



## Research paper

## Effects of professional development on the quality of teaching: Results from a randomised controlled trial of Quality Teaching Rounds



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## HIGHLIGHTS

- This study tested a pedagogy-based PD approach for impact on quality of teaching.
- The cluster randomised controlled trial involved 192 teachers in 24 schools.
- Significant positive effects ( $d = 0.4$ ) were found for teaching quality.
- Positive impacts on teacher morale and sense of recognition were also observed.
- Effects were sustained 6 months post-intervention.

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## ABSTRACT

Robust evidence of the effectiveness of professional development for teachers is limited. This study tested a pedagogy-based, collaborative PD approach for impact on the quality of teaching. A cluster randomised controlled trial involving eight teachers at each of 24 schools found significant positive effects on teaching quality ( $d = 0.4$ ), independent of school type (primary/secondary), school location (urban/rural), and years of teaching experience. These effects were sustained six months later. Qualitative data are used to illustrate mechanisms underpinning the success of the intervention. This study illuminates how to support teacher learning for measurable positive impacts on teaching quality and teacher morale.

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## 1. Introduction

School systems throughout the world acknowledge that the quality of teaching is the most critical in-school factor impacting on student outcomes (Darling-Hammond, 2000; Hattie, 2008; Organisation for Economic Co-operation and Development [OECD], 2005; Rockoff, 2004; Rowe, 2003; Timperley & Alton-Lee, 2008).

Every year, in the name of improving teaching quality, millions of dollars are invested in teacher professional development (PD) and elaborate regulatory systems have been designed to ensure that teachers engage in ongoing professional learning activities. Yet few studies show rigorous evidence of the impact of such activities (Avalos, 2011; Cordingley, Bell, Evans, & Firth, 2005; Guskey & Yoon, 2009; Vescio, Ross, & Adams, 2008). Moreover, PD programs often lack clear and direct links with classroom practice. The result is what some have referred to as an “evidence void” when it comes to documenting the sustained effects of PD on either teaching practice or student outcomes (Council for the Accreditation of Educator Preparation [CAEP], 2015; Cuban, 2013; Darling-Hammond, 2013; Hill, Beisiegel, & Jacob, 2013; Kennedy, 2016).

In the absence of strong evidence for PD, concerns about the quality of teaching in schools are increasingly being addressed in two alternative ways, each of which has gained significant political

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traction. One approach seeks to improve quality by restricting entry into teaching to only the “best and the brightest” (Teacher Education Ministerial Advisory Group [TEMAG], 2014; Weldon, McKenzie, Kleinhenz, & Reid, 2013; Wilson, Dalton, & Baumann, 2015). The logic here is that the quality of teaching is a function of the quality of the teacher—typically understood as academic credentials, sometimes with dispositions and personality traits also considered (Bowles, Hattie, Dinham, Scull, & Clinton, 2014). As an approach to “fixing” the quality of teaching however, the proposed tightening of selection criteria fails to provide a short-term solution and ignores the impacts of preservice teacher development. It also lacks feasibility if dramatic economic changes are not simultaneously implemented (Goldhaber, 2015; see also Gore, Barron, Holmes, & Smith, 2016). A second approach centres on finding sophisticated ways to evaluate the quality of teaching (Grissom & Youngs, 2015). This line of work seeks to improve teaching by using robust measures of quality to weed out the worst teachers and learn from the best (Hanushek & Rivkin, 2010; Metzler, 2014). However, even leaving aside complex and unresolved measurement issues, *evaluating* teaching quality will have limited impact on *improving* teaching quality unless linked to an effective approach to PD.

Given the limitations of these approaches, the question of how teaching can be improved remains one of fundamental significance internationally. In Australia alone, the teaching workforce amounts to 250,000 teachers (Weldon, 2015) and there are more than 76,000 prospective teachers enrolled in undergraduate teacher education programs.<sup>3</sup> Finding ways to support and develop teachers (i.e., inservice) and student teachers (i.e., preservice) thus remains a strategy worth pursuing with some urgency—both for moral reasons, in support of these teachers and their many students, and for pragmatic reasons, in terms of the exorbitant resources required to re-build a teaching workforce from the point of recruitment. This paper reports on one attempt to impact on the development of practising teachers, based on a particular pedagogical framework, Quality Teaching (QT), and a particular approach to using the framework, Quality Teaching Rounds (QTR).

### 1.1. Background to the study

Despite the substantial corpus of research on PD, few studies directly link specific teacher development activities to changes in teaching practice and/or improved student outcomes (Desimone, 2009; Guskey & Yoon, 2009; Guskey, 2002; Kennedy, 2014, 2016). Where studies have found positive effects, the PD has typically been limited to a small part of teaching practice (Hill et al., 2013), a small group of teachers (Korthagen, 2016), or single subject area (Penuel, Fishman, Cheng, & Sabelli, 2011). The reported effects have been on outcomes such as teachers' satisfaction (Ullah & Jundran, 2014), attitude change and commitment to innovation (Desimone, 2009), and self-efficacy (Tzivilinikou, 2015), or effects on student achievement gains, often in mathematics or science (Blank & de las Alas, 2009). Nonetheless, some scholars speak of an emerging “consensus” that effective approaches to PD involve teachers as both learners and teachers (Darling-Hammond & McLaughlin, 1995), are needs-supportive (Aelterman et al., 2013), take place within the school day (Garet, Porter, Desimone, Birman, & Yoon, 2001), are integrated into practice (Armour & Yelling, 2007), cohere with school and system policies (Desimone, 2009; Ingvarson, Meiers, & Beavis, 2005), and promote transformative practice, rather than accountability (Kennedy, 2005). Most

attempts to implement PD that meets these criteria have been expensive and yielded weak return on investment (Harris & Sass, 2011; Hill et al., 2013). Leading researchers conclude that in order to deliver the highest quality PD, investment needs to be limited to fewer teachers or additional resources must be found (Garet et al., 2001).

The approach reported in this paper not only builds on these so-called “principles of effective PD,” but can be applied across all subject areas and all levels of schooling (K–12) at a relatively low cost. It aims to support teachers in improving their practice while also developing their efficacy, well-being, and professional engagement. This is in contrast to approaches that subject teachers to greater levels of accountability, evaluation, and performance review. Simultaneously, and ambitiously, our approach aims to provide evidence of a kind that is persuasive to governments and education systems that want to be sure their investments have pay-off, especially in terms of student outcomes.

The approach, Quality Teaching Rounds, is designed to bring together the benefits of teachers working in professional learning communities (PLCs) (Lave & Wenger, 1991) and engaging in a form of instructional “rounds” (Elmore, 2007), with the Quality Teaching pedagogical framework (NSW Department of Education and Training [NSW DET], 2003). By adding a pedagogical framework to collaborative PD activities, Quality Teaching Rounds provides teachers with a common language and set of conceptual standards with which to engage in rigorous diagnostic professional conversations with colleagues (Bowe & Gore, 2017; Gore & Bowe, 2015). The framework and the approach to using the framework are grounded in an analysis of prior research (Ladwig & King, 2003; Newmann, 1996) and more than a decade of our own research into how QT functions in supporting teachers and improving teaching practice (Gore, 2014).

Quality Teaching Rounds, the PD approach, involves four (or more) teachers working in a PLC. A “Round” is comprised of three sequential sessions that occur on a single day:

- 1 *Reading discussion*: Designed to support the group in developing a shared theoretical basis for professional conversations and build a sense of professional community (typically 1 h)
- 2 *Observation*: One PLC member teaches a lesson that is observed by all other members of the PLC (a full lesson length, typically 30–80 min); and
- 3 *Coding and discussion*: Individual coding of the observed lesson, including coding by the observed teacher, is followed by discussion whereby all PLC members contribute (typically one to 2 h). Coding and discussion are centred on constructs of the Quality Teaching framework (described below)

In Quality Teaching Rounds, at least one lesson is observed for every member of the PLC, and PLC members stay together for an entire set of Rounds. The intent of Quality Teaching Rounds is to focus on the relationship between classroom practice and student learning and to show respect for the teacher and the teaching-learning process by watching a whole lesson each time (Bowe & Gore, 2017).

Fundamental to Quality Teaching Rounds is the structuring of observations and post-lesson discussions through the research-based constructs of the Quality Teaching framework (NSW DET, 2003). This pedagogical framework has been widely used during the past decade in Australia (particularly in New South Wales and the Australian Capital Territory). Derived from work on Authentic Pedagogy (Newmann, 1991; Newmann, Marks, & Gamoran, 1996) and an extensive synthesis of research on aspects of pedagogical practice that make a difference for student outcomes (Ladwig & King, 2003), the QT framework focuses teachers' attention on three dimensions of pedagogy: (i) Intellectual Quality, (ii) Quality

<sup>3</sup> From data that is publically available via uCube (Australian Government Department of Education and Training, 2016) under the Creative Commons Attribution 3.0 Australia Licence.

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