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Introduction

Preparing pre-service teachers to enact consistently high-quality, effective instruction has been a long-standing challenge for teacher educators. Identifying the most effective pedagogical approaches remains a contentious area (Nye et al., 2004; Buddin & Zamarro, 2009; Hassel & Ascue Hassel, 2010; Cochran-Smith & Villegas, 2015). In recent years, there has been a shift towards implementing and researching practice-based (or clinical practice) teacher education where the focus has been on identifying effective pedagogies. The research presented in this book explores a new practice-based approach intended to develop pre-service teachers through synthesising key facets of mentoring, feedback and technology-enhanced learning.

One of the key challenges facing teacher educators today is how to teach pre-service teachers to become confident, reflective practitioners and to continue to learn through their own teaching practice. While the field of teacher preparation has made modest strides towards developing a professional knowledge base, very little is still known about the pedagogic approaches of teacher educators (Knight et al., 2014). Those who teach and mentor pre-service teachers must negotiate highly political debates concerning teacher ‘quality’ and ‘effectiveness’. Australia has attempted to address issues of teacher quality through establishing the Tertiary Education Quality and Standards Agency (TEQSA), the Australian Institute for Teaching and School Leadership (AITSL), the Australian Curriculum, Assessment and Reporting Authority (ACARA), and Education Services Australia (ESA). Common efforts focus on:

redesigning teacher education programmes around standards (competence goals); strengthening the educational subjects around learning and development theory, assessment and feedback; strengthening subject matter pedagogy (subject didactics); and connecting coursework more directly to practice in more extensive practice settings. (Rasmussen and Rash-Christensen 2015, p. 214)

Despite these investments, preparing and retaining high-quality teachers continues to be of national concern here in Australia. Cochran-Smith et al. (2015, p. 110), in their meta-analysis of research into teacher preparation, argue that knowledge societies demand educators ‘who can think critically, pose and solve

problems, and work collaboratively—abilities not readily developed in classrooms where teaching aims to transmit factual information to learners’. Furthermore, teacher education has occasionally been guilty of promoting an education model centred on knowledge transmission. The teacher education of today questions traditional practices and searches for ‘powerful strategies’ (Cochran-Smith et al., 2015, p. 116) to improve the preparation and retention of teachers, specifically in terms of skill development through their university courses and field experiences.

We are interested in a model of learning which contributes positively to the development of increased pre-service teacher confidence and ownership of their craft. Central to such a model is coaching, so we explore the relationship between coaching and the development of a sense of ownership and how this relates to an emerging teacher identity. Gibbons and Cobb (2017, p. 1) write, ‘The current research base on effective coaching activities is relatively thin’. We investigate a type of coaching, Real-Time Coaching (RTC), or bug-in-ear coaching, a very specific method that involves pre-service teachers being fitted with a wireless inner-ear device, a personal receiver (a Motorola CP476 CB Radio), which allows the teacher educator to communicate with them as they teach. The efficacy of Real-Time Coaching in teacher education has been documented (Scheeler et al., 2004), and studies suggest that coaching is indeed beneficial to pre-service teachers with respect to skill acquisition (Kraus & Wehby, 1998; Barton & Wolery, 2007; Auld et al., 2010). However, it remains an under-researched and under-theorised area. While RTC is a key method, it was enhanced in our design through the use of layered feedback cycles to ensure feedback came from multiple sources. Therefore, the Real-Time Coaching for Pre-service Teachers Model unites varied pedagogic approaches to provide pre-service teachers with multiple opportunities to practice doing things they do not yet know how to do and to reflect upon such actions. Essential to this learning design is a community of learners where there is established trust and where pre-service teachers are supported to experiment with ideas and make mistakes. Our research explored pre-service teachers’ perceptions of our learning model.

This book details the findings of a research project entitled *Real-Time Coaching and Instant Feedback in Pre-service Teacher Education*, funded by the University of South Australia. In the study, by using a practice-based learning design—the Real-Time Coaching for Pre-service Teachers Model—we sought to utilise innovative coaching techniques, grounded in reflective practice, to enhance the development of pre-service teachers. The three interrelated *aims* of this research were: (a) to investigate how to enhance the learning of pre-service teachers, (b) to build an understanding of how pre-service teachers change their practice through being coached (c) and to understand the strengths and weaknesses of the Real-Time Coaching for Pre-service Teachers Model. While the scholarship on coaching models is well developed in areas such as coaching relationships, coaching cycles and modes of feedback, the literature on the role coaching plays in pre-service teacher training remains limited. This book documents the learning model, its implementation and the exploratory research that accompanied it.

Within research on teacher education, there is a tradition of utilising identity as a core conceptual lens (Beijaard et al., 2004). As pre-service teachers experience their

training, they develop teacher identities that include a large number of beliefs about the work of teaching (Stenberg et al., 2014, p. 204). These beliefs, to varying degrees, become altered or reaffirmed through their programme of study. Lamote and Engels (2010), for example, found that at the beginning of their teacher education pre-service teachers followed a strong student-oriented approach to teaching, where the personal development of pupils and their participation in classroom activities were considered high priorities. Our research explores how mentorship and feedback—via a specific learning design—can be utilised to promote the development of pre-service teachers as learners of their own craft. We consider the teacher education space as a site where dispositions are fostered. Therefore, in designing our model, our primary focus was on furthering our understanding of how feedback supports and facilitates the formation (and reformation) of teachers' attitudes to honing their practical teaching skills. As we implemented the Real-Time Coaching for Pre-service Teachers Model, we found unexpected connections between the fostering of new skills and teacher identity. The human factor, as Tan (2015, p. 194) reminds us, is 'seen to be at the heart of all innovation'.

To develop our arguments concerning the effectiveness of the model, we first consider the needs and constraints in contemporary pre-service teacher education and theories of coaching, specifically in reference to the coaching of teachers. Chapter 1 discusses the needs of pre-service teachers and how teacher education works to meet those needs. It is important to recognise that this study is positioned in a contentious space of teacher education where there exist certain political pressures. Chapter 2 defines what we mean by coaching, before reviewing the limited literature on the role coaching has played in pre-service teacher education. We highlight key areas of exploration, such as peer coaching, behaviour management and technological advances. Chapter 3 sets forth the principles of design-based research, our learning design and the role of RTC in the model as a central pedagogic approach. We also set forth our main research questions and methodology for the study of the learning design. Part II of the book presents the findings, with Chap. 4 focusing on increases in affective learning, adaptation, resilience and efficacy for the pre-service teachers in the study. Chapter 5 examines how the pre-service teachers' practical skills were fostered through the learning model and Chap. 6 focuses on how the model promoted reflection and change in teachers' identities, which was an unexpected finding of the study. The book concludes with Chap. 7 which addresses the strengths and weaknesses of the 'Real-Time Coaching for Pre-Service Teachers Model' and what we see as ways forward in our research.

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