

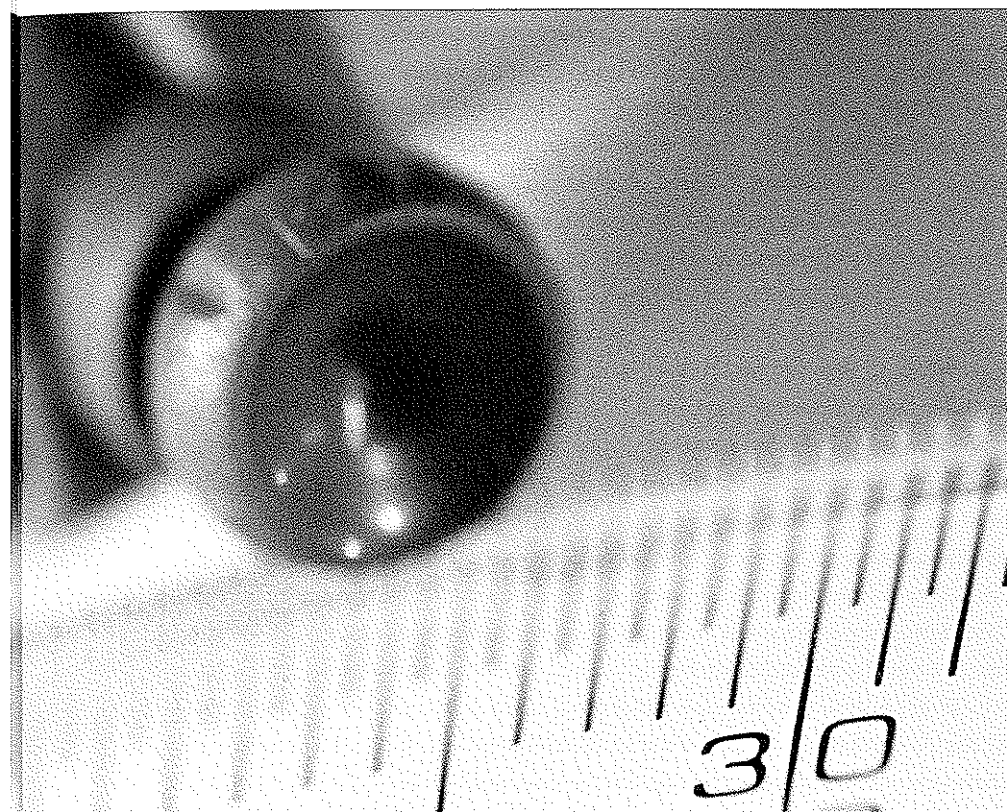
# Measuring teacher quality and student achievement

The quality of teachers and teaching are fundamental to schools and students' learning. While that's generally accepted, new research is investigating the links between teacher professional development, pedagogy and student achievement. **James Ladwig and Jennifer Gore** report.

**MORE** than a few politicians at the state and federal level are picking up on what educational researchers have known for a long time, that the quality of teachers and teaching are fundamental to schools and students' learning. The interest in the quality of teaching has translated into several state-led reform initiatives. First out of the blocks, Queensland's innovative and largely successful New Basics trial was followed by similar initiatives across the eastern states and the ACT to improve the quality of pedagogy. Systems for promoting the professional development (PD) of teachers are also now ubiquitous. Institutes for the development and registration of teachers have been established in states where there were none, or further strengthened in states that already had them. Government money has directly targeted teacher PD in a manner and quantities not seen for a long time. Clearly, the idea that teachers matter has made an impact on the structures of educational systems.

At the same time, there's been a growing recognition of the importance of longitudinal studies among educational researchers. Many social researchers have run with the need for analyses of educational change over time, but more and more researchers have taken up that baton in the past few years. With an increased understanding of the design requirements and analytical methods needed for longitudinal studies in the social sciences, and a growing collaborative will, there are now several cross-institutional longitudinal studies running in Australia, focusing on youth, early-childhood experiences, and on schooling itself.

Bringing these trends together, researchers from the University of Newcastle and colleagues from the New South Wales Department of Education and Training (DET) have recently begun a four-year longitudinal study of the links between teachers' PD, pedagogy and student achievement. Called SIPA – aka the Systemic Implications of Pedagogy and Achievement in NSW Public Schools – its development rests on some currently unresolved issues facing teachers, schools and systems seeking to improve the educational experiences of their students.

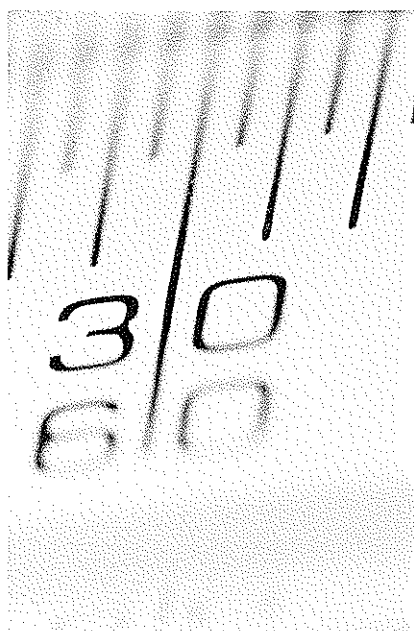


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In 2003, DET initiated a major effort to improve the quality of teaching practices in NSW government schools. To focus this effort, DET developed a model of pedagogy designed to raise the standard of classroom practices associated with in-class learning and assessment tasks. Based on a recent and growing body of unique educational research, this model was developed in consultation with us, and was released to all NSW government schools under the title *Quality Teaching in NSW Public Schools*. The NSW Quality Teaching model is a generic one designed to be applicable across all curriculum areas at all levels of schooling. The intent of the initial *Quality Teaching* discussion paper was to stimulate DET's renewed focus on teaching in a coordinated fashion, and to provide schools with a model for their own self-reflection, analysis and PD purposes.

The SIPA project has been explicitly designed to meet two sets of aims related to research and training. On the one hand, the research was designed to provide vital information for the DET in its endeavours to enhance teaching in NSW government schools and to stand as a significant contribution to the field of educational research itself. On the other, the actual conduct of the research was designed to provide training and development in pedagogy for teachers, school leaders and DET personnel such as district, region and central office support officers.

The research aims of the project centre on an analysis of the efficacy of the Quality Teaching model in the NSW government school context. Central features of this model call for teaching and assessment practices that focus on high standards of 'intellectual quality,' 'quality learning environment' and 'significance.' The centrality of these dimensions in the NSW discussion paper is largely based on international research that has recently demonstrated their importance in producing improved student learning outcomes. (For an annotated bibliography visit [www.curriculumsupport.nsw.edu.au/qualityteaching](http://www.curriculumsupport.nsw.edu.au/qualityteaching))



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There are three central research questions for the project. Does teaching that exhibits the Quality Teaching model lead to improved student learning outcomes in the NSW context? What are the equity implications of the Quality Teaching model? What forms of PD are associated with teachers meeting the standards of the Quality Teaching model? While it's possible to find answers to these questions in international – largely United States – research, it's vital that research interrogates the efficacy of these dimensions of teaching in the NSW and Australian context if Australian educators are to be convinced of the value of such models of pedagogy.

The training and development aims of the project centre on the organisational capacity of schools and the NSW system to focus on improving teaching. As part of the research project, training will be delivered to school and system personnel in the analysis of teaching and assessment practices using the Quality Teaching model. Participant schools will be provided with core data on their own teaching practices and the means by which to analyse that data. The DET will gain valuable data on current pedagogical practices in its government schools and the relative efficacy of the Quality Teaching model. Taken together, the skills and information gained from the project will assist the DET in its ongoing efforts to provide effective PD to its schools and teachers.

To get a sense of where the potential of this study lies in research and policy terms, it's worth foregrounding some fundamental matters. While the importance of teachers is well recognised, thinking on this issue tends to be very blurry and tends not to distinguish between the *teacher* and the *teaching* done by that teacher. That is, many research models of school effects supporting the focus on the quality of teachers actually do not model anything about the teacher, but only include an indication that X teacher belongs in Y school and teaches Z students. In other words, the 'teachers' in these models are literally empty boxes. When specific qualities of those teachers are modelled, it's a relatively rare occasion for that modelling to include measures of the kind of teaching done. More often than not, qualities of teachers that are measured include institutional indicators, such as qualifications, years of experience, and so on.

One effect of this vagueness is that many models of credentialing teacher PD are remarkably unclear about just what counts as quality teaching. In many of the sets of teaching standards around Australia, for example, you'll commonly find the suggestion that teachers need to develop a coherent learning plan based on the conceptual basis of the subject being taught. National, many state and several subject area standards include this. Very few educators would dispute this standard, but such a 'standard' actually says very little about the nature of that coherence. This vagueness in teaching standards is understandable, especially in systems where curriculum development is institutionally separate from teaching. It is highly likely that teachers would rightly develop their plan based on the relevant state curriculum guidelines and justifiably call them coherent – based on that compliance. Notice, further, that such a standard doesn't actually say the coherence should be clear in the classroom, just in plans. The result is that most of today's lessons would deserve the ubiquitous 'professionally competent' label found in the standards for teachers and at the same time be deemed less than enthralling by research into classroom practice, as was found by the Trends in International Mathematics and Science Study (TIMSS), for example. Without more specification about what happens in classrooms – what kind of teaching is expected – most sets of standards won't directly address precisely what needs to be addressed if student outcomes are to improve.

The problem here is a simple one – we need to distinguish between the teacher and the *kind of teaching* that teacher does in order to better understand

just what kind of teaching we want to deem 'high quality.' To this end, the NSW Quality Teaching model, although it is generic in terms of year level and subject area, specifies, for instance, the kind of *intellectual quality* desired in classrooms as being based on deep knowledge and understanding, where students engage in knowledge construction, where knowledge is seen as problematic, and so on. Likewise, the SIPA research, developed in tandem with the NSW Quality Teaching model, will estimate the effects of such a focus on student outcomes, in relation to other dimensions of the model, over time.

Given an ongoing debate about the capacity of high-quality teaching to level out social disadvantage, it's also important that we address the need for large-scale equity analyses of teaching. Toward this end, SIPA is collecting data and will conduct specific analyses in relation to boys and girls from low socio-economic backgrounds, non-English-speaking backgrounds, and Indigenous and other non-dominant cultural backgrounds.

Building our understanding of teaching in this manner makes the very same pedagogical assumption that teachers employ when working with students: that all learners are capable of high-quality performance. This is a crucial step. While much effective-schools research would advocate shifting teachers between schools as a way of improving school performance, it's clear that in nations where the population of teachers is relatively finite, such as Australia, there's a need to develop PD mechanisms that actually deliver high-quality teaching with the current teaching force. Again, while there are many advocates of increased investment in the professional learning of teachers, and much support for developing standards for teachers, there's remarkably little empirical evidence that either will produce improved teaching on their own. Both need the additional step of being more declarative about what counts as quality teaching. It's in this way that the NSW Quality Teaching model and the SIPA research could well advance the teacher standards movement in Australia well beyond most comparable international initiatives.

SIPA has been designed to track the pedagogical experiences of three cohorts of students: an upper primary cohort from Years Three to Six, a transitional cohort from Years Five to Eight, and a lower secondary cohort from Years Seven to Ten. Measures of the quality of the pedagogy these students experience will be drawn from classroom observations and measures of the learning and assessment tasks students complete as part of their regular classroom experiences. Student performance outcome measures will include extant testing data, which will also be used in the first year's estimates as an indicator of prior achievement, plus measures drawn from samples of student work. In all, approximately 3,000 students were part of the initial sample, from whom approximately 36,000 pieces of work will be drawn at six points over the four years.

In addition to tracking the students' pedagogical experience, the professional learning of their teachers will be monitored, through observations and interviews conducted on field visits and through an annual survey of teachers' professional activities. Approximately 1,000 teachers, from forty schools, will take part in this portion of the study. Early findings from the study that are just coming in will serve baseline purposes, mapping out where students, teachers, schools and indeed the NSW system are at as they begin their journey. The first analyses of change won't be available until 2006, at which point schools will have two years of experience and data upon which to direct their future efforts.

**LINKS:** For more on the Quality Teaching Initiative visit [www.curriculumsupport.nsw.edu.au/qualityteaching](http://www.curriculumsupport.nsw.edu.au/qualityteaching)

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