long-term best interests of effective and meaningful teacher learning. To this end, the remaining sections of this chapter explore three key areas within PD in an attempt to better understand more about the present assumptions and power relationships which frame inherent processes and interactions. These areas are the purpose of PD, the role of the teacher in the learning process and the ownership of expert knowledge in teacher education.

The theoretical understandings that define each of these areas importantly determine the meaning of PD as a learning experience. Yet the thinking, which underpins and drives present practice, appears somewhat superficial as it tends to be silent on research from the 1980s forward that stress the complex, personal and contextual nature of teacher learning. To explore alternative ways of framing the thinking that guides practice in these areas, the following sections of this chapter draw on the insights of such research and reposition studies and reviews of teacher PD within the context of research on teacher thinking, teacher learning, curriculum and educational change. This information is used to understand how the practice of teacher PD can align operationally with philosophies and perspectives, which recognise the complexity of teacher learning, school-based change and teacher expertise.

In-Service Teacher Education Practice: Purpose and Framing

The accepted intention of teacher PD is to engineer, albeit well-intentioned, improvement initiatives in the area of teacher learning and practice. Programmes have largely been about helping teachers enhance their knowledge and develop new instructional practices. Agencies, outside of teaching itself, have largely driven operational approaches to ensure that practice complies with prevailing political objectives and mandated changes.

While PD remains driven by an assumption that expertise and control reside with those outside schools, i.e. governments, universities and consultants, then curriculum generally remains most often embodied in regulatory outcomes, and teaching and learning is understood within a model of education which best describes schooling as the delivery of or entitlement to information. Curriculum and inevitably teaching therefore are framed as essentially technical, able to be systematically and sequentially developed using a questionably defined 'objective' collection of main ingredients.

Decontextualised perspectives define what is 'valued' and 'effective' in terms of teaching and learning. Teachers' professional knowledge of practice is effectively ignored, and instead teachers are presented with a 'one-size-fits-all' (Hill 2009) approach to PD that provides solutions which fail to make distinctions among different types of school and classroom contexts and between the needs of novice and experienced teachers (Lieberman 2000).

The Limitations of Existing Assumptions

The nature of educational improvement is multifaceted; what works well in one school may not work so well in another; teachers' values and beliefs about what matters in teaching are impacted by their colleagues, the community in which they work and the characteristics of the students with whom they work, and as a

consequence all these influences affect results because they shape learning needs. The process of school-based change is complex because context exerts powerful influence over action. Therefore, teacher learning is situative and interrelated to all these aspects of practice. However, the 'traditional' or more commonly accepted ideology driving PD programmes rarely attends to any of these aspects of educational change, and therefore it appears simplistic and unrealistic, which gives cause to rethink the assumptions which underlie the intentions for much in-service education. Any process which is designed to assist teachers to understand more about teaching and professional practice must also recognise that such 'learning' is of course contingent given the complex, transitory and changeable nature of teacher learning.

The concern for a need to develop 'professional capital' (Hargreaves and Shirley 2012) has entered the discourse of schooling and teacher education. The thinking surrounding this ideal carries with it some interesting possibilities for an alternative purpose for in-service teacher education and associated research. Essentially such thinking espouses that all aspects of education system operations need to intentionally work in ways that actively recognise and develop teacher professional expertise, particularly within their everyday practice, and enhance each teacher's capacity to function as empowered and valued professionals.

Applying the essential elements of this thinking would see inherent structures of teacher education practice working to support teachers to develop their individual knowledge, skills and capabilities in ways that enable them to maximise their own improvement and ensure that teacher learning is personally meaningful and relevant. A guiding principle of this thinking is the importance of enabling teachers to become confident and competent in their work. Therefore, the need to engage teachers in collaborative models of interaction to develop the levels of trust that contribute to mutual learning becomes highly valued. However, the ultimate intention of such learning is to build teacher capacity to use their knowledge, capabilities and experience to make effective judgements about their practice. If these intentions were to inform the design of PD, practice would work to ensure that teacher learning initiatives could more effectively attend to the 'human', 'social' and 'decisional' capital of teachers, building teacher capacity to be self-directed learners who value and use personal expertise and professional knowledge to enhance personal practice.

Valuing and effectively attending to each teacher's own motives and skills to build each teacher's personal expertise and professional status, alters the accepted intent of PD programmes and opens up opportunities to radically change prevailing practice. Such thinking broadens the potential for learning and may provide mutually beneficial outcomes for the teacher, students and ultimately the education system.

Applying these ideals in practice necessitates a rethink of the ways in which teacher learning opportunities are presently operationalised. This becomes a complex task because accepted attitudes and approaches are not only highly political but also deeply embedded and externally controlled.

While applying such an alternative theoretical construct to PD and exploring alternative practice may inevitably be challenging, the continual goal of improving

the quality of teaching and learning is reason enough to pursue this as a serious educational endeavour. At the very least such an alternative perspective provides possibilities to expand research agendas to explore more flexible pedagogies, designs and delivery modes of the professional learning experience.

Exploring the specific conditions that may contribute to enhancing teacher learning within this theoretical framework becomes crucially important. To do so, all aspects of operation must be considered within and must remain connected to the intended overarching philosophy of teachers as professionals, acting as self-directed learners working towards the personal goal of self-improvement. But attention to the importance of personalised teacher learning requires a broader combination of approaches with richer qualitative studies of processes and interactions within the PD experience.

Effective support for meaningful teacher learning is essential to achieving the long-term outcomes of teacher self-development, enhanced student learning and sustainable education reform. Therefore, it becomes important to reconsider the existing role of the teacher in professional learning, particularly in terms of the attention to ownership and self-direction, identity and expertise.

Reconsidering the Accepted Role and Identity of the Teacher in PD

The essential message implied in many traditional PD programmes is that what teachers do is incorrect or needs improvement (Korthagen 2001). In this context, PD becomes a 'dissemination activity' (Wilson and Berne 1999) where experts know what is important for teachers to learn. Teachers have traditionally been 'fed' information and expected to act as passive 'transmitters of knowledge' (Elbaz 1981). This model of teacher learning focuses on the technical aspects of teaching and tends to isolate the actions of teaching from the contextual realities in which teachers work so that imposed educational targets carry less meaning for many teachers. Expressed quite succinctly as the 'conduit' metaphor (Clandinin and Connelly 1992), this model of PD has proved problematic and as previously discussed, simply doesn't appear to be working. Rather than building 'human' and 'decisional' capital, the reverse is inevitable; teachers become disempowered and establish a dependency upon outside expertise for decision making and innovation.

When PD programmes position teachers as something needing to be developed or improved, such approaches fail to recognise the extensive contextual knowledge teachers hold and use every day in their teaching. These approaches are threatening to teachers because they impact on professional status by placing teachers as passive players within their own learning.

While PD may be theoretically designed to develop teacher learning, in the main, PD programmes lack attention to the complexity of teacher thinking and professional practice and as a result tend to tell teachers what to do.

In reality teacher PD is not a mechanical process; teachers develop themselves, and to do this, they must play an active part in the process of learning. As a consequence, the term 'PD' has come under significant scrutiny as an approach that embodies these limited and constraining views of teacher learning. Instead, the idea of referring to in-service teacher education as professional learning needs to be keenly advocated as a way to place an emphasis on the central place of the teacher and their context in planning, learning and action. Professional learning (PL) is about acknowledging and valuing the capacity of teacher participants to actively engage with and professionally determine the type of knowledge they need for their personal and professional growth. PL, in theory, is a more responsive, active process in which teachers engage in collaboration, where they determine what matters and set personal learning goals and socially construct knowledge that is meaningful to their contextual reality. PL is, in essence, about assisting teachers to better meet their students' needs within the overall cultural context of their professional practice and describes a process, which intentionally leads to deep pedagogical shifts. This thinking moves PD from an idea of 'working on' teachers to 'working with' teachers (Ward and Tikinoff 1976).

Such a philosophy cannot be satisfied by merely changing rhetoric; it also involves a shift in behaviours, attitudes and actions. In-service teacher education opportunities need to embed the learning process in the daily work and routines of teachers. Teachers readily recognise the weakness of learning experiences that have been disconnected from their real teaching situation.

Lists of principles for effective PD have appeared in the literature since at least the mid-1980s (Fullan 1982; Guskey 2009; Ingvarson 2002; Little 1993), and from the mid-1990s, researchers and policy makers began to recognise that such a shift in thinking and action was much needed and could present a radical change to accepted modes of providing PD (Borko and Putnam 1995; Cochran-Smith and Lytle 1999; Fullan 1993; Knapp 2003; Lieberman and Miller 2001). Programmes have generally responded by altering design and implementation strategies to include extended timelines as opposed to 'once-off' experiences, school-based rather than course-based sessions, learning which is collaborative or developed as a learning community, learning based on teacher-identified needs, provision for follow-up support, coaching and reflection on practice, etc. However, unless the power to control the key aspects of learning essentially resides with teachers, these changes may be merely cosmetic and ultimately ineffective. PD simply renamed as PL demonstrates little concern for the differences in both meaning and intent for teacher learning.

To ensure that alternative models of practice actually shift the traditional power relations underpinning in-service education, opportunities must be created which allow teachers to become not only active in the process of learning but also empowered to take control of their personal professional learning. To achieve this, three key ideas emerge from the research literature about the role of the teacher in the learning process: professional learning must be personal; it must be about noticing; and it inevitably challenges teachers because it involves hard work. The following sections explore these ideas in relation to research, which has developed these areas of thinking. If these ideas are genuinely embraced in practice, the implications

for programme design and implementation will significantly alter the present role teachers play in PD. While such learning may be purposefully challenging, the endeavour is worth pursuing to ultimately enhance teacher professional knowledge and practice.

Professional Learning Is Personal

Teaching is not merely a technical procedure but a complex set of personal and social processes and practices concerning the whole person. Professional learning which seeks to enable each teacher to develop a depth of understanding about the complexity of teaching must attend to the personal dimension of learning by building each teacher's personal 'identity' particularly as a learner with specific skills and capabilities and also as a professional with the capacity to explore and share knowledge and understandings about teaching and learning.

External perceptions are powerful in terms of shaping the conditions and expectations around learning and ultimately enabling teachers themselves to develop purposeful learning behaviours including critical and reflective thinking. In the main, PD programmes appear to be largely predicated on assumptions of limited teacher identity. This is evident in the narrow focus of programme content and the linear and sequenced ways in which such information is often presented and explored. The control exercised over teacher learning, i.e. in terms of what is to be learnt and how as well as when such learning will occur, nurtures dependent learning behaviours. This limits the capacity of teachers to engage in deeper learning and develop the confidence they need to contribute their personal knowledge to the wider educational discourse.

To better align practice and philosophy of 'professional learning', it could be suggested that programmes could be predicated on broader expectations of facets of teacher identity. Such expectations would acknowledge that teachers have the capacity to think about, identify and focus their learning around what matters to them in their practice. Teachers are more likely to develop useful knowledge, articulate deep understandings and develop new insights into teaching and learning when they are working under conditions which support them to actively participate in decisions concerning the direction and process of their own learning, experiment with new teaching procedures and construct a knowledge base directly related to the context of their own teaching and learning practice.

Positioning teacher learning (in the ways noted above) has the potential to place the agency for self-improvement directly in the hands of teachers themselves and encourages teachers to value and attend to the personal ideas, values and beliefs that drive their teaching. In that context, it seems reasonable to suggest that teachers would be more likely to learn how to help themselves and others to construct positive personal, professional and sociopolitical identities and meanings (Armour and Fernandez-Balboa 2001).

Professional Learning Is About Noticing

Respecting, acknowledging and attending to the values and beliefs teachers hold are fundamental to broadening a teacher's identity as both a learner and a professional. To do that, teachers themselves need to attend to the values and beliefs that are often tacit in respect to their practice. Explicating the tacit involves active learning.

Encouraging teachers to explicitly value and explore their thinking and knowledge of practice is a difficult process given that in-service education has, as previously explained, traditionally positioned teachers as passive learners, and teachers themselves have rarely been required to articulate why they teach in the ways they do (Loughran 2010).

Encouraging teachers to explore such personal professional thinking plays a vital role in assisting teachers to develop new thinking and understandings about teaching while also enhancing their ability to demonstrate new understandings in contextually relevant situations. Such learning involves each teacher thoughtfully attending to the teaching approaches and processes they utilise each day so that they recognise within their own practice opportunities to critically examine a range of significant incidents. Such critical scrutiny requires teachers to develop an increasing sensitivity to notice (Mason 1998) the significant features of teaching itself, not only the subject discipline but also the significant features of learning and the choices made when working with learners.

Reflective practice therefore becomes an essential part of such a mindful approach to teaching and professional learning. Conditions, which encourage teachers to continually evaluate events and use this information to shape future planning, may assist teachers to recognise, value, understand and develop their professional knowledge.

Encouraging teachers to openly face and articulate the challenges or issues that arise every day in their teaching is essential to mindful practice. Such learning enables teachers to see that issues and problems do not reflect inadequacy or lack of success as a teacher but rather, as (Dewey 1933) explained, the act of recognising that teaching is often problematic and is essentially the first step towards developing and enhancing teaching.

Schön (1983, 1987) built upon this notion of reflection by further expanding the idea to include professional knowledge and describing stages of knowing, thinking and reflecting in relation to action in practice. Experienced teachers operate from a complex knowledge base, yet this is often not well articulated or remains tacit; in Schön's terms, this may exemplify *knowing-in-action.* In conditions where teachers begin to notice and question their practice or their teaching, or their thinking about teaching, they may begin to move to a position of *reflecting-on-action* in which they start to look critically at events after they have occurred. This stage involves a metacognitive awareness in which knowledge and action are linked. Developing personal awareness is an all-encompassing part of this learning because it requires an objective yet connected power of observation.

Mason (1990) explored *the discipline of noticing* and developed a model that highlighted the importance of overt 'noticing' of significant acts or issues, leading to their 'marking' in future practice. *Marking* leads to overt recognition of choices in subsequent activity. It is such recognition that enables teachers to actively make informed and deliberate choices as they undertake reflection-in-action.

Brookfield (1995) developed the idea of reflective practice further by examining the idea of critical reflection and argued that not all reflection was critical. Key elements of critical reflection included an intention to understand how considerations of power underpin, shape and often contort educational processes and interactions (Brookfield 1995). Also important in critical reflection is the act of questioning the assumptions and practices that seem to make teaching easier but which actually work against long-term interests. Brookfield's work encourages teachers to probe beyond experience and investigate the 'hidden dimensions' of their practice in an attempt to unearth the taken-for-granted assumptions which often drive teacher thinking and practice.

From the early 1980s, educational research has been exploring ways of enabling teachers to notice and interrogate their practice; this essentially relies on teachers feeling supported to think differently about their teaching and explore it in ways that will be personally meaningful. Such conditions ensure that professional learning is connected and contextually relevant for teachers and involves questioning and a willingness to see teaching as problematic, a very different process of learning to that which is more typically experienced by teachers in traditional PD programmes. It is essential then that to enable teachers to notice their practice and open up alternative ways of operating and understanding practice, professional learning must involve withholding judgement and empowering teachers to make decisions about what matters for their learning.

Professional Learning Is Hard Work

While these conditions are essential and ultimately productive for personal learning, this type of learning is hard and difficult work for teachers as they are not practised at undertaking such an investment in their own personal development. Teachers are not encouraged to actively question their own professional knowledge or to be personally suspect of their professional practice. However, Ball and Cohen (1999) theorised that teacher learning requires some disequilibrium and that important personal learning only emerges from times when teachers' existing assumptions are challenged. Jaworski's research (1994) with mathematics teachers demonstrated that teachers experience professional growth when they utilise and deliberately engage with the challenges of learning to probe their practice. Through the use of difficult or 'hard' questions, teachers undertook what was, at times, a confronting task of drilling down into their own professional thinking.

Professional learning requires teachers to take ownership of their personal expertise, develop their capacity to become self-directed reflective learners and develop

and articulate strong personal purpose in their professional practice. Whether teachers personally value the expertise and professional knowledge they hold is not always clear yet when working under conditions, which clearly aim to assist them to examine their practice in supportive ways, teachers are able to explore and make sense of their own practice and the relationship with student learning. It should be an important intent of in-service teacher education programmes to empower teachers to decide what matters and what carries importance for them in their professional context. However, creating the conditions that support teachers to develop their personal capacity to undertake such change requires facilitators and educators to reconsider their roles and responsibilities so that they effectively value and attend to the specific strengths and needs of the teachers they aim to support.

More information is needed about the capacity of teachers to recognise themselves as educational experts, explore and develop their own professional knowledge and the conditions needed to raise their awareness to the multiple factors which contribute to the construction of their own professional thinking and action. However, providing solutions or exemplifying what teachers 'should do' is not always as helpful as it may initially appear in this endeavour.

Ownership of Expert Knowledge in Teacher Education

While improving student learning may be the justification driving PD practice, support for effective professional learning may easily become, as Hargreaves (1994) stated, another form of bureaucratic control undermining the role of teacher as professional. It could be argued that traditional PD programmes have divided and estranged the role of the teacher as employee and teacher as professional by limiting teacher autonomy and choice and privileging public codified knowledge about teaching over teacher practical knowledge. Decisions about what counts as knowledge about teaching and learning, what that knowledge is and the value placed on different perspectives have defined the role of the teacher in the learning process, limiting their ability to recognise personal professional expertise and also limiting opportunities for teachers themselves to generate and share knowledge that contributes to improving practice.

Since the mid-1970s, research began to recognise that teachers used a particular type of knowledge to inform their teaching, a professional knowledge of practice which is diverse and contextual, derived from each teacher's experiences of classroom teaching and from personal professional experiences. Sometimes described as a form of personal understanding, decisions about teaching, classroom dynamics and student learning appear to be strongly related to how teachers construct an individual perception of the reality of their classroom. Studies emerged in the 1980s which demonstrated that such perceptions evolved from personal experience and consequently often differed from teacher to teacher and each teaching situation (Clandinin 1985; Clandinin and Connelly 1987; Connelly and Clandinin 1986; Elbaz 1983; Johnston 1992a). Referred to initially as teachers' practical knowledge

(Elbaz 1983; Fenstermacher 1994), research indicated that individual perceptions guided teachers through the complex process of planning and implementing curriculum in the classroom and impacted on decisions at all levels. The dilemmas teachers face in relation to teaching and learning are shaped by multiple factors within their teaching context. Teachers' daily experiences within their workplace setting shape their understandings, and their understandings shape their experiences. Teachers continually build professional knowledge through experience and balance this knowledge within system structures and agencies to which they are accountable.

Academic knowledge of teaching or formal (Fenstermacher 1994) or public codified knowledge is different; it is stereotyped as being empirically based, is scientifically conducted and rigorously reviewed (Loughran 2010) and is therefore often regarded as more credible and reliable than teacher practical knowledge. Formal knowledge asks different types of questions; it serves as a form that can be generalised and applied across contexts. According to Loughran (2010), 'traditionally academic knowledge of teaching has had little impact on practice' (p. 41) as this knowledge provides information that is not always compelling to teachers and the dilemmas they face in the everyday work of their teaching. A number of reasons may account for this including the use of academic jargon and writing styles that are unfamiliar to teachers, lack of classroom activities offered by such work, etc. However, it would be incorrect to assume that teacher work is atheoretical (Loughran 2010). Teachers do use and adapt academic knowledge that they see makes a difference to their practice and which helps them to understand or explain their experiences; they are expert at using and adapting this knowledge in meaningful and practical ways.

Traditionally, both forms of knowledge have not been assigned equal status in teacher learning. In terms of importance and consequently representation, academic knowledge of teaching has been privileged over teacher practical knowledge, and while even teachers themselves may generally accept this preference for public codified knowledge, this stance limits the development of further insights about teaching and learning.

When in-service education delivers only information drawn from research and expertise outside teaching and implicitly ignores the personal and professional knowledge of teachers, the consequences serve to limit rather than enhance teacher learning. Interpretations about teaching and the solutions delivered through PD programmes remain disconnected from teachers' contextual realities. The opportunity for teachers and the wider educational community to understand how teachers themselves socially construct curriculum perspectives and knowledge of teaching for use in schools may be lost.

An alternative approach sees teacher knowledge as an explicitly valued aspect of in-service education, alongside traditional components of public codified knowledge, where both forms of knowledge are used to support teachers in ways that teachers themselves determine as meaningful and productive. It can therefore be argued that both types of knowledge bring a different type of perspective and both are equally important for advancing understanding of teaching and the professional

practice of teachers. In terms of considering how teacher professional learning could be enhanced to be personally meaningful and contextually relevant for teachers, it is worth revisiting the notion raised by Fenstermacher (1994) that perhaps the critical objective of teacher knowledge research is not for researchers to know what teachers know, but for teachers to know what they know. In the context of professional learning, this perspective intentionally positions teacher practical knowledge as a form of knowledge that may equally assist teachers to recognise not only what they *know* but that they *know* what they *know* (Fenstermacher 1994). Such a change in thinking and approach would be dependent upon a genuine commitment and agreement from all agencies involved in the provision of teacher in-service education to acknowledge and attend to teachers' professional knowledge of practice as the most valuable starting point for professional learning.

When teachers' knowledge of practice is valued and attended to in meaningful ways, the agencies involved in professional learning would then need to find ways to support teachers as they work within and respond to 'the unsteady beat' of teaching (Mueller and Skamp 2003). Facilitators would listen carefully to teachers, and teachers themselves would contribute their understandings, beliefs, values, aspirations, practices and concerns and work to make sense of this information in ways which broaden the collective knowledge base about teaching and learning. Facilitators would work to find ways to bring together the different voices that shape teaching. This approach to teacher learning then positions the teacher's voice in the very notion of professionalism, and the relationship between both the knowledge of teaching and the real world of practice becomes one that is dialectic in nature. Such professional learning would work to build the capacity of teachers to value their own learning in ways that might contribute to enhancing their own practice. This learning may also be used to inform the future learning of other teachers.

Summary

Effective in-service teacher education needs to be contextually situated, centred around teachers' learning needs and respectful of teachers' professional knowledge of practice. Yet despite the evidentiary research in support of this thinking, traditional PD programmes tend to be characterised by approaches that remain disconnected from teachers' contextual experience and depersonalised in terms of teachers' professional knowledge. The assumption that teacher learning lies at the heart of any effort to improve education must confront the reality that conventional PD practices are in the main inadequate in producing effective change.

It is important that PL empowers teachers to not only become effective decision makers in terms of their own learning, self-directing the focus and development of their own learning agendas, but to also ultimately generate professional knowledge about teaching and learning. To explore these issues further, the work outlined in this book examines the type of conditions which provide ongoing, challenging, relevant and supported learning experiences for teachers while also exploring the types

of resources, time allocation and expertise that become crucial to creating more effective ways of supporting the improvement of teaching and learning.

There are some essential elements which can be used to inform how PL practice may be operationalised in ways that might better align the philosophy of meaningful teacher learning with action in practice. Efforts to attend effectively to these elements inevitably shift the roles and responsibilities of both teachers and facilitators of PL in the learning process. This shift became an incredibly important consideration in the implementation of the *LSiS* programme, the key PL experience in this study.

It therefore is important to develop a conceptual framework to define the position that underpinned this study in terms of both a theoretical and practical understanding of the nature of teacher learning with particular regard for the role of the teacher in both accepted approaches to PD and that of PL.