Chapter 13
Transitioning into the Profession with an Out-of-Field Teaching Load

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Abstract In Australian secondary schools, reports show there is a high incidence of geography being taught by an out-of-field teacher. It is also reported that there are a high proportion of specialist geography teachers who are not teaching geography. This chapter reports on findings from a recent longitudinal, qualitative study of five pre-service teachers (PSTs) as they transition into the profession. Participants enter the profession and their early career years with an expectation of being able to teach geography as their specialist subject. However, not only did their timetable include an out-of-field teaching load, they were also called upon to support out-of-field colleagues to teach geography. Reflexivity theory and the professional standards for teaching geography are used to analyse data. Results show a sustained and explicit process of theory–practice reflection enabled the PSTs to discern, deliberate and act upon the strength of their personal values and beliefs about teaching overall and about teaching geography to overcome the constraint of out-of-field teaching.

Keywords Geography education · Initial teacher education · Out-of-field · Reflexivity · Transition

13.1 Introduction

Transitioning into the teaching profession is internationally regarded as a challenging, uncertain, and complex career phase without a well-defined path which can contribute to teacher attrition (Abrandt-Dahlgren et al., 2014; Heikkinen et al., 2018). Evidence shows the experiences encountered by pre-service teachers (PSTs) during an initial teacher education program (ITEP), the professional relationships they develop, and the support structures available in schools are important for assisting their transition into the profession (Heikkinen et al., 2018; Mason & Poyatos Matas, 2015). Precarious or casual and short-term contractual employment (Millar, 2017; Mindzak, 2019) together with an overwhelming workload and level of responsibility (Fantilli &

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McDougall, 2009; Miles & Knipe, 2018) arise in the literature as common challenges or 'shocks' (Farrell, 2016) experienced by PSTs as they transition into the teaching profession. Out-of-field teaching is a common workload feature during a time of transition which presents many challenges to teacher practice and can be a contributing factor in decisions to leave the profession from those in their early career years (Du Plessis & Sunde, 2017; Gallant & Riley, 2017; Mason & Poyatos Matas, 2015).

Within initial teacher education, the gap between theory and practice is often noted in the practice of PSTs, particularly during professional experience (Stenberg et al., 2016). In response to this circumstance, Stenberg et al. (2016) suggest a purposefully designed professional experience around theory–practice reflection is helpful for enabling PSTs to have agency in transforming their pedagogical practice. Eckersley et al. (2017) and Strangeways and Papatraianou (2016) assert that when PSTs make their own connections between theoretical understanding and practical knowledge, they develop capacity to think and act like a teacher and identify with the role. This enhances their 'classroom readiness' and development as a teacher (TEMAG, 2015). If theory–practice reflection occurs in a subject-specific context, then critical engagement with subject knowledge occurs, which allows the practitioner to analyse their pedagogical and professional practice in terms of policy recommendations, curriculum documents, existing context, and reflexive problem-solving capabilities (Butt, 2018). For PSTs and early-career teachers (ECTs) to effectively navigate an out-of-field teaching context, questions are raised about the role of initial teacher education programs (ITEPs) in preparing teachers for such an experience. Results from an Australian study reveal a focus on developing teacher identity in ITEPs, such as through generating a teaching philosophy and deepening understanding is beneficial for helping PSTs to respond and adapt to the experience of out-of-field teaching (Campbell et al., 2019). Reflection is understood to act as a bridge between the incorporation of theory into practice, and specific theory–practice reflection activities can help PSTs to meaningfully understand the reasons why they teach as they do (Stenberg et al., 2016) within an in-field or out-of-field context.

This chapter reports on results about out-of-field teaching arising from a recent longitudinal, qualitative Australian study that investigates how the experience of transitioning into the teaching profession influences pedagogical practice in a secondary geography education context. The study sought to explore the following research question: How does transitioning into the teaching profession influence the transformation of pedagogical practice in the secondary geography classroom?' The aim of the study was to understand the experience of transition from the view of pre-service teachers (PSTs) together with how the experience of transitioning into the teaching profession influenced pedagogical practice. Another aim of the study was to investigate the relevance of the professional teaching standards for geography as a reflective tool in a PST and early career teacher (ECT) context because the standards arose from the practice of experienced geography teachers. Whilst it was determined that the teaching standards for geography are relevant to the reflective and pedagogical practice of PSTs and ECTs, findings from the study reveal that out-of-field teaching is part of the transition experience for each participant. Findings also show that a

sustained and explicit emphasis on theory–practice reflection enables the participant to respond to the initially identified constraint of out-of-field teaching.

In the study, the journeys of five secondary geography PSTs are qualitatively examined for 18 months, from the middle of their final year in an ITEP, to the end of their first year of teaching. Whilst the purpose of the research was not to explicitly investigate out-of-field teaching, this phenomenon clearly arose as being part of the experience of transition into the profession. The purpose of reporting findings about out-of-field teaching is to support the work of Du Plessis (2016) and Campbell et al. (2019) about ways in which practitioners can mitigate and manage the challenge of teaching out-of-field.

13.1.1 Geography Education in Australia

In 2018, the National Committee for Geographical Sciences (NCGS) launched a strategic plan for the discipline called Geography: Shaping Australia's Future (NCGS, 2018). The purpose of the strategic plan was to explain the contribution made by the discipline of geography to the economic, social, and environmental wellbeing of Australia. The plan provides a series of recommendations for future directions to advance the visibility of the discipline, including geography education in Australian schools. This strategic plan is drawn upon here in conjunction with theoretical examinations to provide an overview of the Australian context for geography and geography education.

In a recent review of the discipline, Head and Rutherfurd (2021) reported that whilst geography grew steadily in Australian universities between 1951 and 1981 with the appointment of eight to more than 200 full-time geography academics, in recent times the growth of the discipline has plateaued. Such plateauing is attributable to 14 out of 37 universities not including 'geography' in the school or department name because geography is incorporated into areas such as geosciences (Head & Rutherfurd, 2021; NCGS, 2018).

Geography education in Australian schools also faces challenges with identity because of curriculum positioning and the high proportion of out-of-field teaching compared with other subjects (NCGS, 2018; Weldon, 2016). For example, in curriculum development and school subject department structures, the interdisciplinary nature of geography is not recognised. For example, geography is known to straddle the sciences and social sciences (Baerwald, 2010) yet in Australian schools, geography is positioned in the Humanities and Social Sciences (HASS) key learning area (KLA) (Gerber, 1990). This diminishes the opportunities for exploration and representation of geography's interdisciplinary nature and has contributed to the recent call for the professional teacher associations to lobby Ministers of Education about recognising geography in policy and practice as a subject of science, technology, engineering, and mathematics (STEM) education (NCGS, 2018).

The *Australian Curriculum: Geography* was endorsed in October 2013 and available for implementation in Australian schools pending decisions by state and territory

curriculum authorities (ACARA, 2013). So, despite the introduction of a national curriculum for geography, its implementation varies around the country. In New South Wales (NSW), where research for the present study occurs, geography is core learning between Kindergarten up to Year 10 (age 16). In other states and territories, such as South Australia and the Northern Territory, geography is core learning from Kindergarten up to Year 8 (age 14). The discrepancy in core learning for geography across Australia affects visibility of the subject and perceptions of its relevance for further study and career pathways.

13.1.2 Out-of-Field Teaching in Geography

In this chapter, out-of-field teaching is defined in the context of subject specialisation and stage qualification (Du Plessis, 2015). Out-of-field teaching is also defined through self-identification which aligns with the work of Hobbs (2013) who asserts that out-of-field teaching can be determined from the way a practitioner identifies themselves and their practice.

It is known that out-of-field teaching is a common experience encountered by PSTs and ECTs as part of their transition experience into the teaching profession (Du Plessis & Sunde, 2017; Weldon, 2016), and that it presents constraints to teacher practice. For example, a study by Du Plessis (2019) with 48 teachers across seven schools in Australia and South Africa found that classroom management issues are more likely to occur when practitioners are trying to master content knowledge and content delivery in an out-of-field teaching context. Out-of-field teaching can also be a contributing factor in decisions made by PSTs and ECTS to leave the profession (Avalos & Valenzuela, 2016; Du Plessis & Sunde, 2017; Gallant & Riley, 2017; Mason & Poyatos Matas, 2015).

The extent of out-of-field teaching occurring in Australian secondary schools for geography is empirically under-researched and the reported existence of out-of-field teaching in geography presents a challenge for developing rigour and maintaining relevance of the subject. According to a report by Weldon (2016), 40% of teachers across Years 7–10 who teach geography are out-of-field because they did not complete a geography major and geography methodology as part of their teacher preparation. Further, the report by Weldon (2016) also states the proportion of teachers who are specialised in geography but do not teach it is greater than the proportion of teachers who teach geography out-of-field. As such there are implications from the high incidence of out-of-field teaching in geography for the development of subject-specialist teacher identity; teacher acquisition of discipline, subject and pedagogical knowledge in geography; and the incidence of increased levels of student misconceptions arising about geographical processes (NCGS, 2018).

In part, the high incidence of out-of-field teaching in geography is attributable to only 19 out of 37 universities offering geography methodology units in ITEPs which then affects the number of teachers who can graduate and identify as specialist geography teachers (NCGS, 2018). Geography: Shaping Australia's Future states

the number of geography methodology units available in Australia is insufficient for preparation of effective geography teaching and recommends that professional teacher associations should address provision of geography methodology units in ITE and the urgency of out-of-field teaching in geography with Ministers of Education (NCGS, 2018).

Recent Australian scholarship identified discussion about the 'degree' or 'scale' to which teaching occurs 'out-of-field' (Hobbs & Törner, 2019) and reflects systemic requirements or a need to respond to individual school contexts such as policy determinants for timetable loads and an allocated number of permanent teachers per school based on student enrolments (Price et al., 2019). However, the degree or scale of out-of-field teaching can also be connected to teaching within a Key Learning Area (KLA) where multiple subjects are offered. For example, Weldon (2016) states that teachers employed in the science KLA are in-field if they teach biology, chemistry, physics, earth and environmental science, and/or general science even if they meet the methodology or minor or major criteria for only one or two of those subjects. The same situation applies for teachers employed in the HASS KLA which includes geography and commerce in the secondary years of schooling up to Year 10 (age 16).

Results from a study conducted in the US by Nixon et al. (2017) confirmed the multi-subject offerings in KLAs and the scale of out-of-field teaching identified by Hobbs and Törner (2019). Nixon and colleagues followed 74 PSTs in secondary science for five years, starting from their entry into the profession. Out-of-field teaching amongst some participants appeared, in part, to be related to being assigned to teach within a KLA where the major or minor subject was a component of the subject offerings. For example, a PST may have a major in biology and a minor in earth and environmental science yet must teach general science because certification structures determine that they are qualified to teach in the KLA of science, and school organisation structures tend to be broader than one subject (Nixon et al., 2017). To address concerns about managing out-of-field teaching, Nixon et al. (2017) suggest the development of subject-specific induction programs aligned with professional standards. For example, the Next Generation Science Standards can help to develop teacher capacity in subject knowledge and pedagogical understanding.

Strategies exist to help PSTs and early career teachers (ECTs) manage the challenge of out-of-field teaching in their timetabled workload and develop their practice. These strategies include the provision of mentoring (Burger et al., 2021; Du Plessis, 2016; Fantilli & McDougall, 2009) and having access to support from school leadership teams (Buchanan et al., 2013; Du Plessis, 2016). Both strategies are known to build resilience amongst those who are teaching out-of-field to help them manage the challenge of this phenomenon (Du Plessis, 2016). Additional important support structures for beginning teachers include formal and informal engagement with Communities of Practice such as professional associations and having access to relevant and timely professional learning (Gallant & Riley, 2017; Rajendran et al., 2020).

13.2 Literature Review

In a thematic content analysis, Mason and Poyatos Matas (2015) identify three themes known to affect the transition experience of pre-service teachers (PSTs) from an initial teacher education program (ITEP) into the teaching profession: quality and nature of ITEP; collegiality and quality of relationships in a school setting; and presence of support structures overall. Each theme relates to the capacity of PSTs and early career teachers (ECTs) to respond to the challenges of transitioning into the profession, including the challenge of out-of-field teaching. Initial teacher education programs emphasise regular engagement with reflection and reflective practice facilitates the transformation of PSTs into effective, contemplative teachers who can connect theory with practice (Loughran, 1996). Engagement with reflection and reflective practice within ITEPs also helps PSTs to understand, analyse, adapt, and respond to context, including ethical dilemmas (Dimova & Loughran, 2009).

One area of reflection and reflective practice known to help PSTs transform their practice and adapt to challenging situations such as out-of-field teaching relates to the development of personal values and beliefs about teaching (Campbell et al., 2019). In geography education, reflection and reflective practice is known to focus on beliefs about teaching geography as a specialist subject. Opportunities for PSTs to explore their geographical subject identity arise during geography methodology units which helps them to understand their values, beliefs, and perspectives about geography teaching and develop their connection with the discipline itself (Brooks, 2016, 2017, 2021; Mitchell, 2017; Seow, 2016). A strong teacher–subject identity shapes a teacher's practice (Brooks, 2016, 2017). In a longitudinal investigation over 14 years with 10 geography teachers in England examined how teachers used their subject knowledge of geography to help guide the 'why' of their pedagogical practice and deal with challenges faced in their teaching of the subject (Brooks, 2016, 2017). Set questions were regularly posed to participants, such as: Why is geography important to them? Why is teaching geography worthwhile? And why do they prioritise some pedagogical approaches over others? (Brooks, 2016, 2017). Participant responses revealed that a disciplinary way of thinking (geographical thinking) with a focus on key concepts, such as place, was important in their decision-making processes about which pedagogical strategies to employ (Brooks, 2016, 2017). Further, a strongly held teacher–subject identity helped them to navigate their pedagogical practice because they knew what was important and distinctive about geography, so they could develop a 'subject story' that resonated with students (Brooks, 2017).

Depth of thinking about one's practice and resultant actions can be measured or assessed through the development of reflective frameworks or models that are suitable for use with a range of practitioners, including PSTs (Ryan & Ryan, 2013, 2015). Such frameworks or models can assist with determining how a practitioner activates their theory–practice knowledge to solve a problem arising in the classroom (Hennissen et al., 2017).

The study reported on in this chapter was conceptualised around reflection and pedagogy. The theoretical framework used was Archer's theory of reflexivity (Archer,

1982, 2010a, 2012). The Professional Standards for the Accomplished Teaching of School Geography (Hutchinson & Kriewaldt, 2010; Kriewaldt & Mulcahy, 2010), also known as the GEOGStandards formed the pedagogical conceptual framework. Reflexivity theory and the GEOGStandards were used in data analysis and were drawn on for sustained and explicit theory–practice reflection activities with participants to assist them in working through the problem of transitioning into the teaching profession, such as managing a timetabled load of out-of-field teaching. The Teaching and Assessing for Reflective Learning (TARL) model (Ryan & Ryan, 2013, 2015), was the conceptual framework used to understand the depth of reflection over time, however, this framework was used for data analysis and not in theory–practice reflection activities with participants.

13.2.1 Reflexivity Theory

Reflexivity theory addresses a structure-agent problem in education, in this instance, transition into the profession and the transformation of pedagogical practice. In reflexivity theory, Archer makes evident the relationships between structure, agency, and culture as transformative causal mechanisms, known as emergent properties (Archer, 1979, 1982, 1988). Reflexivity is defined as the 'bending back' of thought to stimulate inner conversation and create distance between self, circumstance, and the phenomenon requiring thought and action (Archer, 2010a). The inner dialogue or internal conversation is not observable in most instances; however, it is self-monitoring, self-aware, and changes over time. The inner dialogue is also contextualised by three emerging properties—structural, agential/personal, and cultural—to help one determine the most appropriate action for future practice (Archer, 2010a). Therefore, Archer's (1979, 1982, 1988) reflexivity theory can be understood as iteratively progressive cycles of identification, contemplation, and action whereby internal conversation allows clarification, evaluation, and re-evaluation of decisions so that resultant action will elicit impactful transformative practice (Archer, 2012).

Each emergent property can provide a separate understanding of its influence on ontologies and epistemologies in cycles of change (morphogenesis) or stability (morphostasis). Cycles of time are necessary to understand how emergent properties interplay with each other to generate morphogenetic or morphostatic cycles (Archer, 1995, 2010b; Archer & Morgan, 2020) and explore how practitioners manage change, choice, and decision-making processes in a variety of contexts (Archer, 2010a, 2010b; Archer & Morgan, 2020; Ryan & Carmichael, 2016). The level of influence occurring from each emergent property and actions taken may change over time as PSTs transition into the teaching profession and are exposed to different school contexts. Furthermore, emergent properties are not hierarchical or conflatable; the effect of their presence and interplay will differ over time to cause change or stability in response to a given situation and context (Archer, 2020; Archer & Morgan, 2020). Therefore, it is crucial for educators, particularly PSTs, to continuously reflect on

their own pedagogical practice and weigh up possibilities according to influence and context to then take appropriate action (Ryan & Carmichael, 2016).

Structural Emergent Properties (SEPs) include empirical evidence, rules, procedures, policies, and other structures to provide consistency and guidance to the conduct of activities (Archer, 2010b, 2017). Agential or personal emergent properties (PEPs) refer to personal values and beliefs; they are powerful influences because plans for action occur in response to the strength of their feelings or belief systems (Archer, 2010b, 2017). Cultural Emergent Properties (CEPs) refer to behaviour and practice associated with place, time, and people (Archer, 2010b, 2017).

Reflexivity theory emphasises internal dialogue as part of a 3D process about the influence of emergent properties: discernment, deliberation, and dedication (action). Reflexivity occurs when the inner dialogue focuses subjectively on one's reality by assessing concerns and practice and, in doing so, arrives at an action that allows one to play their desired role in the given context and shape change (Archer, 2003). Reflexivity theory was useful in analysing the out-of-field teaching experience of participants because it revealed the most influential emergent property in the cause, effect, and action taken.

Participants consider a recurring question: 'What makes your geography lesson geographical?' and respond according to what they discern and deliberate as influences of enablement or constraint on their practice. Their responses are explored in response to additional questions such as 'Why?', 'At what time?', 'Where?', 'Who?', and 'With what outcome or consequence?' which assists participants to reach a decision about how to act upon the influence which either maximises the enabler or mitigates the constraint (Archer & Morgan, 2020).

13.2.2 The GEOGStandards

The *Professional Standards for the Accomplished Teaching of School Geography* (Hutchinson & Kriewaldt, 2010; Kriewaldt & Mulcahy, 2010), otherwise known as the GEOGStandards, are the outcome of an Australian empirical research project managed by the University of Melbourne titled Strengthening Standards of Teaching through Linking Standards and Teacher Learning: The Development of Professional Standards for Teaching School Geography, 2007–2010.

The GEOGStandards were developed over three years, in collaboration with experienced specialist teachers of geography across Australia. The purpose of the standards is to provide a tool for teachers' self-reflection about their pedagogical practice in geography, and to initiate collaborative discussion and reflection as part of their professional learning (Hutchinson & Kriewaldt, 2010; Kriewaldt & Mulcahy, 2010). A strength in having a set of standards specific to the teaching of geography is that it provides value and an identity to the subject at a time when public perception about the discipline and the profile of geography education in schools and at universities is diminishing (NCGS, 2018).

Table 13.1 identifies nine evidence-based GEOGStandards as demonstrated

Table 13.1 Professional Standards for the Accomplished Teaching of School Geography (Hutchinson & Kriewaldt, 2010; Kriewaldt & Mulcahy, 2010)

Standard	Overview
1. Knowing geography and the geography curriculum	As the teacher: understand the discipline, including concepts and skills; understand the curriculum; understand that geography draws from the social sciences, physical sciences, and humanities; and make connections with other curricula and learning areas
2. Fostering geographical inquiry and fieldwork	Allow students to carry out: a range of structured and open-ended inquiries; and undertake inquiry in the field, selecting and using geographical tools
3. Developing geographical thinking and communication	Encourage and support students' understanding of spatial reasoning; conceptual interdependencies, interconnections, and assemblages; real-world contexts at a range of scales; and lived experience as a personal geography
4. Understanding students and their communities	Use local community contexts and personal geographies to connect, enhance, and enrich conceptual and perspective-focused learning
5. Establishing a safe, supportive, and intellectually challenging learning environment	Facilitate students becoming active participants in their learning by creating a need to know and creating conditions for students to question complex geographical ideas
6. Understanding geography teaching—pedagogical practices	Teachers: have extensive understanding of pedagogical content knowledge; encourage students to gather information from a variety of sources; use fieldwork; and introduce a range of tools to students
7. Planning, assessing, and reporting	Plan, monitor, and assess geographical learning through a range of formal and informal methods; recognise achievement and provide direction for improvement; and use diagnostic assessment to inform teaching practice
8. Progressing professional growth and development	Engage with professional learning communities and recognise that geography is an evolving subject that requires regular updating of content knowledge
9. Learning and working collegially	Actively engage with the professional community; share expertise; build a culture of professional improvement; and promote geographical education

by specialist, experienced geography teachers from schools across NSW, South Australia, and Victoria (Hutchinson & Kriewaldt, 2010; Kriewaldt & Mulcahy, 2010).

As participants consider the recurring question: 'What makes your geography lesson geographical?' they identify their practice with an appropriate GEOGStandard(s) and then connect this with their influences of enablement or constraint. Further questioning assists participants to incorporate the GEOGStandards as part of their pedagogical plan for action in responding to the most influential emergent properties of enablement or constraint on their practice (Archer & Morgan, 2020).

13.2.3 The Teaching and Assessing for Reflective Learning Model

The Teaching and Assessing for Reflective Learning (TARL) model (Ryan & Ryan, 2013, 2015) is a multidimensional framework used to indicate the depth of reflective thinking and action over time. In the TARL model, there two dimensions: categorical (cognition) and development. Within each dimension, there are customisable scales.

In the present study, the categorical (cognition) dimension was represented by the '4Rs Model of Reflective Thinking' (Ryan & Ryan, 2013, 2015). The 4Rs are reporting and responding, relating, reasoning, and reconstructing; they identify hierarchical levels used to guide reflective thinking as shown in Table 13.2.

The developmental dimension, also referred to as experience or course phase, shows the focus or subject matter of reflections over time. There are three levels to experience or course phase in the TARL model: foundation, theory, and professional practice. The current study was conducted in three phases (see Sect. 13.3). During

Table 13.2 The 4Rs Model of Reflective Thinking (Ryan & Ryan, 2013, 2015)

The 4R reflective scale	Description
Reporting and responding	An observation, opinion or brief report about an event or issue (e.g., a lesson or the act of reflection)
Relating	A connection is made between the event or issue (e.g., a lesson or the act of reflection) and the practitioner's own skills or experience or discipline knowledge to provide an understanding of purpose or importance (e.g., to improve)
Reasoning	An explanation of significant factors (e.g., lack of student engagement or pedagogical approaches) and a range of perspectives (e.g., a student or supervising teacher) in relation to the event or issue (e.g., a lesson or the act of reflection)
Reconstructing	A change in response to theory and practice is developed so the event or issue (e.g., an activity from a lesson) has become reframed or reconstructed, ready for the practitioner to deal with in the future. It is clearly stated what this change of understanding or practice looks like

Phase 1: Preparation, all participants were positioned at professional practice because they were coming towards the end of their studies in an ITEP. During Phase 2: Profession entry, and Phase 3: Positioned in schools, participants were positioned at foundation because they had just entered and were transitioning into the profession.

13.3 Methodology

The aims of the study were to understand the experience of transitioning into the teaching profession and how this experience influences or transforms pedagogical practice in the secondary geography classroom. To understand the processes of transition and transformation, it is necessary to have a timeframe divided into cycles so potential developments in pedagogical decisions and enactment, together with developments in reflective capacities, can be monitored. A longitudinal, qualitative, reflexive design enabled a deep understanding to be gained about context-specific transformative influences on pedagogical practice over time.

Key protocols of longitudinal research informed the research design, such as the conduct of repeated research activities over time with multiple data-generation instruments and making comparisons over a prolonged period of time with the same participant group (Johnson & Christensen, 2017; Neale, 2019). An invitation was extended to participants for them to 'member-check' the interpretation of data (Korstjens & Moser, 2018).

There were five purposefully sampled participants from a geography methodology class at the same large metropolitan university in Australia: Anna, Emily, Grace, Karen, and Matt. The research period for data-generation spanned 18 months and contained three phases:

- Phase 1: Preparation (June–August 2019) occurred in the month before, and during the time participants completed professional experience (each at a different school).
- Phase 2: Profession entry (September–November 2019) immediately followed from Phase 1. Each of the participants were still completing the final weeks of the ITEP, and had received provisional accreditation to teach.
- Phase 3: Positioned in schools (March–September 2020, extended to December 2020 due to COVID-19-related disruption): A short gap exists between the end of Phase 2 and the commencement of Phase 3 because, in Australia, the school year ends in December and the summer break occurs during January. The school year commences at the end of January.

Data-generation instruments reported on in this chapter are the social labs. Each social ab brought together the whole participant group. The focus of each social lab is in Table 13.3. Social labs are a space for discussing complex challenges (McKenzie, 2015). Dialogue, active listening, and the interchange of ideas are key features and demands of participating in a social lab. The purpose of social labs in the present

Table 13.3 Phase of the study and focus of the social lab

Phase	Month conducted	Focus of the social lab
Phase 1: Preparation	June 2019	Social lab 1 was conducted prior to commencing professional experience. Focus was on understanding the distinctive nature of geography and geography teaching
Phase 2: Profession entry	November 2019	Social lab 2 was conducted when participants completed ITEP requirements, were accredited to teach and were entering the profession. Focus was on examining influences on and choices about pedagogical practice
Phase 3: Positioned in schools	December 2020	Social lab 3 was conducted at the end of the school year and concluded data generation for the doctoral study. Focus was on examining the experience of transition and the influences on teaching practice

study was to identify features of transformative practice through explicit theory–practice reflection and the posing of teaching problems and provocations related to geography (McKenzie, 2015; Ryan et al., 2019).

Preliminary data analysis occurred using memos to make meaning of the data or make a 'first stab' at interpreting the data (Cope, 2021) in connection with the theoretical and conceptual frameworks—for example, 'enabling', 'personal belief', 'inquiry', or 'reporting'. Memos were a quick, informal note-taking process to help organise, explore, and reflect on the possible connections between and groupings of participants' experiences (Cope, 2021). Initial memo's were then organised into themes such as 'wellbeing', 'challenges', 'identity', 'pedagogy', 'personal beliefs'. Deductive data analysis drawn directly from the theoretical framework (Archer, 1982, 2010a, 2010b, 2012) and the two conceptual frameworks (Hutchinson & Kriewaldt, 2010; Kriewaldt & Mulcahy, 2010; Ryan & Ryan, 2013, 2015) which confirmed the themes from the initial memo's. Deductive codes such as 'Structural Emergent Property, timetable' and 'constraint' were derived from reflexivity theory; codes such as 'concepts' and 'inquiry' were derived from the GEOGStandards.

13.4 Findings

This chapter shares findings about out-of-field teaching as reported in the social labs conducted during each phase of the doctoral study.

13.4.1 Phase 1: Preparation

Social Lab 1 was held in early June 2019 at the beginning of Phase 1. Each participant was about to commence or had just commenced their final placement for professional experience. Anna was the only participant to report concerns about out-of-field teaching because as a history major, she self-identified as being out-of-field for geography.

Anna reported 'personal bias towards history' as a personal emergent property (PEP) that constrained her pedagogical practice. Anna was a history major, which meant that her exposure to geographical learning was limited to the core geography discipline units during her first year of study; a one-semester unit in her second year of study called 'Human Society and Its Environment', which focused on Australia-centric content knowledge about history, geography, civics, and citizenship; and the geography methodology units in her fourth year of study. Anna mentioned a pedagogical constraint being her 'lack of training in geography is more apparent [compared with teaching history] and I feel less trained in terms of "thinking geographically"'.

During a deliberation process, Anna reflected at the level of relating because she connected her personal beliefs about geography to her previous experience:

> I see geography as a subject that pilfers from other subjects, it pilfers from history, science, maths, philosophy … I don't always have complete confidence that I know the material and skills well enough to teach someone else.

Anna then pinpointed her enabling PEP as a 'belief in relationships with students' and being able to use inquiry-focused pedagogies to help build relationships. Anna connected her beliefs to a purpose or desired outcome, which demonstrated her ability to reflect at the level of relating: 'inquiry-based learning, and project-based learning helps my practice because it helps me get to know the kids which is really important to me'.

During the social lab, Anna identified the following GEOGStandards as being a distinctive feature of a geography lesson: knowing geography and the geography curriculum (GS1) and understanding students and their communities (GS4). For her goals during professional experience, Anna identified knowing geography and the geography curriculum (GS1) and geographical thinking and communication (GS3) as areas to work on in her teaching of geography.

13.4.2 Phase 2: Profession Entry

Social Lab 2 was held in late November 2019, at the end of Phase 2. Each participant had concluded their formal study in the ITEP and was either seeking work or were precariously employed at one or more schools. Anna, Emily, Grace, Karen, and Matt discerned, deliberated, and dedicated action about key features of their transition journey into the teaching profession; also about the nature and effect of influences on their pedagogical practice within and beyond the geography classroom.

Participants found the experience of transitioning into the profession to be a structural constraint on their practice. Structures discussed included timetabling decisions related to out-of-field teaching or teaching beyond their specialist subject area, and policy-related responsibilities of employment as a classroom teacher related to classroom management, marking final assessments, and report writing.

Out-of-field teaching was raised by Anna, Karen, and Matt as a constraint. Whilst Anna was a history major with geography as a minor area of study, Karen and Matt both had geography as their major area of study.

In the process of Anna 'writing up my CV' and 'looking for history jobs', Emily questioned Anna about whether she wanted to teach geography. Anna replied that she would 'teach geography but would not necessarily elect to teach it'. Anna spoke about a recent interview she had for full-time employment at a 'rural school in Queensland', where the focus of the discussion turned towards a range of subjects that she would be expected to teach if recruited to the role:

> …the more they talked to me, the more they were like 'you can teach legal studies and commerce', and I was like 'this does not sound great', and the more they were talking about me teaching other subjects [to history], I realised they are probably a lower-resourced school … I wasn't sure how comfortable I was going to be in that space, especially because I was going to be away from my support networks, so I ended up saying no. I've been applying at more local schools now. (Anna)

Anna's response demonstrated an ability to reflect at the level of reconstruction because she acted on the given circumstance. During her discernment and deliberation process, she reported a problem (teaching other subjects), related the situation to a possible reason why it occurred (lower-resourced school), and then reasoned why it would not be an ideal situation for her circumstances (away from her support networks). Anna then decided on and enacted a course of action (say no, apply for local schools).

Karen experienced out-of-field teaching during most of the time she was entering the profession. Karen related her current 'focus on classroom management skills' to teaching outside her specialist subject area. Her deliberations showed a reasoned approach towards reflection because implications for practice were revealed (classroom management):

> …casual teaching in two schools and I ended up teaching multiple subjects: art, geography, commerce, legal studies, future learning. I'm only trained in one of those, so it was definitely a new thing learning about different subjects, their content, and then learn about the students, the school, and the faculty … and that leads into classroom management, so I've been focusing on my classroom management skills.

Matt felt constrained by 'teaching commerce', and his reflection revealed an ability to relate his experience to prior learning: 'I've never been prepared for that, so there you go … it comes with a level of stress and expectation so that reduces my excitement [about teaching]'.

During the social lab, Anna, Karen and Matt identified the GEOGStandards they felt were distinctive to their teaching of geography. These GEOGstandards were also the ones they could use and apply to help them manage the experience of teaching

out-of-field. For Anna and Karen, it was knowing geography and the geography curriculum (GS1), fostering inquiry and fieldwork (GS2), and developing geographical thinking and communication (GS3). For Matt, the important GEOGStandards to him were GS2 and GS3 together with understanding students and their communities (GS4). Overall, participants reported the recurring question 'What makes a geography lesson geographical?' and the GEOGStandards to be an enabling evidence structure against which they could confirm in theory and practice, and further reflect on what becomes distinctive about teaching and learning in a geography lesson. Participants then substituted the out-of-field subject name, such as 'commerce', with 'geography' to provide them with a strategy for finding out how to teach out-of-field and discover distinctive features of the given subject. Such discernment and deliberation were reported as a helpful process they could apply to teaching subjects with which they were not familiar.

13.4.3 Phase 3: Positioned in Schools

Social Lab 3 was held at the end of Phase 3 in mid-December 2020. By now there were four participants in the study: Anna, Emily, Karen, and Grace. At the beginning of Phase 3, Matt decided to withdraw from the study because his entire teaching load for 2020 was out-of-field despite being recruited as a geography teacher. During Social Lab 3, participants discerned and deliberated the influences of transition on their pedagogical practice, including their achievements, challenges faced, and strategies for mitigating constraints or maximising enablers. Overall, participants were invited to think about their experience of transition as a 'year in review' to consider the context of change, stability or same-ness, and future aspirations or next steps.

Anna was teaching at a Kindergarten to Year 10 School in regional New South Wales and identified teaching out-of-field as indicative of her 'year in review'. Through the process of reflecting on her experiences, Anna no longer identified as an out-of-field teacher for geography because she was 'responsible for co-ordinating geography' during 2020, she defined herself as a geography teacher. However, Anna did identify as an 'out-of-field teacher' for 'teaching Stage 3, technology … but in another twist, teaching languages in 2021'. Anna outlined her experience of transitioning into the profession as having 'survived under pressure, so that is a success'.

Faculty organisation and timetabling structures resulted in some concern for Emily and Grace. Emily is a career-change teacher who is driven by a determination to develop herself as a specialist geography teacher. She noted that the school leadership team was supportive of her 'desire to teach geography only'; however, she reported being met with a difference of opinion with colleagues, for example, some of them 'thought I should teach commerce'. Grace reflected that teaching commerce and business studies was a constraint initially, although she found plenty of resources available through social media, 'the resources gained from Facebook groups is unbelievable'.

Anna and Grace identified the GEOGStandards they felt were distinctive to their teaching of geography. For Anna it was fostering inquiry and fieldwork (GS2), understanding students and their communities (GS4), and understanding geography teaching (GS6). For Grace it was knowing geography and the geography curriculum (GS1), fostering inquiry and fieldwork (GS2), and understanding geography teaching (GS6). Again, when deliberating about an out-of-field teaching context, participants reported the GEOGStandards to be most helpful to apply to the given out-of-field subject and direct them towards finding out what how to teach a subject with which they were not familiar. For example, in response to managing out-of-field teaching, Anna and Grace applied their understanding about, and practice developed from GS2; Grace also applied learning from GS1 to 'teach herself' the commerce and business studies courses through reading the syllabus and working closely with in-field teachers.

13.5 Discussion

The use of a recurring question: 'What makes your geography lesson geographical?' purposefully set against the GEOGStandards (Hutchinson & Kriewaldt, 2010; Kriewaldt & Mulcahy, 2010) was reported as an enabling evidence structure against which participants could confirm and further reflect on, in theory and practice, what becomes distinctive about teaching and learning in a geography lesson. The recurring question helped participants to explicitly use the standards to identify and reflect on their pedagogical choices in their geography lessons. The use of reflexivity theory (Archer, 1982, 2010a, 2012) encouraged the participants to interpret the broader context that influenced their decisions about pedagogical practice. Participants reported this theory–practice reflection process as being helpful, and one they could apply to teaching subjects with which they were not familiar.

Anna, Grace, Karen, and Matt spoke about out-of-field teaching being indicative of their transition into teaching profession during research phases, and Emily spoke about resisting suggestions from her colleagues to teach a subject other than geography. Such findings align with research (Gallant & Riley, 2017; Nixon et al., 2017) and policy (DET, 2018; Weldon, 2016) that ECTs are most likely to teach out-of-field. Findings about out-of-field teaching are discussed in three areas: identification and incidence of out-of-field teaching, mitigating the challenges of out-of-field teaching, and concerns about out-of-field teaching in geography.

13.5.1 Identity and Incidence

In Phases 2 and 3 of the present study, most participants taught part of their timetable out-of-field and identified themselves as out-of-field teachers for business studies (Grace), commerce (Grace, Matt), and sport, technology and in the primary school

(Anna). Anna commenced the study as a self-identified out-of-field teacher for geography but by the end of the study self-identified as a specialist geography teacher. Hobbs (2013) believed that identification of self and practice as an out-of-field teacher is important for a practitioner to engage with the process of seeking strategies for support. Du Plessis et al. (2015) suggested that out-of-field teaching occurs in response to subject specialisation and stage qualification.

Participants in the present study were geography teachers employed to teach in the Human Society and Its Environment (HSIE) KLA. Commerce and business studies are subjects of the HSIE KLA, and two participants were expected to teach these subjects during Phase 2, even though these subjects were not part of their specific subject training in the ITEP. This finding relates to discussion about 'degrees' or 'scales' of being 'out-of-field' (Hobbs & Törner, 2019), whereby an assignment to teach within a KLA occurs because a major or minor teaching subject is part of multiple subject offerings. However, certification structures determine the practitioner as qualified to teach within the KLA, and school organisation structures tend to be broader than one subject (Nixon et al., 2017). Therefore, participants' experience of out-of-field teaching in HSIE reflects systemic requirements and a need to respond to individual school contexts–for example, due to policy determinants for timetable loads and an allocated number of permanent teachers per school based on student enrolments (Price et al., 2019).

During Phase 3, Anna relocated to regional NSW for a 12-month contract at a Kindergarten to Year 12 School. She taught geography and history as her in-field subjects, and also taught extensively out-of-field in subject and stage: technology, sport, and in the primary years. At the end of 2020, Anna's contract was renewed for another 12 months and she knew her timetable would include teaching languages to students in Year 7 and 8 (ages 12–14). Anna's self-identification as an out-of-field teacher for subject and stage is consistent with the definition of out-of-field teaching used in the present study from the work of Du Plessis et al. (2015) and Hobbs (2013). Her experience correlates with a study by Sharplin (2014), which revealed that teacher shortages in regional and rural communities contribute to an increased likelihood of teaching out-of-field. Anna's experience is also an inevitable outcome of policy that requires a teacher to be positioned in every classroom yet exacerbates the incidence of out-of-field teaching in regional Australia because teacher distribution is concentrated in metropolitan areas (Hobbs & Törner, 2019).

13.5.2 Mitigating the Challenges

Two main challenges were identified in by participants about out-of-field teaching. Participants felt underprepared from the ITEP to teach subjects out-of-field and they also felt overwhelmed with having to learn content and find ways to teach a subject they were not specifically trained to teach. Miles and Knipe (2018) confirmed that feelings of under-preparedness are a common experience for PSTs as they transition

into the teaching profession from an ITEP. A study by Du Plessis (2019) acknowledged that a connection does exist for ECTs between the incidence of classroom management issues arising when practitioners are trying to master content knowledge and content delivery in an out-of-field teaching context. This was confirmed by two participants who believed classroom management issues were more noticeable when teaching out-of-field compared to when they were teaching geography.

Although participants in the present study reported out-of-field teaching as a constraint to their pedagogical practice in that given context because they felt underprepared, they each found a way to mitigate the challenge. A sustained emphasis on theory–practice reflection with a recurring question, where they explicitly used reflexivity theory and the GEOGStandards to interpret and take action upon their teaching beliefs and decisions meant they could apply the process of theory–practice reflection to understand how to approach teaching the out-of-field subject. By drawing on their beliefs about teaching and about teaching geography, and applying ideas from the GEOGStandards, such as knowing geography and the curriculum (GS1) and understanding students and their communities (GS4), participants used structural enablers such as reaching out to networks either in person or via social media groups, which they found helpful for gaining advice about suitable resources and strategies for teaching other subjects. These strategies support Gallant and Riley's (2017) finding that constraints associated with out-of-field teaching are best managed when practitioners purposefully engage with CoPs and have access to professional learning. In addition, Anna and Grace spoke about a personal desire to learn and 'teach themselves' the subject, thereby demonstrating their commitment to delivering high-quality teaching and learning regardless of the subject (Hobbs & Törner, 2019). Emily drew on her teacher–subject identity and shared with her colleagues evidence from Hobbs and Törner (2019) and NCGS (2018) about out-of-field teaching being prevalent in subjects such as geography and science to justify her refusal of an out-of-field teaching load in commerce during Phase 3.

Participants also spoke about their participation in the doctoral study as being like a mentoring program which helped them to interpret their teaching context and crystallise their beliefs about teaching and teaching geography which helped them to manage the experience of out-of-field teaching. Participants also mentioned the development of trusting relationships with members of the school leadership team or colleagues in their department helped them to respond to the constraint of teaching out-of-field. These coping strategies for out-of-field teaching connect to advice from Du Plessis (2016) about mentoring and support from school leadership teams and trusted others as being important for building resilience, developing teacher capacity, and reducing negative outcomes associated with out-of-field teaching.

13.5.3 Concerns About Out-of-Field Teaching in Geography

Participants in the present study all qualified as geography teachers, yet they taught out-of-field in addition to teaching in-field during entry and transition into the

teaching profession. Participants also reported being either the only specialist geography teacher or one of two geography teachers in their school. Whilst they taught in-field for geography, they also taught subjects outside their specialisation, despite the likely scope within their school context to have a full teaching load of geography, or at least a combination of their specialist teaching subjects. Participant experience corresponds with statistics in a national report about the out-of-field teaching phenomenon in Australian secondary schools (Weldon, 2016). The report showed that the proportion of teachers who are specialised in geography but do not teach it is greater than the proportion of teachers who teach geography out-of-field (Weldon, 2016). Out-of-field teaching presents many challenges to those entering and transitioning into the profession, and it contributes to attrition (Du Plessis & Sunde, 2017). Whilst each participant in the study chose to remain in the profession, the pressure of a predominantly out-of-field teaching load for 2020 was cited by Matt as his reason for leaving the study.

It is a concern that specialist geography teachers are not timetabled to teach a full load of geography when there is in-school scope to do so, especially when there are small numbers of graduating specialist geography teachers in Australia due to a small number of methodology courses offered in Australian ITEPs as evidenced in *Geography: Shaping Australia's Future* (NCGS, 2018).

13.6 Conclusion

Out-of-field teaching was encountered by each participant as they entered and transitioned into the teaching profession. The strength of their personal values and beliefs about teaching and teaching geography was influential in enabling each participant to manage the initially identified constraint of teaching out-of-field. To make sense of the transition experience and to determine what enabled or constrained pedagogical practice, each participant reflected on teaching context in response to a recurring question. To answer the recurring question, participants needed to explicitly consider the GEOGStandards (Hutchinson & Kriewaldt, 2010; Kriewaldt & Mulcahy, 2010) and reflexivity theory (Archer, 1982, 2010a, 2012).

Overall, in response to results about the constraint of out-of-field teaching, participant experience showed personal emergent properties were a dominant enabler of pedagogical practice together with the structural emergent property of applying a process of theory–practice reflection about geography to help manage teaching out-of-field subjects. Once the participants identified what enabled or constrained their practice they drew on their enabling influences to take action.

Out-of-field teaching was experienced during Phase 2: Profession-entry and Phase 3: Positioned in schools within a HASS context. Whilst participants remained in the profession for the current study, it is known that out-of-field teaching contributes to teacher attrition. To minimise future rates of attrition and reduce rates of out-of-field teaching for those entering and transitioning into the profession, it is recommended

for accrediting institutions to deem proficient status as conditional upon meeting the professional standards from a fully in-field teaching context.

Future studies could seek to understand the views about out-of-field teaching from a larger cohort of PSTs and ECTs. These studies could focus on how the participants respond to out-of-field teaching to inform unit development within ITEPs and design support structures, either within schools or as part of school-university partnerships. Results from such future studies could also provide an evidence base to understand the extent of out-of-field teaching occurring in a secondary geography education context because empirical evidence about the extent, reactions to, and reasons why out-of-field teaching occurs in geography is limited, both in Australia and internationally this would help to respond to recommendations in Geography: Shaping Australia's Future (NCGS, 2018) about how to address the out-of-field teaching phenomenon for geography in Australian schools but could also be appropriate in other countries.

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