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### Using Research to Advance Professional Practice

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# Using research to advance professional practice<sup>1</sup>

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*A profession is a disciplined group of individuals who adhere to ethical standards and uphold themselves to, and are accepted by the public as possessing special knowledge and skill in a widely recognised body of learning derived from research, education and training at a high level, and who are prepared to exercise this knowledge and these skills in the interest of others. (Australian Council of Professions 1997)*

Specialised, high-level knowledge and skill are distinguishing characteristics of every profession.

Quality in professional practice – whether as an engineer, accountant or orthopaedic surgeon – depends on expert knowledge of the field, a deep understanding of underlying principles, accumulated experience in the practice of the profession, a familiarity with recent advances in the professional knowledge base, and mastery of the best available techniques and tools.

Teaching qualifies as a ‘profession’ to the extent that it requires the application of specialised knowledge and skill developed through research and high-level education and training. Quality in teaching practice depends on a familiarity with, and an ability to apply, expert knowledge and skill to achieve improved student learning outcomes.

The ultimate goal of teaching is the improvement of learning outcomes for students; in other words, the ‘others’ in whose interests teachers work are learners. Semple (2001) points to the research evidence showing a strong correlation between the quality of teaching and the quality of student learning. In his article ‘The Impact of Teaching on Student Learning’ Cuttance (2001) makes the same point:

*The evidence that a substantial proportion of the variation in student learning outcomes is associated directly with variation in teaching has been well documented for almost two decades.*

If, by definition, improvements in teaching quality are improvements that result in enhanced student learning, then the important question becomes one of what teachers need to know and be able to do to improve learning outcomes. What is the nature of teachers’ expert knowledge?

Borko and Putnam (1995) present a framework for thinking about the professional knowledge base of

teaching and argue that changes in teaching practice (and hence improvements in teaching quality) depend on the expansion, enrichment and elaboration of teachers’ knowledge systems. They identify a number of categories of professional knowledge, based loosely on the earlier work of Shulman (1987).

## General pedagogical knowledge

Quality teaching depends on the ongoing development of teachers’ general knowledge and beliefs about teaching, learning and learners. This includes the development of teachers’ understandings of what it takes to create learning environments and to effectively manage classrooms, as well as their understandings of and beliefs about learners, how they learn, and how learning can be supported by teaching. These professional understandings and beliefs transcend particular subject matter domains and stages of schooling.

## Subject matter knowledge

Quality teaching depends on the ongoing development of a teacher’s conceptual understanding of subject matter. Borko and Putnam (1995) point to research suggesting significant relationships between teachers’ grasp of subject matter and their teaching practices. The development of subject matter knowledge includes the development of teachers’ knowledge of the facts, concepts and procedures within a discipline and the relationships between them, as well as teachers’ understandings of the explanatory frameworks that affect the organisation of content knowledge and the questions that guide further inquiry.

## Pedagogical content knowledge

Quality teaching depends on the ongoing development of a teacher’s:

- (i) conception of what it means to teach a subject matter – a conception compatible with current thinking within the discipline;
- (ii) knowledge of effective ways of organising and presenting subject matter, including the use of models, examples, metaphors, simulations and demonstrations;
- (iii) knowledge of how students learn particular

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- subject matter, including their common preconceptions and misconceptions; and
- (iv) in-depth knowledge of available curriculum materials and about how local curricula are organised and structured.

Beyond this, quality teaching also depends on a knowledge of individual students, their learning histories, backgrounds and interests, and an expert knowledge of the special circumstances and challenges faced by particular groups of students (for example, particular cultural or language groups).

As Kennedy (2001) points out, issues of teaching quality can be addressed both at the level of the profession and at the level of individual practitioners. The professionalism of teachers can be enhanced by securing greater autonomy, authority (for example, self-regulation and self-policing) and control (for example, over training, certification and licensing arrangements) for the profession itself. But attention to these 'structural' elements of the profession needs to be complemented by attention to Kennedy's 'personal' dimension of quality: the development of individual teachers' expert knowledge, skills and beliefs.

Research and recent experience suggest several general strategies for enhancing teaching effectiveness/quality:

1. Place student learning at the heart of professional learning.
2. Make explicit what we know about effective teaching practice.
3. Disseminate and share professional knowledge.
4. Recognise and reward high-level knowledge and skill

### **1. Place student learning at the heart of professional learning**

The central objective of teaching is to facilitate and support student learning (that is, to develop individuals' knowledge, skills, understandings, attitudes and values). Quality teaching depends on expert knowledge about the best ways of doing this.

### **2. Make explicit what we know about effective teaching practice**

What do we know about what teachers need to know and do (including their general pedagogical knowledge, subject matter knowledge, and pedagogical content knowledge) to support student learning? How do we capture, share and communicate this professional knowledge? Standards for the teaching profession must identify the professional values and expert knowledge and skills that underlie quality teaching and provide a framework for describing and monitoring growth

towards outstanding teaching practice (Ingvarson, 1998). Teaching standards should be informed by professional practice and experience, and by the results of research into teaching practices that have a significant impact on student learning. As Cuttance (2001) observes, schools at the leading edge of performance can gain substantial leverage from harvesting and incorporating advances from the research literature into their learning and teaching processes.

Importantly, teaching standards must recognise the importance not only of general pedagogical knowledge, but also of subject matter knowledge and pedagogical content knowledge for expert teaching. Generic standards describing the general pedagogical knowledge required of all teachers are necessary, but not sufficient – any more than a set of generic standards that excluded expert subject knowledge would be sufficient across all medical specialties. This is a point that Boston (1999) also has made:

We should go beyond generic statements of professional teaching standards, and contextualise them within the particular subject or curriculum areas and the specialist requirements of particular schooling contexts.

The work currently being undertaken by the Australian science, mathematics and English teacher associations to develop professional teaching standards that recognise the importance of subject matter knowledge and pedagogical content knowledge is an important step in this direction.

### **3. Disseminate and share professional knowledge**

A third general strategy for enhancing teaching quality is the development of improved methods of disseminating and sharing what we know as a profession. As Semple (2001) notes:

Even with the knowledge we now have available to us through research on teaching and learning, its dispersal or transmission is a problem. There may be consensus among 'experts' but the knowledge is not widely shared throughout the profession. (Semple, 2001)

The sharing of expert knowledge about effective teaching practices will require an approach to teacher professional development rather different from the professional development to which teachers commonly have been exposed. In contrast to many past professional development programs which have not had an explicit focus on teaching practices (Cuttance, 2001), professional development to support quality teaching must be focused on knowledge and skills with the demonstrated potential to improve teaching and student learning.

The sharing of expert knowledge also will be enhanced by the creation of contexts in which teachers are supported and encouraged to develop and share their knowledge. Teacher professional associations having a particularly important role to play as leading-edge knowledge organisations in this exchange (Kennedy, 2001).

And, most importantly, the study and analysis of student work must be at the heart of efforts to improve the quality of teaching. The evaluation and discussion of student work – the analysis of teaching successes and failures, student insights and misunderstandings – are key vehicles through which teachers develop the specialised knowledge and skill that they can apply in their professional work.

#### **4. Recognise and reward high-level knowledge and skill**

Finally, quality in teaching is likely to be enhanced by the introduction of mechanisms for recognising and rewarding expert professional practice. Rigorous procedures for assessing teachers' abilities to apply high-level knowledge, understandings and skills in their day-to-day practice are required if systems of professional certification are to be accepted as credible and fair. The assessment procedures of the US National Board of Professional Teaching Standards, with their use of structured portfolios of classroom evidence and separate assessment centre exercises, provide a valuable model here. Assessments will be most useful when they provide evidence of teachers' mastery of general pedagogical knowledge, subject matter knowledge and pedagogical content knowledge, and of their abilities to apply this expert knowledge in their professional practice.

Greater clarity about the expert knowledge, beliefs and skills underpinning accomplished teaching not only has the potential to raise the status of teaching as a profession in the eyes of the public, but also is a key to raising the quality of teaching practice in the interests of improved student learning.

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