

# InSights

## **Professional Learning: An introduction to the research literature**

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Note: This review was commissioned by AITSL in September 2010 to inform the ongoing development of a national professional development framework for Australian teachers and school leaders.

The views, findings, conclusions and recommendations herein are those of the authors and do not necessarily represent the official positions or policies of AITSL or the educational institutions of the authors

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# Contents

<b>Introduction</b> .....	<b>2</b>
<b>Background</b> .....	<b>3</b>
Professional learning – an introduction to the research literature.....	4
Professional development and professional learning: What works?.....	6
Moving professional learning online.....	12
Evaluation of professional development and learning.....	13
Constructive alignment.....	14
<b>References</b> .....	<b>15</b>

## Introduction

In September 2010, Dr Margaret Lloyd and Professor Diane Mayer were commissioned by the Australian Institute for Teaching and School Leadership (AITSL) to, inter alia, review the literature and evidence-based research on the features of high-quality, effective professional learning and development for teachers and school leaders.

The review was intended to inform the development of possible standards for professional learning, a project that has since been recast as guidelines for professional learning programs within the development of a national vision and approach to teachers' and school leaders' professional learning, articulated through the Australian Charter for the Professional Learning for Teachers and School Leaders currently in draft form. Any references to professional learning standards in the paper are to be considered in this context.

This paper is an extract from Dr Lloyd's and Professor Mayer's November 2010 report to AITSL. AITSL considers that through its publication and circulation to stakeholders, the paper will assist in fostering a common understanding of high-quality professional learning and development and support further discussion with the teaching and school leadership profession to enhance the quality and effectiveness of all teachers' and school leaders' professional learning.

## Background

AITSL was established on 1 January 2010 to provide national leadership for the Commonwealth and

state and territory governments in promoting excellence in the profession of teaching and school leadership, with funding provided by the Australian Government.

Three of AITSL's objectives are to:

- Set standards to promote excellence in teaching and school leadership
- Lead and influence excellence in teaching and school leadership
- Support and recognise excellence in teaching and school leadership

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## Professional learning – an introduction to the research literature

In this review, as much as possible, we draw on well-recognised and rigorous reviews and metasyntheses/analyses of relevant literature, including peer-reviewed publications during the last 10 years, although some seminal and influential works published before that time have been included. In summary, the research literature shows clear convergence on some features of effective professional development linked to improvements in teacher and student learning. However, it is clear from the literature that identifying a direct link between professional development opportunities and student learning is somewhat problematic. Rather, it is useful to think about a series of links leading to improvements in student learning: for example, the provision of teacher professional development, leading to changes in professional learning, leading to changes in professional practice, which ultimately impact student achievement (see Meiers & Ingvarson, 2005; Supovitz, 2001). The problem is that very few longitudinal studies have studied these links over time. Indeed, Garet, Porter, Desimone, Birman and Yoon (2001) suggested that relatively little systematic research had been conducted on the effects of professional development on improvements in teaching or on student outcomes (see also Luke & McArdle, 2009). Even so, we believe there are sufficient reviews to be able to draw some conclusions against which to interrogate the intent and content of the draft standards for professional learning programs.

One issue that needs clarification at the outset is the use of the terms *professional development* and *professional learning*. Even though often used interchangeably within the profession, the literature usually differentiates between what is meant by each of these terms. Various authors have, for some time now, been critical of *professional development* conceived of as something that one 'does', or that is 'provided', or is 'done to' teachers, and that has promoted the notion that it must be closely tied to the context of teaching and the capacities of teachers (e.g., Little, 1993, 1999; McLaughlin, 1994). Indeed, Fullan (2007) argued strongly that 'professional development as a term and as a strategy has run its course' (p. 35). The shift in terminology away from professional development, as noted in jurisdictions across Australia, may well reside in these perceptions and the presumed 'baggage' associated with poorly conceived, fragmented, one-shot and de-contextualised 'in-service workshops'. We argue that clarification of 'professional development' and 'professional learning' is essential and that both have legitimacy in the context of aiming to improve professional practice that positively influences student learning.

The OECD's large-scale Teaching and Learning International Survey (TALIS) of 90,000 teachers and school principals in 23 participating countries defined *professional development* as 'activities that develop an individual's skills, knowledge, expertise and other characteristics as a teacher' (OECD, 2009, p. 49). Similarly, in Knapp's (2003) review, *professional development* includes 'the full range of activities, formal and informal, that engage teachers or administrators in new learning about their professional practice' (p.112), while *professional learning* refers to 'changes in the thinking, knowledge, skills, and approaches to instruction that form practicing teachers' or administrators' repertoire' (pp. 112-113). Thus *professional learning* could involve changes in one's capacity for practice (i.e., changes in professionally relevant thinking, knowledge, skills, and habits of mind) and/or changes in practice itself (enacting the new knowledge and skills in one's daily work). Some authors use the term *professional learning* to encompass learning that is not formally planned or learning that occurs with unexpected outcomes or as part of the work that teachers undertake every day in their classrooms (e.g., Day, 1999; Doেকে, Parr & North, 2008). An expansive definition of professional development by Day and Sachs (2004, p. 34) seems to capture both *development* **and** *learning*:

"... all natural learning experiences and those conscious and planned activities which are intended to be of direct or indirect benefit to the individual, group or school and which contribute"

"... to the quality of education in the classroom. It is the process by which, alone and with others, teachers review, renew and extend their commitment as change agents to the moral purposes of teaching and by which they acquire and develop critically the knowledge, skills and emotional Professional Learning: An introduction to the research literature 4 intelligence essential to good professional thinking, planning and practice with children, young people and colleagues through each phase of their teaching lives."

In this review, we acknowledge the subtle differences between development and learning as noted by Knapp (2003) and Doেকে, Parr, and North (2008), particularly the changes in one's capacity for practice as well as changes in the actual practice associated with professional learning, but in the end work within Day and Sachs' (2004) encompassing definition as the framework for this review.

## Professional development and professional learning: What works?

The convergence in the research literature on effective professional development that results in professional learning supports an emphasis on developing subject matter/content knowledge; active learning sustained over time with opportunities to put the learning into practice and with follow-up and support; a focus on student learning and examination of student work; and, collective participation (e.g., Garet et al., 2001; Ingvarson, Meiers & Beavis, 2005; Kennedy, 1998; Kriewaldt, 2008; Meiers & Ingvarson, 2005; Supovitz, 2001; Thompson, 2003; Timperley, 2008; Timperley, Wilson, Barrar, & Fung, 2007; Wilson & Berne, 1999).

These convergent findings are reflected in one of the most widely cited works in this area, namely Hawley and Valli (1999), who, through a metasynthesis of relevant contemporary research in the USA, proposed a number of design principles for effective professional development:

1. The content of professional development focuses on what students are to learn and how to address the different problems students may have in learning the material.
2. Professional development should be based on analyses of the differences between actual student performance and goals and standards for student learning.
3. Professional development should involve teachers in the identification of what they need to learn and in the development of the learning experiences in which they will be involved.
4. Professional development should be primarily school-based and built into the day-to-day work of teaching.
5. Professional development should be organised around collaborative problem-solving.
6. Professional development should be continuous and ongoing, involving follow-up and support for further learning—including support from sources external to the school that can provide necessary resources and new perspectives.
7. Professional development should incorporate evaluation of multiple sources of information on learning outcomes for students and the instruction and other processes that are involved in implementing the lessons learned through professional development.
8. Professional development should provide opportunities to gain an understanding of the theory underlying the knowledge and skills being learned.
9. Professional development should be connected to a comprehensive change process focused on improving student learning.

**Hawley & Valli, 1999, pp.137-143**

Ingvarson, Meiers and Beavis (2005) examined the effects of features of professional development programs on teachers' knowledge, practice and efficacy by drawing on survey data of 3,250 Australian teachers who had participated in 80 professional development activities as part of the Australian Government Quality Teacher Programme (AGQTP) during 2002-2003. They reported that the most effective programs, as identified by these teachers, reflected Hawley and Valli's (1999) design principles (see summary in Meiers & Ingvarson, 2005, p.16). However, they also noted that 'feedback' and 'collaborative examination of student work' appeared to have the least influence 'despite strong evidence for their importance in other research studies' (Ingvarson, Meiers & Beavis, 2005, p.16).

In their synthesis of a large body of international and New Zealand research, Timperley et al. (2007) identified seven elements in the professional learning context that are important for promoting professional learning in ways that impact positively and substantively on a range of student outcomes:

1. Providing sufficient time for extended opportunities to learn and using the time effectively;
2. Engaging external expertise;
3. Focusing on engaging teachers in the learning process rather than being concerned about whether they volunteered or not;
4. Challenging problematic discourses;
5. Providing opportunities to interact in a community of professionals;
6. Ensuring content was consistent with wider policy trends; and,
7. In school-based initiatives, having leaders actively leading the professional learning opportunities.

In their study, the content of effective professional learning included:

1. Discipline knowledge and the interrelationship between such fundamentals as new curricula, pedagogy, and assessment information. Theory provided the basis for making curricular and pedagogical decisions;
2. Knowledge of students, including their developmental progressions through particular curricula, and their culture;
3. Linguistic and cultural resources; and,
4. Theoretical frameworks and conceptual tools. Skills of teacher inquiry included analysis of the teacher's own practice and new possibilities in relation to a standard of practice; the ways in which practice impacted on diverse student learners, and new possibilities for greater impact; and methods of inquiring into the adequacy and improvement of practice.

***Timperley et al., 2007***

A recent large-scale project in Australia mapped teacher professional learning activities across the country (Doecke et al., 2008). Though the purpose of this project, funded by the then Department of Education, Science and Training (DEST), was not to judge the effectiveness of these activities, the authors did develop some guidelines for quality professional learning based on the survey and interview data collected:

1. Professional learning should involve strategic planning at system-wide, school and individual levels;
2. Professional learning should be explicitly embedded within teachers' work;
3. Professional learning should be diverse, and appropriate to individual and group needs;
4. Teacher registration bodies, systems and schools should work together to share their historical and contemporary knowledge about inducting early-career teachers into the profession;
5. Governments, teacher registration bodies and schools themselves should investigate and value a variety of evidence in accounting for teachers' professional learning;
6. Schools and teachers should be encouraged to form and develop a range of professional learning partnerships;
7. Teachers should be encouraged to develop and/or extend professional learning networks with colleagues;
8. Sectors should be encouraged to work collaboratively in cross-sectoral partnerships; and,
9. Teaching should be recognised as engaging in continuing inquiry into practice, and this inquiry should be recognised as strongly collegial and collaborative in nature.

Moreover, this project reviewed various effective approaches to professional learning and posited six principles of professional learning:

1. The collaborative nature of teachers' knowledge and teacher learning is fundamental;
2. Much professional knowledge is anchored in the specific contexts in which teachers work;
3. Knowledge of teachers and teaching develops from, and usually involves, sustained inquiry into teaching and learning by teachers themselves;
4. The findings of research into the knowledge of teachers and teaching are often not simple or certain;
5. Teachers draw on a range of evidence to evaluate and review their existing practices; and,
6. Teachers engaged in rich professional learning tend to work together with other teachers to build more dynamic and rigorous learning communities in which everyone – teachers, students and parents – can participate.

***Doecke et al., 2008, pp. 26-27***

Professional development programs may take multiple forms, including formal coursework in face-to-face or online mode, workshops organised by professional associations, informal learning opportunities situated in practice, and self-initiated action research. Knapp (2003) suggested that opportunities for professional learning can occur:

1. Within the practice itself (as professionals investigate and draw conclusions about their daily work);
2. In settings outside practice;
3. In formalised structures and activities designed for professional learning (e.g., workshops, courses, PD sessions); and,
4. In informal settings (e.g., reading journals, conversations with colleagues).

Much of the literature focuses on highlighting important aspects of the *curriculum* of professional development, rather than its *pedagogy* – the ‘what’ and not so much the ‘how’. Teacher learning is seen as an additive process based on accumulation of new knowledge to an existing repertoire (Day, 1999). However, this is not a linear, step-by-step process of successive ‘in-service’ opportunities but requires understanding of the complex processes by which professional learning is developed. But much of the literature posits strategies or structural features of effective professional development programs.

For example, Loucks-Horsley et al. (1998) identified a number of strategies for effective professional learning, each based on a range of research studies:

1. Immersion into inquiry and problem-solving
2. Curriculum
  - 2.1. Curriculum implementation
  - 2.2. Curriculum development and adaptation

#### **Examining practice**

- 3.1. Action research
- 3.2. Case discussions
- 3.3. Examining student work and thinking, and scoring assignments

#### **Collaborative work**

- 4.1. Study groups
- 4.2. Coaching and mentoring
- 4.3. Partnerships with mathematicians in business, industry, and universities
- 4.4. Professional networks

#### **Vehicles and mechanisms**

- 5.1. Workshops, institutes, courses, and seminars
- 5.2. Technology for professional development
- 5.3. Developing professional developers

Meiers and Ingvarson (2005) mapped a classification of these strategies according to their core purposes —developing awareness, building knowledge, using new knowledge, practising new approaches and reflection on teaching and learning (see p. 22) — and found that they somewhat paralleled what we know from the literature about stages in the change process.

While these are useful in guiding the ‘delivery’ of professional development and learning opportunities, increasingly we have come to understand that, like all types of learning, teacher learning is not only individual, but ‘social’ as well (Cochran-Smith & Lytle, 2009; Lieberman & Miller, 2008; Lieberman & Pointer-Mace, 2010). Teachers who plan and work together over time build commitment not only to each other but also to further learning (Little, 1992, 1999, 2002a, 2002b, 2003; Little & McLaughlin, 1993;

McLaughlin & Talbert, 2001). Ingvarson, Meiers and Beavis (2005) identified 'professional community' as a mediating variable in the effectiveness of professional development programs and found that 'a substantial level of professional community is vital to significant change' (p. 17). Teachers' involvement in networked learning communities seems to lead to changed practices, philosophies, instructional time and collegial interactions (Borko, 2004). Moreover, there is some evidence that strong professional learning communities within schools contribute to improved student achievement (e.g., Timperley et al., 2007). However, as Little (2002a) reminds us, though 'research spanning more than two decades points to the benefits of vigorous collegial communities ... relatively little research examines specifically how professional communities supply intellectual, social and material resources for teacher learning and innovations in practice' (p. 917).

In addition, the literature is increasingly supporting the notion of teachers making their practice public as a significant professional learning opportunity for both themselves and others (e.g., Hatch et al., 2005; Lieberman & Pointer-Mace, 2010). A powerful outcome of teachers making their work public is new conversations about teaching (Lieberman & Pointer-Mace, 2010). As Lieberman and Pointer-Mace (2010) reminded us, 'when professional development opportunities start with other people's ideas first, they deny what teachers know. Starting with teachers' practice invites teachers into the conversation and opens them up to critique, to learning, and to expanding their repertoire' (p. 86).

Web 2.0 tools can provide a wide range of opportunities for teachers and learning communities to go public with their work (see for example, the Goldman-Carnegie Quest Project – Inside Teaching (<http://gallery.carnegiefoundation.org/insideteaching/>; see also Lieberman & Pointer-Mace, 2010). Further to this, online environments allow the development and sharing of e-portfolios and other resources (Kankaanranta, 2001).

## Moving professional learning online

As noted above, there has been an increasing focus on the 'social' aspect of learning and the acknowledgment of the role of learning communities. Darling-Hammond and Ball (1997) argued that substantial professional discourse and engagement in communities of practice is a necessary element in the 'adequate cultivation' of professional development, while Schlager, Fusco and Schank (2002) suggested that an online community of learners is more than a community of learners but is a community that learns.

These seminal ideas have, in turn, been reflexively linked to emerging forms of online communication, particularly synchronous or 'real time' media (BECTA, 2002; Hord, 1997; Webb, Robertson & Fluck, 2004). In particular, technology has been shown to facilitate collaboration (Hawkes, 1999), group discussion (Merseeth & Lacy, 1993), increased professional dialogue (Watts & Castle, 1992), and peer support and feedback (Merseeth & Lacy, 1993; Watts & Castle, 1992). The most commonly cited rationale for most professional learning online is its accessibility and flexibility (Sorensen & Takle, 2004), with the added bonus that, in teacher professional learning, this allows a 'blending of teachers' workspaces and other communities with their online learning experiences' (Dabner & Davis, 2009, p. 175).

Technology clearly has a key role to play in 'the social construction of knowledge rather than as a hierarchical model of instruction delivery or a simple interactive drill or practice process. Technology ... [can become] the context in which learning occurs' (Lloyd, 2000, p. 23). While a relatively new area, Whitehouse, McCloskey and Keteuhult (2010) have identified three models of online teacher professional development in extant case studies. These are: (i) *neo-traditional*, where the instructor is the primary source of knowledge and learning is focussed on the acquisition of knowledge; (ii) *social constructivist (communities of practice)*, where learners make meaning of the content through co-construction of knowledge; and (iii) *tele-mentoring*, where learners are apprenticed or co-mentored. A persistent problem with the first of these types lies in its basis in instructional design, where there is an implicit assumption that learners will display uniformity in the ways they process and organise information and in their predispositions towards specific learning situations (Sadler-Smith & Smith, 2004). An interesting and unexpected aspect of the latter two types, with implications for ongoing teacher professional development, is that they are frequently informal, self-directed and generative (Duncan-Howell, 2009).

A further model for moving professional development online is blended learning (Arnold & Ryan, 2003; Graham, 2006; Mason & Rennie, 2006; Stacey, Smith & Barty, 2004), which has been defined as 'the thoughtful fusion of face-to-face and online learning experiences' (Garrison & Vaughan, 2008, p. 5). Downes et al. (2002) noted that 'in professional associations, online activities complement the networking begun at meetings, events, conferences and workshops' (p. 52) while Garrison and Vaughan (2008) have argued that the ongoing pedagogical and technical support through membership of a blended community of practice is a proven model that sustains such teacher innovation. In a comprehensive evaluation of a situated professional development practicum, Lloyd and McRobbie (2005) found that the element of greatest impact on teacher professional development was the uninterrupted time for focus and reflection brought by a physical shift from the workplaces. Blended learning, or blended e-learning, allows the initial stimulus and opportunities for group formation which is then sustained by ongoing contact with individuals with similar learning goals and challenges.

## Evaluation of professional development and learning

Even though the desired outcome of effective professional development and its resultant professional learning is change in professional practice that leads to enhanced student learning opportunities and outcomes, it is not always easy to show this outcome in simple causal ways. Though we do know from the literature a good deal about effective professional development, we know very little about what teachers actually learn from professional development (Fishman, Marx, Best, & Tal, 2003; Wilson & Berne, 1999) and even less about what students learn as a result of changed practices (Supovitz, 2001). However, there is some guidance in the literature in relation to how we can go about evaluating professional development opportunities. Guskey (2000; 2002) argued for five levels of evaluation of professional development:

Level 1: Participants' reactions

Level 2: Participants' learning

Level 3: Organization support and change

Level 4: Participants' use of new knowledge and skills

Level 5: Student learning outcomes

In this schema, 'Level 5 addresses 'the bottom line' and asks questions like: How did the professional development activity affect students? Did it benefit participants in any way? Guskey also stressed that, in planning professional development to improve student learning, the order of the levels must be reversed; planning must be 'backward', i.e., starting where you want to end and then working back.

However, a growing body of literature supports the notion of considering a broad range of evidence of teachers' learning when evaluating the outcomes of that learning, cautioning about using a smaller range of evidence like students' test scores (e.g., Doecke et al., 2008; Elmore, 2000). Likewise, the OECD report *Education Policy Analysis 2004* (OECD, 2005) stressed the importance of considering 'a wider range of outcomes in education, not only cognitive abilities' (p. 12). Fishman et al. (2003) argued for evaluating professional development using a combination of teacher reflection, classroom observation and ongoing assessment of student performance.

## Constructive alignment

Constructive alignment (Biggs, 1999, 2003) is an approach to curriculum design initially developed for and widely used in higher education and which has also been successfully applied to workplace learning (Walsh, 2007). Put simply, the approach calls for all components in the teaching system — the curriculum and its intended outcomes, the teaching methods used, the assessment tasks — to be aligned to each other. Biggs (2003) posited that 'when there is alignment between what we want, how we teach and how we assess ... students are entrapped in a web of consistency, optimising the likelihood that they will engage the appropriate learning activities, but paradoxically leaving them free to construct their knowledge their way'(p. 27). More expansively:

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*"... the 'constructive' component [of constructive alignment] suggests that students construct meaning through relevant and authentic learning activities. It implies that it is the responsibility of the teacher to act as the catalyst that facilitates the learning of the student through creating learning activities and assessment that are aligned with the learning outcomes, in such a way that students can construct meaning in a given learning event. That is, it is what the student does that is more important in determining what students learn than what the educator does. ... The 'alignment' component refers to what the educator does. That is, the educator creates a learning environment that includes learning activities and assessment that facilitate the student achieving the desired learning outcomes."*

**Reaburn, Muldoon, & Bookallil, 2009, p. 821**

While not typically associated with professional learning, 'constructive alignment' has particular relevance in the notions of separation between 'educator' and 'student' and its active intention for the student to construct his or her own meaning. It is raised here as a potential organiser for those standards relating to 'delivery' or as the underlying goal for the principles guiding the design of professional learning programs.

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