'Those who can think, teach':

The pedagogical reasoning of pre-service teachers from different initial teacher education pathways

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ABSTRACT

South African initial teacher education (ITE) policy requires that all beginning teachers possess the same set of competences despite the variations in sequencing and pacing that exist between different qualification pathways (Department of Higher Education and Training, 2015, Appendix C). From the outset, beginner teachers are required to make decisions and judgements in their practice that requires the capacity to engage in pedagogical reasoning. This pedagogical reasoning is invisible and cannot be directly observed, even though it is a central and defining feature of professional teaching, but it can only be demonstrated in relation to a context of practice. Despite its central role in the practice of teaching, the literature on the pedagogical reasoning (particularly empirical studies) of pre-service and in-service teachers is scarce internationally, and entirely absent in the South African context. This study seeks to address this gap. The responses of ten participants (four fourth year Bachelor of Education (BEd) students, three Post Graduate Certificate in Education (PGCE) students, and three learnership student teachers) to their observations of a video recorded lesson formed the data set for this study. The study used concepts from Legitimation Code Theory (LCT; Maton, 2007) to show that the pedagogical reasoning of BEd participants demonstrated a significantly different semantic structure to that of those who had qualified by PGCE or Learnership routes. The findings of the data analysis suggest that when engaging in pedagogical reasoning, PGCE and Learnership participants tend to make axiological claims using everyday language and terminology, with little to no abstraction to principles of practice, using themselves as implicit models of exemplary practice as a basis for legitimation for their judgements. The BEd participants made more knowledge claims in their responses to the observation of a recorded lesson than the other cohorts. They used more specialised language and terminology which condensed more meaning to abstract principles or rules of teaching from the context of the lesson in the video that they observed. They also used both personal experiences of teaching and theoretical ideas as bases of legitimation. The interpretation of the data therefore indicates that the PGCE and Learnership participants predominantly employ a *cultivated gaze* to make judgements and engage in pedagogical reasoning from the outset of their careers, while the BEd

participants drawn on both a *cultivated gaze* as well as a *trained gaze.* I argue, therefore, that the BEds drew on a wider field of criteria when engaged in pedagogical reasoning when responding to the recorded lesson. They were able to make sense of the teaching in the recorded lesson from the perspective of theory, and from the perspective of their own experiences where the criteria for good teaching are more explicit. The PGCE and Learnership participants drew from a single field of criteria, using their cultivated gaze, thereby limiting their criteria for good teaching and ways in which they could understand the teaching in the recorded lesson. The findings of this study show that differently qualified beginning teachers do not draw equally on experiential and conceptual tools when analysing an observed lesson. This may very well suggest that their responses to other artefacts of practice may be substantively different.

KEYWORDS

Pedagogical reasoning; initial teacher education; differently qualified pre-service teachers; professional; Legitimation Code Theory; Specialization Dimension; Semantics Dimension; gazes

DECLARATION

I declare that this thesis is my own unaided work. It is submitted for the degree of Doctor of Philosophy in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any other degree or examination in any other university.

16th day of September, 2020.

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DEDICATION

This thesis is dedicated to all the Cystic Fibrosis angels who now breathe easily in His arms.

Hope when the moment comes, you'll say:

I, I did it all

I, I did it all

I owned every second that this world could give

I saw so many places – the things that I did

With every broken bone

I swear I lived

(Tedder & Zancanella, 2014)

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LIST OF ABBREVIATIONS

BEd   Bachelor of Education

DBE   Department of Basic Education, Republic of South Africa

EPR   Episode of pedagogical reasoning

EPR B*x*[1]   Key BEd EPR

EPR L*x*   Key Learnership EPR

EPR P*x*   Key PGCE EPR

ER   Epistemic relations

FG   Quote from a focus group interview

II   Quote from an individual interview

IR   Interactional relations

ITE   Initial teacher education

LCT   Legitimation Code Theory

MRTEQ   Minimum Requirements for Teacher Education Qualifications Policy

PCK   Pedagogical Content Knowledge

PGCE   Post-Graduate Certificate in Education

SD   Semantic density

SG   Semantic gravity

SR   Social relations

SubR   Subjective relations

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[1] Where x refers to the key quote number. The key quotes and their numerical referents can be found in Appendices F1, F2, and F3.

SECTION A:

INTRODUCING THE STUDY

CHAPTER 1: INTRODUCTION

1.1 *Long pre-service teacher education programmes delay income for South African families*

As much as initial teacher education programmes ensure prospective employability and financial security in the long term, they also demand a financial investment with a long delay of return. Pre-service teachers, in getting a university qualification to enable them to participate in the working world, are often to become the breadwinners in their family units. The recommendation by the Department of Education in 2000 that prospective teachers engage in a four-year-long, 480-credit Bachelor of Education (henceforth BEd) degree or one-year-long Post-Graduate Certificate in Education (henceforth PGCE – to cap their three-year undergraduate degree) means that one needs to study for at least four years in order to obtain a professional teaching degree. Even if pre-service teachers partake in a learnership programme, they are still required to study part-time for their degree, which is four years for the BEd, or two years (in addition to an undergraduate degree) for the PGCE. While the four-year qualification intends to address the issue of South African teachers' generally poor subject knowledge and sets out to produce graduates with a high standard of professionalism (Minimum Requirements for Teacher Education Qualifications, henceforth MRTEQ,[2] Department of Higher Education and Training, 2015), this shift to a mandatory four-year study period in 2002, Welch (2002) argues, did not consider "whether a long initial degree is the best route for reaching the goal of quality professional education for teachers" (p. 27). It also did not consider the challenge presented by "expensive higher education and training institutions" (p. 26). The decision does not take into account the impact on many working-class families, whose primary source of income is delayed by prolonged initial teacher education (henceforth, ITE).

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[2] The MRTEQ policy document is the official South African policy on teacher education, and outlines the qualifications for teachers that are acceptable in the eyes of the Government, delineates the knowledge types that student teachers need to engage with during each of the mandated qualifications, and it gives a list of competences which every beginning teacher (no matter which qualification they have) should be able to display.

Four-year teacher preparation programmes, however, have not always been the case in South Africa. Before the country became a democracy in 1994, there were four distinct teacher education programmes: one for white South Africans, one for black South Africans, one for Indian South Africans and one for mixed-race South Africans (Welch, 2002). These varied dramatically, with black teachers receiving a "two-then-three year" (*ibid.*, p. 19) teacher training certificate[3], as opposed to white teachers, who received a "three-then-four year" teacher training or teacher education (*ibid.*). While the shorter initial teacher education programmes, such as the (now discontinued) Diploma in Education, would be more effective in producing a greater number of teachers more quickly, there are potential benefits to a longer duration of ITE programmes. The longer study period associated with the BEd and PGCE aims to produce teachers with higher levels of content, pedagogic and educational knowledge, but also keeps prospective teachers out of the classroom for longer. This is likely to be frustrating for families of pre-service teachers who do not have access to the financial support of a working teacher for four or more years. Furthermore, anecdotal evidence reports that many pre-service teachers undertaking full-time ITE programmes have been offered opportunities to leave their university studies and complete their initial teacher qualification through a learnership, coupled with study through distance learning[4]. Although pre-service teachers who are engaging in a learnership programme do earn a small stipend, it still takes them at least four years to graduate and earn a beginning teacher's salary.

1.2 Different 'routes' to becoming a teacher

Currently, there are three major 'routes' to become a qualified teacher in South Africa: a) the four-year full-time BEd degree, b) a three-year bachelor degree followed by a one-year PGCE, and c) the so-called 'learnership', based on an apprenticeship with distance learning. To use the parlance of Basil Bernstein (1986), the difference between the BEd and PGCE lies in the sequencing and pacing of the knowledge taught during the programme. In a PGCE programme, content is covered first during the student's undergraduate programme, and then educational and pedagogy

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[3] It should be noted that before teacher training colleges were established, secondary schooling was considered an adequate qualification to teach.
[4] The largest distance university in South Africa is The University of South Africa, known as UNISA.

knowledge, whereas in a BEd programme, content, education, and pedagogy are taught in parallel across all years of study. This means that the selection of education and pedagogic knowledge to be taught and learned will be different too (the shorter time-span and resultant faster pace of the PGCE, for example, may require that programme coordinators select the content and knowledge to be taught and learned differently to the BEd).[5]

1.3 Teaching requires the capacity to reason

In South Africa, teaching is a degreed profession. A degree or post graduate certificate at NQF 7 which requires a "knowledge-base theory and methodology" which is "intensive, theoretical and applied" that enable flexibility in a professional practice (Department of Higher Education and Training, 2015, pp. 60-61) is necessary for a professional teacher to practice. A profession requires a knowledge base to enable pedagogical reasoning in practice (Shulman, 1998)[6]. It is this pedagogical reasoning that opens up possibilities for pre-service teachers to make professional judgements in situ. Shulman (1987a) argues that

> [t]he goal of teacher education … [is] to educate teachers to reason soundly about their teaching, as well as to perform skilfully. Sound reasoning requires both a process of thinking about what they are doing and an adequate base of facts, principles and experiences from which to reason. *Teachers must learn to use their knowledge base to provide the grounds for choices and actions.* (p. 13, emphasis added)

Teachers need to draw on their knowledge base in order to "have a sound subject knowledge", "know how [their learners[7]] learn", "communicate effectively [...] in order to mediate learning", "be knowledgeable about the school curriculum", "identify learning or social problems", "assess in reliable and varied ways", and "reflect critically, in theoretically informed ways" (Department of Higher Education and Training, 2015, p. 62). They need to *know* how to do these things and draw on that specialised teacher knowledge. Moreover, they need to employ pedagogical reasoning and exercise

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[5] Please see the Context of this Study chapter for an elaboration.
[6] Please see the Literature review for an elaboration.
[7] 'Learners' is the terms used to refer to school-going candidates, and 'students' refers to post-school, university- or college-based candidates.

professional judgement to teach in conceptually informed and contextually responsive ways. Morrow (1999) argues that "there is a conceptual connection between the content and the outcomes of learning", and that to reach these outcomes and display competences, the teacher needs to make "professional choices and decisions" in order to "express a conceptual understanding of what [they are] trying to enable the learners to learn" (p. 127).

The MRTEQ policy demands that beginner teachers draw on their knowledge base in order to teach effectively. For example, it says that graduates need to display competences such as knowing "how to teach their subject(s) and how to select, determine the sequence and pace content in accordance with both subject and learner needs," "tailor their teaching [to the learners' needs]," "use available resources appropriately, so as to plan and design suitable learning programmes," and "use the results of assessment to improve teaching and learning" (Department of Higher Education and Training, 2015, p. 62). What it does not say is that these competences require the teacher to reason carefully about their practice and draw on their knowledge base of teaching. This selection of quotes are examples of competences which cannot be learned and applied generically but require the newly qualified teacher to engage with pedagogical reasoning. As such, while South African ITE policy is cast as a *knowledge-based* policy, it continues to list observable *competences* that all teachers should be able to display, with what seems to be very little regard for the development of the capacity to reason pedagogically to justify pedagogical moves within the practice of teaching. Furthermore, and this is the point of departure for this study, it accredits two different qualifications to become a teacher – the BEd and the PGCE – but expects the same beginning competences from each, even though it acknowledges the different sequencing and pacing of the two qualifications.

1.4 *"Because wisdom can't be told"*[8]*: The focus of this thesis*

Pedagogical reasoning cannot be 'taught' like subject knowledge or teaching strategies can. It needs to be developed as pre-service teachers develop, and the

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[8] This striking quotation is the title of an article by Charles L. Gragg. While I have not read the publication, I thought that its title was particularly apt for this subsection.

ability to reason about one's own teaching is seen by many as a benchmark of the expert pedagogue (Rusznyak, 2008; Berliner, 1994; Shulman, 1987a).[9] Whether the ability to reason is developed through knowledge for teaching or within a context is a debated topic.

In the 'knowledge for teaching' camp, authors like Shalem (2014), Winch (2012), Hoban (2005), Hirst (in Hirst & Carr, 2005), and Craib (1992) argue that the ability to reason is grounded in theoretical knowledge, which "[binds] professional judgement" (Shalem, 2014, p. 107), offering "a conceptual toolbox for thinking about educational problems" (Winch, 2012, p. 4), and allowing the teacher to develop counter-intuitive insights about his or her practice (Craib, 1992). Others disagree, and argue that the ability to reason is contextually developed, and that it is "inextricable from the parochial social and historical contexts in which [it is] posed and addressed" (Carr, in Hirst & Carr, 2005, p. 263). Either way this research intends to unpack one of the most central aspects of teaching: the wisdom of being able to understand all facets of teaching and the teaching context in complex concert with one another. I would consider this the most difficult part of learning to teach: "… the least codified of all" (Shulman, 1987a, p. 232) of the knowledge bases of teaching. It intends to begin to uncover the pedagogical reasoning employed by nearly qualified teachers who have chosen different ITE routes to prepare for professional practice.

1.5 Problem Statement

The problem with pedagogical reasoning is that it is invisible and cannot be directly observed. Additionally, it cannot be accessed outside of a practice-based context or artefact of practice because it can only be demonstrated in relation to something else. An opinion can be demonstrated in relation to something else, but this does not necessarily qualify it to be an episode of pedagogical reasoning (Horn, 2010, henceforth EPR). What differentiates pedagogical reasoning from an opinion is that the former rests on the ability of the demonstrator to provide a specialised justification that is informed by some sort of knowledge base, be it conceptual or practical. The

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[9] See the Literature review for an elaboration.

specific problem that this study wishes to explore is how different kinds of teacher education enable pre-service teachers to construct a coherent knowledge base that enables pedagogical reasoning, despite the disparities in priorities, sequencing and pacing that characterise different pathways through ITE. This expectation rests on the assumption that all pre-service teachers possess a similar knowledge base and can draw on it for pedagogical reasoning. It is not clear to what extent the discrepancies in the priorities given to the kinds of 'knowledges' to be learned, the sequence in which they are learned, and the pacing of the teaching and learning in the various initial teacher education programmes affect the newly-qualified teacher's judgement on practice. This study investigates the nature of the pedagogical reasoning that pre-service graduates engage in, as well as the grounds for this reasoning.

1.6 Purpose and aims of the research

The purpose of this research was to investigate the pedagogical reasoning of a sample of nearly qualified teachers from different cohorts, in order to ground pedagogical reasoning about an artefact of practice. The research intended to determine – from the research data – whether there are differences and commonalities in the ways that differently qualified teachers use their knowledge bases for reasoning in the knowledge bases of the different cohorts of pre-service teachers (the BEd, PGCE and Learnership pre-service teachers). The research aimed to describe *how* differently qualified pre-service teachers reasoned about practice, employing Legitimation Code Theory (henceforth LCT; Maton, 2007) to explore the ways in which differently qualified participants made judgements about teaching. The overall purpose of the study was to develop the structures underpinning the EPRs of each of the cohorts' in order to understand if and how their pre-service programmes contributed to their engagement in pedagogical reasoning and professional judgement-making. Each cohort's pedagogical reasoning and judgements were analysed in terms of their structure, abstraction, and basis for legitimation.

1.7 Research questions

The research questions that have guided this research, therefore, are:

1. *How do final year pre-service teachers engage in pedagogical reasoning and judgements when analysing an artefact of practice?*
   a. What aspects of teaching do they foreground and background?
   b. On what basis are their judgements legitimised?

   and

2. *What gaze(s) on practice have differently qualified pre-service teachers developed?*
   a. What do the participants identify as the grounds for legitimation of their pedagogical reasoning?
   b. To what extent do ITE programmes result in homogeneity in the ways in which its graduates engage in pedagogical reasoning?

1.8 Rationale for this study

According to Morrow (1999), teaching is the "professional practice of organising systematic learning" (p. 70), and despite the apparent lack of codification in the knowledge base of teachers[10] (Muller, 2009), the teacher's pedagogical reasoning, which is grounded in knowledge, can still be rational and used to organise (and enable) systematic learning (*ibid.*). In Morrow's terms, the reason for doing this study is to analyse the nature of pedagogical reasoning and then explicate what knowledge base(s) the participants are drawing on in order to justify their reasoning.

Furthermore,

> … the nature of professional knowledge has escaped scholarly notice, and when spoken about at all, is spoken about in terms of professional expert judgment, and what professionals *can do* with the knowledge. What the *knowledge is that professionals have had to acquire to be experts* has, by and large, eluded scholarly attention. (Young & Muller, 2014, p. 5, emphasis in the original)

By investigating the knowledge bases for legitimation of pedagogical reasoning, and the way in which nearly-qualified pre-service teachers engage with the reasoning,

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[10] This debate is presented in more detail in the Literature review.

then, this research hopes to begin to address the gap identified by Young and Muller (2014), by mapping what knowledge bases nearly-qualified teachers draw on in order to act as autonomous professionals. Further to this, it examined the structure of pedagogical reasoning engaged in by differently-qualified graduates by presenting findings about the level of abstraction of, networking of ideas in, and bases of legitimation for EPRs.

The MRTEQ (Department of Higher Education and Training, 2015) asserts that teaching is a profession, and that ITE should involve theoretically-informed knowledge-based professional preparation. According to Shulman (1998), part of professionalism is the ability to make judgements in uncertain contexts, which is contingent on (pre-service) teachers' ability to engage in pedagogical reasoning in situ. By developing a map of the kind of pedagogical reasoning that beginning teachers engage in, and understanding which knowledge bases they draw on to ground their pedagogical reasoning, we begin to have the ability to assess and compare the ways in which ITE programmes are enabling pre-service teachers to engage in pedagogical reasoning.

1.9 Structure of this thesis

This thesis consists of ten chapters:

Chapter 1 has introduced the study in terms of becoming a teacher in a South African context and locates pedagogical reasoning at the heart of teachers' professional practice. The problem statement, research questions and rationale for the study arise from the problems identified in the introduction.

Chapter 2 focuses specifically on the context of the study. It is a description of the historical role of pedagogical reasoning and professional judgement in South African education, as well as the shifting notions of teacher knowledge and the role of pedagogical reasoning and professional judgement. It argues that because teaching is conceived of as a profession in South Africa, pedagogical reasoning lies at the core

of teachers' practice, and warrants investigation. These shifts are organised by the major teacher and education curriculum moments in South Africa.

Chapter 3 argues that pedagogical reasoning is a central aspect of professional teaching. I argue that there exists a 'constellation clash' between different conceptions of teaching, which have different implications for teacher education. I also argue that while pedagogical content knowledge (PCK, Shulman, 1987a) is crucial in order to teach, it is knowledge myopic (Maton, 2014e, p. 8). The gap in scholarship that this study aims to address is identified, namely that empirical research on the pedagogical reasoning of pre-service teachers is limited and considering its central role in the professionalisation of teachers, and its implicit role in the competences of newly-qualified teachers (Appendix C of MRTEQ, 2015[11]), it requires attention. I argue that LCT gives a language with which to explore PCK and pedagogical reasoning and judgement of differently qualified pre-service teachers.

Chapter 4 describes the conceptual framework of the study, elucidating how salient concepts interact with one another, and the use of LCT in the study. It begins with a discussion of salient knowledge bases that may be drawn on in order to engage in pedagogical reasoning. It then develops an argument for the usage of LCT as a tool to understand the ways in which differently qualified pre-service teachers engage in pedagogical reasoning with particular usage of LCT's Specialization and Semantic Dimensions. It also uses LCT's Social Plane to understand the bases of legitimation of for their pedagogical reasoning. Centrally, it documents the development of translation devices (Maton & Chen, 2016) to understand how the theory talks to the data, and how the data explains the theory. In the present study, the translation devices are a set of tools to clarify what pedagogical reasoning looks like in the data, making the coding and analysis of the data much more transparent.

Chapter 5 describes and accounts for the research paradigm as well as how the research participants were chosen and how data were analysed. It then moves to a

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[11] This can be found in Appendix A of this thesis.

discussion around ethical research practice, truthfulness, validity, and trustworthiness within the context of the present study, and describes how I considered such concerns.

Chapter 6 presents the findings of the data on the Learnership participants, building an argument that participants made negatively-charged judgements about the teacher in the artefact of practice, foregrounding the ways in which they thought a teacher should be as a person, that they used simple language and terminology to make and explain judgements, which were grounded in the context of the artefact of practice and rarely abstracted therefrom, and that they legitimised their judgements using their reflections on their own practice.

Chapter 7 presents the findings of the data on the PGCE participants, building an argument that participants made negatively-charged judgements about the teacher in the artefact of practice, foregrounding the ways in which they thought a teacher should be as a person, that they used simple language and terminology to make and explain judgements, which were grounded in the context of the artefact of practice and rarely abstracted therefrom, and that they legitimised their judgements using their reflections on their own practice.

Chapter 8 presents the findings of the data on the BEd participants, building an argument that participants made negatively-charged judgements about the teacher in the artefact of practice, foregrounding what a teacher should know and be able to do, that they used relatively specialised language and terminology to make and explain judgements, which were grounded in the context of the artefact of practice and often abstracted therefrom, and that they legitimised their judgements using theoretical ideas.

Chapter 9 presents the discussion of the findings, drawing interpretations about the gazes that have been developed by each of the participant groups, and what their different pedagogical reasoning means for the assertion that all teachers need to

display the same competences at the end of their ITE programmes (Appendix C of MRTEQ). I also consider the constellations with which each of the participant groups' data aligns, and what this reveals about their conceptions of teaching as a practice. I discuss what the findings mean for each route's ability to think about their practice systematically.

Chapter 10 concludes the research, highlighting the major claims made by the research with respect to pedagogical reasoning of differently qualified pre-service teachers, and their implications for future research into ITE. It also outlines areas for further research. The reference list and appendices follow.

SECTION B:

LOCATING THE STUDY

CHAPTER 2: CONTEXT OF THE STUDY

2.1 Teacher reasoning in South Africa – a history

This chapter looks at the shifting notions of teacher knowledge and related conceptions of pedagogical reasoning associated with the profession in the twentieth and twenty-first century history of teacher education in South Africa. It argues that because teaching is conceived of as a profession in South Africa, pedagogical reasoning lies at the core of teachers' practice, and warrants investigation. These shifts will be organised by the major teacher and education curriculum moments in South Africa.

Pre-1994: fundamental pedagogics curtailing pedagogical reasoning

From 1948 to 1994, South Africa was governed by the white supremacist Nationalist government (although the system of 'apartheid' itself was only formalised during the Verwoerd ministry of 1958 to 1966 (Hart-Davis, 2007)). Education was utilised as a key means of enforcing the Nationalist government's racially oppressive and segregationist ideals, and so, control of teacher education was a natural extension of this political agenda (Robinson, 1999). The educational philosophy of 'fundamental pedagogics' dominated teacher education colleges during this period (Welch, 2002). Fundamental pedagogics as an approach to teacher education "claimed to arrive at a set of immutable truths about education – divorced from the socio-political context of education. In this way it avoided a critique of the ideology which informed its own world view" (*ibid.*, p. 20).

As mere tools used to perpetuate the ideals of the apartheid regime, teachers were not considered to be professionals. The policy of "[emphasising] transmission of knowledge and rote learning,[12] in a manner that was inherently authoritarian, and actively discouraged critical reflection, analysis and the development of innovative

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[12] Curricula for black learners was particularly dominated by pedagogies of 'drill and practice' (Hoadley, 2011).

teaching strategies" (Rusznyak, 2008, p. 73), cut the authority of the teacher down in a manner consistent with what Hargreaves (2000) calls the 'Pre-Professional Age' of teaching. The ability of teachers to engage in pedagogical reasoning and professional judgement was severely curtailed. The job of teachers was to act as vectors[13] of politically charged knowledge, implementing routines and content knowledge that was strictly prescribed and controlled by the Department of Education.

Teacher education itself was racially segregated, with different races being trained differently, in order to perpetuate and maintain their class designation. The operative word was 'training'. ITE was technically oriented to train prospective teachers to implement the directives of the Department. Because pre-service teachers were not being trained to be autonomous professionals, their pre-service training did not aim to develop the capacity for pedagogical reasoning and making judgements in or on practice. The knowledge base of teaching across teaching qualifications was tailored to ensure that persons of colour were inculcated into a consciousness of subservience, and that white South Africans were given access to privileged education and job opportunities. Teacher education for white teachers during apartheid was oppressive in its own way, with pre-service teachers being trained to "carry out the directives of their more knowledgeable superiors" (Murray, 1992, as cited in Hargreaves, 2000, p. 156).

1994 to 2011: OBE, Curriculum 2005, and NSE
After the official end of apartheid in 1994, education was seen as a priority area to be addressed in order to "purge the apartheid curriculum [...] of 'racially offensive and outdated content" (Jansen, 1999, p. 145) as well as to catapult South Africa into the global market (Welch, 2002). An overhaul of the teacher education in South Africa was therefore required. Teacher education was incorporated into higher education (it was seen as separate during apartheid, and teachers were trained in their own, racially segregated colleges of education) in order to create a coherent, efficient system of

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[13] The word 'vector' is used in the biological sense here – meaning that the teachers were transmitters of the knowledge to the learners, and in no way applied their own rationality to the knowledge or the way in which they taught. They were required to do this in much the same manner as the mosquito transmits malaria to the victim: with no alteration to the pathogen.

teacher education. Welch (2002, p. 26) reports that in just seven years, one hundred and fifty teacher education colleges were absorbed into twenty-three higher education institutions.

Outcomes-Based Education (OBE), the antithesis of fundamental pedagogics (Welch, 2002), was adopted. Learners were now seen as active, critical thinking was encouraged, rote learning was to be avoided, and teaching was to be learner-centred (Hoadley, 2011, p. 148). Knowledge's role in the curriculum became arbitrary, and what was considered important in education was that everyone had an equal voice in teaching and learning. Curriculum 2005 "entailed … an eschewal of the definition of content to allow for a proliferation of sites for learning, and also the avoidance of explicit prioritizing of knowledge distribution to any particular group" (Hoadley, 2011, p. 145). The teacher's knowledge, then, became central to teaching and learning, as Jansen (1999) describes: "[t]he teacher [was] seen to be in a position of authority to the learner and an authority in terms of content which [was to] be transmitted" (p. 148). Importantly for this study, teachers came to be conceived of as professionals. They were no longer merely implementers of policy directives but were now responsible for the selection of content to be taught, as well as the pedagogic strategies and assessment techniques that they would employ in order to fulfil the prescribed outcomes. This placed teachers squarely into the role of the professional because this autonomy in terms of content, pedagogy and assessment selection necessitated the employment of pedagogical reasoning and judgement. Teachers were now required to consider what content would be most suitable to meet the required outcomes, which teaching strategy would suit the demands of the content and the learners, and so on. The problem for in-service teachers at the time was that they had to shift their perspective on their role as a teacher. Robinson (1999) tells the story of an in-service teacher who, virtually overnight, has to completely change what she understands to be the job of the teacher. She has to embrace completely foreign pedagogic techniques. She finds herself required to choose textbooks for her subject (but she does not know the criteria for a 'good' textbook and has never needed to make such a judgement). She has to critique her colleagues' teaching, but she has never had to think about teaching in a critical way. So, while pedagogical reasoning and judgement

became central to teachers' practice in theory, it was not necessarily a reality in South African classrooms.

In terms of ITE, the *Norms and Standards for Educators* (NSE, Department of Education, Republic of South Africa, 2000) was introduced in 2000 when Curriculum 2005 was replaced by the Revised National Curriculum Statement (RNCS). The RNCS still upheld the outcomes-based ideals of education, but "made the content of curriculum more accessible to teachers" (Rusznyak, 2008, p. 79). This is evidenced in the 'Seven Roles of the Teacher', as outlined in the NSE. The teacher was seen as a learning mediator, interpreter and designer of learning programmes and materials, leader, administrator and manager, scholar, researcher and lifelong learner. They had a community, citizenship and pastoral role to fulfil. They were assessors and learning area/subject/discipline/phase specialists (Department of Education, Republic of South Africa, 2000). The purpose of these roles was to describe what it meant to be a teacher, but it also served as a 'job description' for the duties of the teacher (Morrow, 2005). The way in which these roles were presented, divorced them from a knowledge base for teaching. Consequently, despite the teacher being formally presented as a professional, the fulfilling of these roles as observable behaviours - as "atomised elements" (Morrow, 1999, p. 113) – was actually at the expense of knowledge, pedagogical reasoning and judgement.

The primary role of the teacher, that of enabling learning, was often compromised because teachers were preoccupied with fulfilling their seven roles adequately. The "context-blind" (Morrow, 2005, p. 98) nature of the seven roles led to teachers becoming overwhelmed by the expectations placed on them. As Morrow (2005) argues, the work of a teacher in a well-functioning school is very different to that of a teacher in a poorly-functioning school, and so, the enforcement of generic roles "makes greater demands than any individual can possibly fulfil" (Morrow, 2005, p. 99). Furthermore, Morrow (2005) argues that through the implementation of the seven roles, every teacher was allocated the responsibilities of the entire education system. The NSE did not, however, completely disregard the role of teacher knowledge and

professional judgement on practice. Three categories of competence (practical, foundational and reflexive), for example, did refer to the teacher's "ability, in an authentic context, to consider a range of possibilities for action, make considered decisions about which possibility to follow and to perform the chosen action" (Department of Education, Republic of South Africa, 2000, p. 4). The problem was that these competences were expressed in terms of perceivable behaviours to be followed, and so teaching became a set of behaviours divorced from the knowledge base of teaching and a rational (but not visible) process of making appropriate judgements. This resulted in teaching often being viewed similarly to the way it was pre-1994: as a set of roles to be fulfilled and techniques to be implemented.

2012 to present: CAPS and MRTEQ

By this time, there were a number of ongoing criticisms of OBE, including the allegation of it being 'behaviourist', too complex in its discourse, and criticisms of its unreasonable expectations of schools and teachers (Jansen, 1999). OBE's "dream of transparency" was being questioned (Morrow, 1999, p. 114), and its intentions were being dubbed as "instrumental" (*ibid.*, p. 122). In a response to these criticisms, Curriculum 2005 was replaced by the Curriculum and Assessment Policy Statement (CAPS) in 2012. CAPS has attempted to reclaim the authority of knowledge in South African classrooms by making more explicit "the knowledge, skills and values worth learning in South African schools" (Department of Basic Education, Republic of South Africa, 2011, p. 4).

In 2011, the MRTEQ policy document was implemented to replace the NSE, which marked a shift from teaching as the fulfilment of outcomes to teaching as a knowledge-based endeavour. It was revised in 2014, and replaced with the slightly modified MRTEQ (Department of Higher Education and Training, 2015).[14] Both MRTEQ (2011)

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[14] The revisions are articulated in the MRTEQ (2015) document as follows:
- "Some of the restrictions on the minimum and maximum number of credits at NQF Levels in the qualification descriptors have been removed.
- Alternative progression requirements to some of the qualifications at postgraduate level have been provided for.
- The option of offering professional Master's and Doctoral degrees is now possible.

and MRTEQ (2015) retain the seven roles from the NSE, "but emphasises that the roles must be interpreted as functions carried out by the collective of teachers in a specific school" (Department of Higher Education and Training, 2015, p. 9). The MRTEQ (Department of Higher Education and Training, 20152015) emphasises "*integrated and applied competence*" (*ibid.*, p. 8., emphasis in the original). In other words, the MRTEQ policy aims to "[foreground …] knowledge, reflection, connection, synthesis and research" (*ibid.*, p. 9). As such, current teacher education policy views teachers as having a more flexible knowledge base because the MRTEQ (2015) policy document only outlines the *kinds* of knowledge to be learned by pre-service teachers, but not the exact content to be learned.

The MRTEQ policy document, among other things, "*describes* the *knowledge mix* appropriate for [all] teacher qualifications" (Department of Higher Education and Training, 2015, p. 6, emphasis in the original) in South Africa. These knowledge types include:

- "*disciplinary or subject matter knowledge*" (Department of Higher Education and Training, 2015, p. 10, emphasis in the original), which is divided into the knowledge of educational theory such as the philosophy of education and educational psychology, as well the knowledge of the teaching subject that is relevant to the teaching of subjects relevant to the specialization of the pre-service teacher;
- "*general pedagogical knowledge*, [including] knowledge of learners, learning, curriculum and general instructional and assessment strategies" (*ibid.*) as well as "*specialised pedagogical content knowledge*" (*ibid.*), which is knowledge of how to transform subject- and phase-specific content into appropriate representations for diverse learners;

- The [Higher Education Qualifications Framework] (2007) also provides for a Postgraduate Certificate in Education, an alternative title for the current Advanced Diploma in Teaching which caps a first degree or national diploma.
- In addition, further guidance is provided on the naming of qualifications, particularly on the use of second qualifiers" (MRTEQ, 2015, p. 5).

- "learning in and from practice" Department of Higher Education and Training, 2015, p. 10), which is seen as the "study of practice" (*ibid.*) component, while learning in practice is the practicum aspect of the qualification;[15]

- "*fundamental learning*" (*ibid.*, emphasis in the original), which is the learning of basic, essential skills and knowledges such as ICT competence, the ability to communicate conversationally in a second South African language, and the acquisition of academic literacy (*ibid.*, p. 11); and

- "*situational learning*" *(ibid.*, p. 11), which is "the knowledge of the varied learning *situations, contexts and environments* of education [...] as well as [...] prevailing *policy, political and organisational contexts*" (Department of Higher Education and Training, 2015, p. 11, emphasis in the original).

In addition, the MRTEQ clearly outlines eleven "Basic Competences of a Beginner Teacher" (Appendix C of MRTEQ, Department of Higher Education and Training, 2015, p. 62).[16] These competences are to be fulfilled by *all* beginning teachers, irrespective of the ITE programme that they studied. They arise from the knowledge base that beginning teachers are expected to acquire, namely that these teachers "have a sound subject *knowledge*", "*know* how to teach their subject(s)", "*know* who their learners are and how they learn", and "be *knowledgeable* about the school curriculum", as well as "able to reflect critically, in theoretically informed ways [...] to improve [their practice] and adapt it to evolving circumstances" (Department of Higher Education and Training, 2015, p. 62, emphasis added).

What MRTEQ (2015) doesn't articulate, but nevertheless expects of beginning teachers, is the capacity for pedagogical reasoning and judgement which, this research argues, enables them to apply their learning and knowledge in different contexts. While the document does specify that its focus is on "professional educators and teachers for the schooling system" (Department of Higher Education and Training, 2015, p. 7), the policy document seems to say little about the development of pedagogical reasoning and judgement of teachers during their initial teacher

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[15] See the literature review of this thesis for a discussion on knowledge in and for practice.
[16] See Appendix A for a copy of this page of the MRTEQ document.

education. It does however attempt to specify the knowledge bases on which teacher judgement rests. The policy envisions beginning teachers who are able to "apply their learning as beginner teachers in schools in varying contexts" (*ibid.*, p. 20). At face-value, teachers are still seen as *implementers* of research and rules when they teach: an 'applied science' conception of teaching (Morrow, 1996; Shulman, 1987a)[17]. Furthermore, in a somewhat outcomes-based fashion, pre-service teachers are to be educated towards a set of competences (Appendix C of MRTEQ, Department of Higher Education and Training, 2015), which are to be displayed when they qualify. What we have, then, is a seemingly confused ITE policy: it asserts that teaching is a knowledge-based profession but does not acknowledge the importance of pedagogical reasoning and judgement as the 'bridge' that enables the application of knowledge in a context. If pedagogical reasoning is not an explicitly mandated competence of beginning teachers, investigation is required as to how these teachers are reasoning in order to make judgements as professionals.

2.2 Organisation of the BEd, PGCE and learnership programmes

Recall an important problem that is central to this research, which is that all beginning teachers, irrespective of their ITE route, are expected to display the same beginning competences (Department of Higher Education and Training, 2015). This section provides the context of this problem by giving a brief description and comparison of each of the three routes of interest to this study, as well as an analysis of the perceived implications in the different sequencing and pacing of each route. It is important to note that the learnership programme is an alternative manner of completing a BEd or PGCE. If we compare the percentages of the knowledge mix for the BEd and PGCE numerically as per Table 2.2-1, the difference becomes clear:

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[17] See the Literature Review for an elaboration on this conception of teaching.

Table 2.2-1: Comparison of credits for BEd and PGCE (in percentages)

Knowledge	BEd (480 credits)	PGCE (120 credits)
Disciplinary learning		53,3%
Subject focused	*Part of 50%*	*26,6%*
Educationally focused	*Part of 40%*	*26,6%*
Pedagogical learning		40%
Subject specific PCK	*Part of 50%*	*33,3%*
General pedagogical learning	*Part of 40%*	*6,7%*
Practical learning	20 – 32 weeks	6,7% formal; 8 – 12 weeks practical
Fundamental learning	Part of 40% - max 15%	If necessary
Situational learning	*Part of 40%*	6,7%

Both the BEd and the PGCE aim for pre-service teachers to develop the capacity to draw on theoretical knowledge to provide learners with access to powerful knowledge (Rusznyak, 2015). But this emphasis on educational theory is criticised for being "too removed from the contexts of practice to be helpful in guiding teaching" (*ibid.*, p. 21), while others claim that it provides pre-service teachers with important insights to guide their pedagogical reasoning and judgements (Hugo, 2013, Winch, 2012).

Each of these routes to qualifying as a teacher has potential benefits and limitations. The PGCE, in requiring the pre-service teachers to have a pure undergraduate degree, hosts students who have had the potential opportunity to develop subject expertise. The BEd, on the other hand, is a more integrated model of teacher education and so the subject knowledge is taught to a level which is appropriate for school-level teaching. In other words, the content is not taught in the same depth as in a purely academic degree such as a Bachelor of Science, but it *is* taught simultaneously with relevant methodologies, so pre-service teachers simultaneously learn the subject knowledge and how to teach it. Additionally, the BEd programme has many more opportunities for practical experience for the pre-service teachers, with a cumulative twenty-four weeks of practicum. The learnership model immerses pre-service teachers in practice, but only provides one site of practice for the pre-service teacher to learn to teach in, whereas the BEd provides opportunities for pre-service

teachers to explore different sites of practice, and the PGCE provides a more limited but still varied number of sites of practice.

BEd: the learning of subject knowledge concurrent with pedagogy

The purpose of the four-year BEd degree as delineated in the MRTEQ (2015) policy is to "[provide] a well-rounded education that equips graduates with the required subject content knowledge base [...] and methodology that will enable them to demonstrate competence and responsibility [as a beginning teacher]" (Department of Higher Education and Training, 2015, p. 20). In the BEd, then, pre-service teachers often learn the content knowledge in conjunction with pedagogical knowledge (knowledge of how to teach a certain topic or subject). pre-service teachers often take the corresponding methodology course to their major or sub-major teaching subject in order to not only have *depth and breadth* of the subject (a necessary element of teacher knowledge according to Shulman 1987a), but also subject-specific PCK. A large amount of focus in the BEd is also accorded to educational theory, with psychology, sociology, philosophy and history of education, as well as inclusive education forming a core part of the curriculum.

The general knowledge mix delegated for the BEd degree includes a minimum of fifty percent focus on "developing the teaching specialization phase and/or subject(s), including subject-focused disciplinary, pedagogical and practical learning" (Department of Higher Education and Training, 2015, p. 22). Subject-focused disciplinary learning refers to both the learning of the subject-based disciplines (inculcating teaching subjects, such as mathematics). Pedagogical learning refers to the learning of teaching methodologies, including subject- and phase-specific PCK. Practical learning refers to learning which occurs through lesson observations, case studies and teaching experience.

Forty percent of the focus in the BEd is on "educationally focused disciplinary learning (foundations of education), general pedagogical learning, fundamental learning and situational learning" (*ibid.*). Educationally focused disciplinary learning concentrates

on the disciplines of education, such as the psychology of education. General pedagogical learning refers to general pedagogical techniques and should account for about an eighth of the total knowledge mix. Fundamental learning refers to learning of information and communications technology skills, a second official South African language, and academic literacy. Situational learning refers to learning about different teaching contexts, which may occur through formal coursework or in-context experiences. Importantly, pre-service teachers need to learn manners of coping with the challenges of diverse contexts.

A tenth of the credit allocation goes to the addressing of individual pre-service teachers' needs, which may be decided on by the institution concerned. Another fifteen percent of the credits may be allocated to fundamental learning, and pre-service teachers with prior learning in a fundamental area may transfer their prior credits. Finally, the policy prescribes a minimum of twenty and a maximum of thirty-two weeks of supervised, assessed practical engagement with the classroom over the four-year duration of the degree. It is important to note here that the document explicitly states that pre-service teachers who "are employed as unqualified or under-qualified teachers" (*ibid.*, p. 23) still need to comply with the regulations set out in the MRTEQ (Department of Higher Education and Training, 2015) document pertaining to practical teaching.

PGCE: the learning of subject knowledge before pedagogy
The pre-service teachers engaging in a PGCE as their initial teacher education qualification have necessarily completed a bachelor's degree (or "approved diploma" (Department of Higher Education and Training, 2015, p. 26), and so its purpose is to allow "entry-level initial professional preparation for undergraduate degree or diploma holders who wish to develop focused knowledge and skills as classroom teachers in a chosen phase(s) and/or subject(s)." (*ibid.*). In order to be accepted into the qualification, candidates are required to have a prior qualification, which it is assumed will be an "appropriate diploma or degree [which] includes sufficient disciplinary learning in appropriate academic fields" (*ibid.*, p. 28). The focus of the programme, like

the BEd, is on disciplinary knowledge (education- and subject-specific), but a much bigger focus rests on the development of subject-specific PCK.

What the policy does not account for is the fact that many students who obtain undergraduate academic degrees and diplomas (for example, a Bachelor of Science or a Bachelor of Arts) often focus on one very definite and narrow area of study. An issue arises for example when a student who has a Bachelor of Arts in English Literature comes to do his or her PGCE in English teaching: he or she may be highly proficient in the teaching of set work books and poetry to learners, but is not automatically proficient to teach and assess language (grammar, and so on). Thus, there are potential gaps in the content knowledge of these graduates. They may have the depth of knowledge required to teach, but their breadth of knowledge comes into question, which Shulman would claim is problematic, because "the teacher must have not only depth of understanding with respect to the particular subjects taught, but also a broad liberal education that serves as a framework for old learning and as a facilitator for new understanding" (Shulman, 1987a, p. 229).

The PGCE qualification has a similar knowledge mix to the BEd, but very different allocations. It assumes that the pre-service teachers have covered the subject content knowledge that they need to teach in their undergraduate degree. Usually students opt to teach a subject that correlates with the content of their bachelor's degree (so, for example, a student who did a Bachelor of Commerce would choose to do a PGCE specialising in the teaching of Accounting or Business Studies). About a quarter of the credits are devoted to educational disciplinary learning, and another quarter is allocated to the improvement of subject knowledge, if necessary. Forty percent of the credits are dedicated to pedagogical learning, with one-third of the total being allocated to subject-specific methodology, and just over five percent to general pedagogical learning. A minimum of eight and a maximum of twelve weeks of supervised and assessed practical teaching is required during the year-long duration of the qualification. Situational learning is allocated just over five percent of the attention in the knowledge mix, and fundamental learning is only included in the mix if the initial

assessment at the beginning of the qualification indicated that the pre-service teacher was not fully competent in a fundamental area.

Learnership: learning to teach in situ

As has been said before, a pre-service teacher undertaking a learnership is studying either a BEd or PGCE on a part-time basis, but spends their day observing and teaching in a real classroom. In *theory*, then, they receive the same knowledge mix as a pre-service teacher who is pursuing their ITE prior to practice. However, they are immersed in the site of practice much more than a pre-service teacher pursuing their ITE qualification through formal channels because the emphasis of the learnership model is "workplace learning" (Davies & Farquharson, 2004, p. 183). One can then assume that pre-service teachers who are engaged in a learnership programme are exposed much more to the 'real life' of teaching, where the processes of teaching are foregrounded.[18] pre-service teachers are thus in a much stronger position to develop what Rusznyak (2015) calls "personal practical knowledge" (p. 16), which is practical knowledge of teaching that is developed through personal interaction in the classroom context. Rusznyak (2015) claims that the emphasis on personal practical knowledge, in tending towards "contextual coherence", draws on educational theory "in a contingent manner in service of concerns that arise in practice" (p. 19). This 'cherry picking' of educational theory, she warns, "is unlikely to provide [pre-service teachers] with the conceptual tools to respond in theoretically-informed ways to limitations and structural constraints associated with prevalent practices" (*ibid.*).

There are some documented advantages of this so-called 'alternative' route, such as the cutting down of seemingly "excessive and unnecessarily burdensome" (Constantine, Player, Silva, Hallgren, Grider, Deke & Warner, 2009, p. xv) formal education. Pre-service teachers engaging in learnerships can also help qualified teachers to cope with large classes by acting as teaching assistants and relieving them of certain teaching tasks. pre-service teachers themselves learn more about the realities of the classroom, but, since they are usually assigned to one school for their

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[18] Examples would be lesson planning, delivery and observation.

learnership tenure, they are only exposed to one school context. Furthermore, results of empirical studies have shown that there are limitations to pre-service teachers teaching in a full-time capacity without formal ITE qualifications (Darling-Hammond, Holtzman, Gatlin, & Heilig, 2005). Darling-Hammond and her colleagues (2005) found that "teachers' abilities to support [learner] achievement appear to depend […] substantially on the level of preparation these teachers have had" (p. 20).

The claim by the MRTEQ (Department of Higher Education and Training, 2015) that pre-service teachers from these three different routes will be in a position to display the same competences by the time they qualify seems unlikely. This analysis has shown the different sequencing and pacing of the BEd and PGCE programmes, as well as the differences in the recontextualising principles as outlined by Rusznyak (2015).

2.3 Alternative pathways to professional teacher qualifications

In an effort to address teacher shortages in South Africa, a number of alternative pathways to becoming a qualified teacher have been proposed and implemented. One of the most prominent alternative pathways is the TEACH South Africa model of pre-service teacher preparation. According to the TEACH South Africa website, candidates are *encouraged* to complete a PGCE while placed in schools by the organisation. The TEACH South Africa model first recruits "High performing graduates from leading South African Universities." (TEACH South Africa, 2016) Then, they are placed in the TEACH South Africa 'Training Academy,' for four weeks where they "are provided with an intensive, accelerated course on teaching techniques," and then have a two-week "formal induction" (*ibid.*). It was found, in a study by JET Educational Services, that this planned timeline was "reduced to only two of the four weeks training and the induction was reduced to a school visit in the first two weeks by an external mentor" (Hofmeyr, 2016, p. 68).

A study on alternative pathways to teacher education promotes the take-up of alternative pathways to teacher education to address critical issues in South African

schools. Hofmeyr (2016) argues that alternative pathways to teacher education should be considered as effective as 'traditional' pathways of ITE, as the quality of teachers produced by alternative pathways is equal to or even better than that of traditional pathways. Citing evidence of alternatively-qualified teacher cohorts having better retention rates, higher throughput rates, and "[performing] as well or better than those trained in the traditional three-year preservice programme" (*ibid.*, p. 74), Hofmeyr makes the argument that both traditional and alternative pathways should play a role in the education of teachers, and should be seen as equally effective. She goes on to argue that the value and relative merits of various pathways to teaching should not be a concern, and that all pathways are important, regardless of their structure and emphasis. Calling the debate between the benefits and pitfalls of traditional and alternative pathways "fruitless" (*ibid.*, p. 75), Hofmeyr says:

> [w]hat matters most in teacher preparation is how to prepare effective teachers. For the sake of the neediest learners, the real fight in all ITE should be about the best way to assess and prepare any given candidate so that all new teachers can be equally successful on their first day on the job (*ibid.*, p. 77)

As such, in promoting the role of alternative pathways to teacher education, Hofmeyr makes the argument that the social justice imperative to produce enough teachers to teach South Africa's learners trumps concern of *how* teachers are educated.

Given the argument earlier in the chapter that it is unlikely that the 'traditional' pathways to teacher education will result in teachers who display the same set of competences, I would suggest that it is even less likely that traditional and alternative pathways to teacher education candidates will display the same competences. The next chapter looks at major debates in ITE around who teachers are, what they should know, and how they learn it, thereby contextualising the study further.

CHAPTER 3: LITERATURE REVIEW

3.1 Introduction

So far, this thesis has argued that ITE policy in South Africa makes the claim that all ITE graduates should display the same set of competences, despite the differences in the selection and length, sequencing, and pacing of their professional teaching qualifications. The line of argument now moves in the direction of locating the study within existing literature. In this chapter, I make four conceptual moves: First, I draw on Shulman's (1987a) Model of Pedagogical Reasoning and Action to argue the central role of pedagogical reasoning in the professional practice of teaching. I then outline the goals of ITE to develop in pre-service teachers a capacity for pedagogical reasoning and professional judgement. I argue that these goals of ITE require the development of a cultivated and/or trained gaze on teaching practice (Maton, 2014b). Second, in Sections 3.3 and 3.4 the chapter will discuss the conception of teachers as knowers. Here, issues such as the pre-existing knowledge that ITE pre-service teachers bring to bear on their studies, as well as ideas around who can be a teacher and what knowledge is required to teach is discussed. I argue that teaching is a contested field and that there are 'constellation clashes' around who teachers as knowers are and should be, and around what knowledge they need to hold in order to teach. Third, I argue that there have been attempts to delineate an explicit knowledge base for teaching by Shulman (1987a), when he developed a typology of teacher knowledge including the idea of PCK. However, as a category of knowledge PCK remains slippery and difficult to pin down due to its weak internal grammar. As such, I claim that because PCK is difficult to define, pedagogical reasoning is difficult to study and teach despite being an important category of knowledge to be taught to pre-service teachers. Fourth, I posit that Legitimation Code Theory (LCT) can offer a mediating language for the study of pedagogical reasoning in this research project, thereby defining the literature gap of the study.

3.2 Pedagogical reasoning and ITE programmes' aim: Cultivating a view of teaching

An assumption of this research is that teaching is not a technical endeavour but requires the capacity to reason pedagogically about teaching and learning that has taken, is taking, or will take place. Lee Shulman, in his seminal work that reclaimed the role of content knowledge in professional teaching (1987a), presented a model that placed the concept of 'pedagogical reasoning' at the heart of all that the teacher does in his or her professional practice. He draws on Fenstermacher's work (1986; 1978) which argued that "good teaching … must rest on a foundation of adequately grounded premises" (Shulman, 1987a, p. 13). Shulman presents a model of pedagogical reasoning and action which maps 'phases' of teaching, describing the role of pedagogical reasoning in each phase. The five phases that Shulman identifies are:

1. Comprehension
2. Transformation
3. Instruction
4. Evaluation
5. Reflection (*ibid.*, p. 14)

It is important to note that Shulman did not present these five stages as linear. He argues that stages can work iteratively as one thinks and reasons about what and why one is doing what one is doing. As I speak about the stages, and the pedagogical reasoning employed by each, it must be remembered that the reasoning is not necessarily done in a linear fashion.

During the *comprehension* phase of teaching, the teacher needs to understand the knowledge that he or she is going to be teaching. But, he argues, simply understanding the knowledge does not make a teacher, a teacher (as opposed to any other profession). Shulman makes the very clear statement that

> the key to distinguishing the knowledge base of teaching lies at the intersection of content and pedagogy, in the capacity of a teacher to transform the content knowledge he or she possesses into forms that are pedagogically powerful and

yet adaptive to the variations in ability and background presented by the [learners] (*ibid.*, p. 15).

To put it simply, what Shulman describes above is pedagogical reasoning. It is this *transformation*, which is the second phase that Shulman describes, that requires the teacher to enact his or her pedagogical reasoning in order to transform the content knowledge into a form that is accessible to the learners of the content knowledge. Shulman argues that during the transformation phase a teacher needs to a) prepare the learning materials, including a "critical interpretation" (1987a, p. 16) of the materials on the part of the teacher, requiring the employ of pedagogical reasoning (e.g. does this match the curriculum demands? Is this content suitable for the learners?); b) select suitable representations of the knowledge, employing pedagogical reasoning to consider which representations will make the knowledge more or less accessible to the learners, and which representations foreground or background certain features of the content knowledge; c) select teaching strategies, once again employing pedagogical reasoning to reason which strategy or strategies would be most suitable to teach *this content* to *these learners*; d) adapt the representations of the knowledge to suit the general needs of the learners in their classroom, requiring pedagogical reasoning that draws upon the teacher's knowledge of the educational needs and characteristics of the class as a whole (e.g. is this a remedial class? Do these learners tend to get through the work more quickly than other classes?); and e) tailor the representations to the specific needs of specific learners in the classroom, once again, employing pedagogical reasoning (e.g. Daisy is colour-blind. Perhaps I should use shapes instead of colours to depict xyz on my chart). Throughout the five stages of transformation, Shulman shows how the teacher goes through a process of scrutinising the content to be learned in terms of its conceptual characteristics in order to decide how best to go about "structuring and segmenting the materials into forms better adapted to the teacher's understanding and, in prospect, more suitable for teaching" (*ibid.*, p. 16).

Once the content knowledge has been transformed into a more accessible form for the learners, the teacher moves into the *instruction* phase of the lesson. During instruction, the teacher enacts the pedagogical reasoning that has gone into the first

two phases of the lesson. He or she still uses pedagogical reasoning in order to make split-second decisions in the classroom: should I pursue this learner's point? Will it derail my lesson? I'm running out of time – should I leave out this example?

During and after the contact learning time of the lesson, comes the *evaluation* phase of teaching and learning. During the lesson, the teacher needs to constantly check and make judgements as to whether what he or she is teaching is being understood by the learners. He or she needs to make reasoned choices as to how to evaluate understanding, and whether their evaluations are trustworthy and accurate or not. After the lesson, evaluation takes the form of informal activities, assessment tasks, and so on. The conclusions about the teaching and learning that the teacher draws from the processes of evaluation give rise to *reflection*, the fifth phase of teaching. Once again, pedagogical reasoning takes centre stage, as the teacher has to think carefully about the lesson, bringing "particular kinds of analytic knowledge … to bear on one's work" (*ibid.*, p. 19). I have described Shulman's model as a means of arguing for the central and very important role that pedagogical reasoning plays in the work of teachers: the assumption that teaching requires the employ of pedagogical reasoning is grounded in this model, and pedagogical reasoning as a concept and part of teaching needs to be taken seriously.

Given the critical role that pedagogical reasoning plays in the acts of teaching and learning, it is only natural to assume that pre-service teachers need to develop this capacity for pedagogical reasoning during their ITE years. Pedagogical reasoning is therefore a fundamental goal of ITE (Morrow, 1996). Although articulated over two decades ago, Morrow's seminal work was and still is highly influential in South African ITE. I therefore draw upon his four goals of ITE here to cement the argument that the development of the capacity for pedagogical reasoning is a goal of ITE. Morrow's four goals of ITE are given:

1. Knowing what the nature of teaching is. Morrow (1996) maintains that one of the most important goals of teacher education is to provide pre-service teachers with a space in which to "... develop a strong and properly grounded conception of teaching and an effective grasp of the definitive ideals of the professional

practice of organising systematic learning" (p. 84). This goal seeks to clarify in ITE education candidates' minds what exactly teaching is, and how to go about it in an informed manner. Additionally, this goal intends to teach pre-service teachers that teaching is not random, and that it requires careful thought as to what will enable learners to learn systematically. The discussions that follow will not focus on Morrow's first goal of teacher education, and for this reason, I have fleshed out what is meant by the first goal here.

2. Pre-service teachers should understand their content as well as how to teach it (*ibid.*).

3. Pre-service teachers need to develop a comprehensive knowledge of the contexts in which pre-service teachers teach (*ibid.*).

4. The ability to organise systematic learning, using their professional judgement and decision-making (*ibid.*). It is this fourth goal that is the focus of this study, which seeks to understand the knowledge bases that differently qualified pre-service teachers draw on to legitimate pedagogical reasoning and judgements in situ.

Given Morrow's goals of ITE, the question becomes *how* pre-service teachers learn to teach. Most ITE programmes in South Africa do not have a personality test or natural aptitude requirement for entry into the programme; access is generally granted based on academic success at school, or age exemption. Therefore, anyone with the prerequisite school-leaving scores can access ITE programmes but it is important to note that the ability to reason pedagogically is not intuitive nor is it naturally occurring. It has to be developed, or cultivated, over time. As South African ITE policy stipulates, pre-service teachers must spend significant amounts of time engaging in formal study of educational theory and principles, as well as significant amounts of time in a site of practice under the tutelage of an experienced teacher (Department of Higher Education and Training, 2015). It is this engagement with educational theory that could potentially, and in communities of practice that should contribute to the development of a cultivated gaze on teaching as a practice. It is this cultivated gaze that informs their "situational appreciation" (Morrow, 1996, p. 80) to inform pedagogical reasoning and professional judgement in situ. Situational appreciation refers to the teacher's ability to distinguish salient cues in the teaching and learning environment that require action. Situational appreciation, I would argue, is a very important aspect of

pedagogical reasoning because without the ability to pick out what is important to consider when planning, teaching, or evaluating a lesson, the teacher is unable to make decisions that are pertinent to the specific needs of the classroom.

If pre-service teachers need to develop the capacity to reason pedagogically during their ITE years, where do they learn this? Shay (2013) argues that particular kinds of judgement are enabled by formal complex knowledge used in contextually-grounded ways learning in vocational curricula. She argues that within a vocational curriculum (which is how I would classify ITE), "[t]heory is selected not for its own sake but for its relevance to understanding … practice. Theory is marshalled to make sense of practice" (p. 575). While this is a useful point in terms of arguing that ITE professional curricula are necessary for the development of pedagogical reasoning capacity, it assumes that theory is the only 'source of intel' that informs pedagogical reasoning in situ. Teachers require the development of a specialised way of thinking about what they do in their practice. LCT provides a powerful set of conceptual and analytic tools for understanding specialised ways of thinking associated with knowledge-based practices.

3.3 Teachers as knowers

As much as teachers need knowledge for their professional practice, they also need to develop more specialist ways of using that knowledge to inform decisions. Maton's (2007) work stresses that a knowledge-based practice is always oriented towards something and by someone. The notion of typifying teaching as requiring 'knowledge' and teachers as being 'knowers' is not as straightforward as it seems; the 'everyday' nature of the words 'knowledge' and 'knowers' is deceptive. I use these terms very deliberately here, and I draw on Maton's (2014c) use of the words. 'Knowledge' is what teachers learn and is given by either horizontal or hierarchical knowledge structures (Bernstein, 2000). This chapter will consider competing views of what knowledge counts for ITE, but first considers its 'knower structures' (Maton, 2014c). It is important to understand the knower structures underlying teaching in order to begin to understand the role of pedagogical reasoning in teaching as a practice. Knower structures are more concerned with what the ideal 'knower' of teaching looks like, and

less with what they should know and be able to do. It deals more with the dispositions, personal attributes, character and so forth (Maton, 2014c) of the ideal knower, as well as the particular ways of thinking required to be a knower. Part of learning to teach is the development of what Maton (2014b) calls a "cultivated gaze" (p. 185) and a "trained gaze" (p. 186) on practice. A cultivated gaze is a particular way of knowing and is developed through "participation in 'communities of practice' (Lave & Wenger, 1991); sustained exposure to exemplary models … and prolonged apprenticeship under an acknowledged master" (Maton, 2014b, p. 186). A trained gaze is gaze which "emphasises the possession of specialist knowledge and skills" (*ibid*.). Furthermore, a practice that awards legitimacy based on the development of a cultivated gaze "weakly bound and control legitimate categories of knower but strongly bound and control legitimate interactions with significant others" (*ibid*, pp. 186-186). This means that anyone can learn to become a knower, or in this case, a teacher, but the claim to legitimately being a teacher comes from the interactions that the actor has with particular theories, experiences, and people.

The studies that I quote to build the argument that there is contestation regarding the ideal knower in teaching do not explicitly address the notion of 'knower' that is purported in the studies themselves, but I have used the idea of knower to interpret the studies in order to build the proceeding argument. The argument follows that teachers develop status of 'knower' through their own experiences of teaching before they enter ITE programmes. It then makes the conceptual move to arguing that there is no consensus regarding the dispositions that lend legitimacy to the status of 'knower' in teaching practice, presenting the major debate between knowledge-foregrounded and knowledge-backgrounded bases of legitimacy. The argument also presents the lack of consensus within the knowledge-foregrounded camp, arguing that although authors agree that teachers become knowers through the acquisition of requisite knowledge, they do not agree on the nature of that knowledge. As such, the four topics or questions that coordinate this section of the Literature Review are 'Prior experience to develop a knower', 'Who can be a knower?', 'What should the knower know?', and the knowledge gap that this research aims to address.

Prior experiences to develop a knower

According to Maton (2014c), legitimacy as a knower is given partly by the past experiences of actors which help to cultivate their gaze (Maton, 2014b). Within teaching, it is particularly prevalent that the past experiences of pre-service teachers are highly influential in their development as teachers, and therefore by extension, as knowers. Teaching is the only profession into which one enters the undergraduate level with at least twelve years' experience. Pre-service teachers begin their ITE programmes with a preconceived idea of what being a teacher means. Ideas about teaching, according to Dan Lortie (1975), are constructed during pre-service teachers' 'apprenticeships of observation': the time when they were learners[19] themselves and watched their teachers. Their observations of their teachers form the basis for their ideas about teaching, but pedagogical reasoning and judgement are not easily visible processes, especially to novices who assume that the outer routines of the practice constitute the essence of the practice itself. The view that teaching is merely a set of routines reflects an 'impoverished' (Morrow, 1992) view of teaching (Pugach, 2006).

The initial conceptions of teaching developed during the apprenticeship of observation can be dangerous if left unexamined and unchallenged (Hammerness, et al., 2005; Joram & Gabriele, 1998; Kagan, 1992; Weinstein, 1988; Shulman, 1987b; Lortie, 1975). These conceptions of teaching often result in pre-service teachers underestimating the complexity of mediating knowledge to learners, and can be enduring and highly influential on pre-service teachers' developing practice (Hammerness, et al., 2005) and knowledge of teaching. Empirical evidence suggests that pre-service teachers' conceptions of teaching have been seen to be influenced by their age, gender and schooling background (Langsford, 2012; 2013). Conceptions of teaching as straightforward application of sets of protocols may interfere with their acquisition of formal teacher knowledge, as they may disregard those aspects of teaching that seem irrelevant because they are not easily visible, a phenomenon which Shulman (1987b) calls 'pedagogical immunity'. Without access to the internal logic of a practice, prospective teachers easily revert to teaching in the ways in which they themselves were taught. One of the most important functions of ITE, then, is to

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[19] In South Africa, the preferred term for a school-level scholar is *learner*, and for a tertiary-level scholar is *student*.

explicitly and actively expose and help pre-service teachers to interrogate their initial conceptions and assumptions about teaching. This active examination and re-examination of intitial conceptions must be done to ensure that pre-service teachers "develop a strong and properly grounded conception of teaching and an effective grasp of the definitive ideals of the professional practice of organising systematic learning" (Morrow, 1996, p. 84). pre-service teachers, through their examination and re-examination of their initial conceptions of teaching, need to acknowledge the need for and develop the capacity for pedagogical reasoning.

Compounding the issue of pre-service teachers underestimating the complexity of teaching and the invisible cognitive work that teachers do, is the fact that their 'apprenticeships' have all been at different kinds of schools and may have been interpreted differently by individuals. In a small-scale research project, Langsford (2013) found that the initial conceptions of pre-service teachers vary from participant to participant, while Langsford (2012) found that the kind of school that pre-service teachers attended (rural, suburban, inner-city, etc.) had an effect on their initial conceptions of teaching. This seems to indicate that their conceptions of teaching are idiosyncratic in nature: what is true for one is not true for all. Are all knowers, then, equal from the outset? I extend this argument by presenting debates around what dispositions are legitimised to accord the status of knower to teachers.

Who can be a knower?
The problem with professional teacher education, however, is that pedagogical reasoning and judgement cannot be 'taught' in the way that teaching procedures or trigonometry can. A capacity for pedagogical reasoning must be *developed* in response to a set of ethical principles, understanding of the purposes of the practice, understanding of the processes of teaching and learning as well as in relation to the specific contextual demands of the classroom (Shulman, 1999). ITE programmes can, at best, set up the foundations of knowledge upon which reasoned rational judgements can be made and justified, but, it is ultimately up to the pre-service teachers themselves to reason about their decisions, and act in pedagogically responsive ways in their particular classrooms and contextual realities. The reason why pedagogical

reasoning and judgement cannot be taught is because these are context- and topic-specific deliberations. They are rationales and decisions that are to be made based on the teachers' knowledge base, which provides the criteria for the decisions. In addition to highlighting the need for and importance of pedagogical reasoning, ITE programmes can teach many of the different knowledge bases on which pre-service teachers can ground their pedagogical reasoning. These knowledges usually fall into one of the following categories: "general education theory; pedagogical/methods study; disciplinary/subject matter studies; and school-based experience" (Reeves & Robinson, 2014, p. 237). Additionally, ITE programmes provide pre-service teachers with opportunities to develop these abilities. In a South African context, the development of a 'rationale for lesson design' required pre-service teachers to think systematically about the complexities of lesson planning repeatedly over many years and in relation to different contexts and different lesson topics. The guidelines that were presented to pre-service teachers aimed to "[present] decision-making in lesson planning as a complex interplay between the components of [professional teacher knowledge], but [enable pre-service] teachers to work systematically through that complexity" (Rusznyak & Walton, 2011, p. 280). While this approach to lesson preparation embodied the slow, long-term nature of cultivating a gaze on practice (Maton, 2014b), it could not teach pre-service teachers to reason or make professional judgements. It only provides scaffolding for pre-service teachers to draw on their knowledge bases to develop their pedagogical reasoning and judgement in situ, and to get feedback from a 'more experienced other' who can interrogate the appropriateness (and legitimacy) of their basis for judgement. As Maton (2016, p. 9) argues, concepts "do nothing by themselves; their potential for knowledge-building is realized by actors". It is the responsibility of teacher educators to design opportunities that require pre-service teachers to undertake this knowledge-building work as they learn to teach.

3.4 A constellation clash: Teaching as an individualised personal pursuit vs. teaching as a knowledge-based professional practice

Different academics have different views on what it takes to become a teacher. What follows is a word-story mapping the clash between competing views of how pre-service

teachers become knowers, developing the argument for the existence of a 'constellation clash' (Maton, 2014d) between competing views of what legitimates a teacher as a knower. A constellation is a group of "ideas, practices, beliefs and attributes – or, for brevity, 'stances'" (p. 152). In the case of the debate around what counts to legitimate a teacher as a knower, there are competing constellations of ideas, with each constellation having its own set of sub-ideas that are networked into 'clusters' of ideas (*ibid.*). I will consider two (of many) important competing constellations. The result of this constellation clash is that there are competing views of how teachers should be educated during ITE programmes. In other words, what it means to be a knower (or what legitimates the status) has bearing on how one cultivates a legitimate gaze of teaching as a practice. There exists a clash between two overarching schools of thought as to what teaching itself is. Teaching is seen by some as an individualised personal pursuit (e.g. Korthagen, 2017; Schön, 1983a) where legitimacy as a knower is awarded based on the personal traits of the teacher, and where knowledge is developed through a process of self-reflection on practice and accumulated experiences. Others see teaching as a knowledge-based professional practice (e.g. Winch, 2012; Rusznyak, 2008; Hirst, in Hirst & Carr, 2005; Shulman, 1987a) where legitimacy is awarded based on what the teacher knows and can do, and knowledge is developed through formal study and recontextualised into the classroom. I will present the constellation clash in sections. Table 3.4-1 gives a simple overview of the structure of the argument:

Table 3.4-1: Constellation clash - teaching as an individualised pursuit vs. teaching as a knowledge-based professional practice

Teaching as …	Individualised pursuit	Knowledge-based professional practice		
What does it mean to teach?	Art	Knowledge for judgment in context		Applied science
Who can teach?	Right kind of person	Anyone		
What do they need to know and where do they learn it?	Reflective practice	Theoretical understanding; pedagogical reasoning	Practical understanding; pedagogical reasoning	Normative rules and procedures
	Reflection: Knowledge *in* practice	Formally: Knowledge *for* practice		

What does it mean to teach? Teaching as an art vs. teaching as requiring knowledge for judgement in context vs. teaching as an applied science

Within the ambit of teaching as an individualised personal pursuit, is the conception of teaching as an art. Those who support this idea of teaching as being an "art" (Hoban, 2005, p. 9), such as Carr (in Hirst & Carr, 2005), claim that teaching "is not theoretically justified propositional knowledge but reflectively acquired self-knowledge" (*ibid.*, p. 625). Arguments for teaching being an 'art' include the belief that theory does not inform teachers' practice is because of "its assumption that teacher behaviour is guided by teacher thinking" (Korthagen, 2017, p. 389), and that teaching cannot be guided by pedagogical reasoning because the teacher cannot be aware of everything going on in the classroom at the same time (*ibid.*). Korthagen (2017) holds the view that "a complex mix of cognitive, affective and motivational sources" (*ibid.*, p. 390) shapes the teacher's behaviour in the classroom. The role of pedagogical reasoning in order to engage in decision-making and judgement is downplayed in favour of a reflection-based pool of knowledge, deriving from the accumulation of experience and learning through trial and error methods, from which to draw when thinking about teaching.

Within the ambit of teaching as a practice are the conceptions of teaching as a knowledge-based profession and teaching as an applied science. When teaching is seen as a knowledge-based profession, the role of pedagogical reasoning is foregrounded to enable teachers to make judgements in unfamiliar contexts (Shulman, 1998). Teaching is seen as "… the development of a repertoire of techniques [and] includes personal judgements about when and how strategies should be used" (Hoban, 2005, p. 8). Proponents of the conception of teaching as a profession see the crucial role of theoretical understanding in grounding the thinking and judgements of teachers in situ. Unlike the art conception of teaching, the professional conception of teaching argues that teacher behaviour *is* guided by teacher thinking, and that it is the development of PCK that enables this teacher thinking which sits at the heart of professional teacher practice (Shulman, 1987a).

If teaching is understood as an applied science, the role of knowledge is strongly foregrounded, but the need for pedagogical reasoning and judgement is cut down as the knowledge that is used to teach takes the form of normative rules and procedures. Hoban (2005) uses the term "labour" to describe this conception of teaching, saying, "… teaching is [seen as] a set of goals, lesson plans, and skills that others have designed and the role of the teacher is to implement them" (p. 7). I would add that the view that teaching is a set of context-free, practical rules, can also be seen as a conception of teaching as a set of teaching algorithms. My discussion now moves to who can become a legitimate knower, or who can learn to teach, according to each of the conceptions of teaching.

Who can teach? The role of personal disposition
When teaching is seen as an individualised and personalised endeavour, with an art conception of teaching, the personal traits of the teacher are foregrounded, and what he or she knows and can do is backgrounded. It's an old assumption that certain people are better teachers than others because of their personality attributes; I myself have been told that I would be a good teacher because I "am good with kids," or I "just get teaching," or I "can see things from a child's perspective." This belief that having what it takes to become a teacher is based on personal attributes downplays the role

of knowledge within a practice. In this case, the use of the term "disposition" refers to "the tendency of something to act in a certain manner under given circumstances" (Mirriam-Webster Dictionary, 2019). The specific disposition that needs to be held in order to teach, according to proponents of this view, is the tendency and inclination to reflect on practice in order to develop a repertoire of teaching strategies and ideas. In Korthagen's (2017) view, teacher development should focus less on the "link between practice and theory", and more on "the person of the teacher" (*ibid.*, p. 398), with claims that the most important characteristics of a good teacher are qualities such as love, fairness, honesty, kindness, sensitivity, and courage. It is this kind of personality that can legitimately be a knower, and as a knower, develops knowledge about his or her art through ongoing reflection on practice. The art conception of teaching, then, foregrounds the personal attributes of the teacher, and backgrounds the knowledge acquisition and pedagogical reasoning capabilities of the teacher.

Those who see teaching as a knowledge-based professional practice may argue that while anyone can access ITE programmes, learning to teach requires the acquisition of particular knowledge, as well as the development of specialist ways of thinking and being. Because teaching is something that can be learned and requires the development of specific cognitive processes, such as the harnessing of theoretical knowledge to make sense of a teaching and learning context, anyone can enter into ITE programmes in order to develop this cultivated gaze on practice. Although certain personality traits, such as patience and a passion for social justice, are seen as valuable within the professional conception of teaching, they are not pre-requisites for admission into the profession. The professional conception of teaching, then, foregrounds the knowledge acquisition and pedagogical reasoning capabilities of the teacher, while shaping the personal and dispositional attributes of the knower during the ITE programme.

When teaching is seen as the application of rules or procedures, anyone can learn to teach because teaching is the learning of these rules and procedures. According to this conception of teaching, as long as someone can learn the different rules and procedures, and what "compartment" they fit into (Hoban, 2005, p. 7), they are

awarded legitimacy as a knower. The applied science conception of teaching, then, foregrounds the skills and procedural abilities of the teacher, and backgrounds the personal attributes of the teacher.

What do they need to know? Knowledge in practice vs. knowledge for practice

Within the constellation clash that I am presenting, there are various smaller cluster clashes. In order to organise these clusters in as accessible a manner as possible, I will signpost shifts in the argument explicitly. In this section, I begin with the argument that the conception of teaching as an art foregrounds the knower and backgrounds the role of formalised knowledge of teaching. I present the role that reflection plays as providing knowledge *in* practice (Cochran-Smith & Lytle, 1999). I then present the critiques of reflection as the only source of teacher knowledge, arguing that it could be seen as 'knowledge-blind' (Maton, 2014f). Next, I argue that when teaching is viewed as a knowledge-based professional practice, the knowledge is foregrounded, and the knower is developed through ITE. I then introduce a sub-clash: The teaching as a profession conception foregrounds knowledge *for* practice, and may celebrate the acquisition of a theoretical understanding of teaching and pedagogical reasoning in practice, as well as a way of thinking and reasoning that is deeply contextually embedded. In contrast, the teaching as a profession conception may also celebrate the acquisition of a practical understanding of teaching and pedagogical reasoning in practice. The position is critiqued on the basis of the argument that practice cannot be understood without a theoretical lens and application within a context of enormous complexity. The third conception is that teaching as an applied science, is almost completely 'knower-blind' (*ibid.*), as it completely foregrounds the knowledge and strongly downplays the role of judgement and reasoning in the application of those rules and procedures.

Reflection provides knowledge *in* practice

I start with the argument that the conception of teaching as an art, where teaching is an individualised endeavour that has no shared communal practices foregrounds the knower and backgrounds the knowledge of teaching. I now present the role that reflection plays as providing knowledge *in* practice. I shall then present the critiques

of reflection as the only source of teacher knowledge, arguing that it could be seen as 'knowledge-blind' (Maton, 2014f). Next, I shall argue that when teaching is viewed as a knowledge-based professional practice, the knowledge is foregrounded, and the knower is developed through the ITE programme. Within the teaching as an art conception of teaching, teacher knowledge that is reflected on and drawn from practice itself, then, enables the teacher to make situationally appropriate judgements, and pedagogically responsive action to be taken. Although it is sometimes difficult to distance oneself from one's experiences, self-reflection in the classroom can be a source of powerful personal knowledge about teaching. One of the greatest advocates for professional learning arising from individual experiences alone without a theoretical knowledge base was Donald Schön (1983a). His main argument is that knowledge emerges from practice, and that as a practitioner reflects on his or her actions (or, I would add, observations), he or she "also reflects on the understandings which have been implicit in his [or her] actions, understanding which he surfaces, criticizes, restructures, and embodies in further action" (1983b). In with what Hugo (2013) calls an "emergent selection" paradigm (p. 57), ideas about teaching and learning emerge from the individual's experiences with and in the context of the classroom. Schön (1983a) claims that it is this reflection that allows for the operation of the practitioner in situations of uncertainty (*ibid.*)[20]. This is how personal knowledge of familiar patterns in the course of teaching and reflecting of the appropriateness and effectiveness of various actions in response to those patterns, becomes a source of practical knowledge. For example, if during a classroom-based practicum, a pre-service teacher teaches a lesson where learners are not engaged, and he reflects on why the learners may have been restless and decides that the activity was too basic for the learners. This realisation makes him restructure the activity for the next time that he teaches the lesson, and thus, he is learning and developing from his own teaching.

When reflection resides as the mechanism of knowledge development, as Schön and Korthagen argue, the experience of teaching becomes the source of knowledge for teachers. Wilfred Carr (in Hirst & Carr, 2005), claims that experience, as opposed to theory, has to be the source of knowledge for teachers because "the theoretical

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[20] A hallmark of the work of professionals is that they work in complex, uncertain situations (Shulman, 1998).

knowledge that is used to 'justify educational practice' is itself always an abstraction from practice and hence infected by those very features of practice" (Carr, in Hirst & Carr, 2005, p. 623). The implication of this conceptual move for ITE is that teacher knowledge is seen to be developed *in* practice (Cochran-Smith & Lytle, 1999). As Cochran-Smith and Lytle (1999) put it, "teacher learning hinges on enhancing teachers' understandings of their own actions – that is, their own assumptions, their own reasoning and decisions" (p. 267) and are learned "principally on the job" (Levine, 2006, p. 13). The implication of this for the pre-service teacher is and so needs to be learned from "the exemplary practice of experienced teachers" (Cochran-Smith & Lytle, 1999, p. 263), much like an apprentice would learn from his or her master.

When knowledge is drawn from *within* the individualised and personal experience in the field exclusively[21], the knowledge base that teachers use is often individualised, and manifests itself from the judgements, observations, and trial-and-error of ongoing teaching experiences. Each teacher constructs his or her own knowledge base from his or her own experiences, which are necessarily different due to the non-standard nature of teaching (Lampert, 2001, as paraphrased in Hammerness, et al., 2005). Knowledge *in* practice "foregrounds general pedagogical knowledge and personally acquired practical knowledge and tends towards contextual coherence" (Rusznyak, 2015, p. 19). What knowledge *in* practice upholds, then, is the importance and centrality of teachers' pedagogical reasoning in situ as guiding the development of knowledge of teaching and enabling teachers to make judgements in practice. However, this pedagogical reasoning and resulting judgement may not be regarded as truly 'professional' in nature because it is not necessarily theoretically grounded (Shalem, 2014) nor shared (MacIntyre, in MacIntyre & Dunne, 2002).

The learnership model is an example of a teacher education model that foregrounds the knowledge *in* practice conception of teaching. Although candidates are required to complete an ITE programme such as a BEd or PGCE on a part-time basis (Davies & Farquharson, 2004), they tend to spend their days observing, teaching and being

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[21] In other words, if the 'wisdom of practice' is the only knowledge base drawn on.

mentored by their supervising teachers. What sets it apart from the full-time BEd or PGCE, however, is the ratio of coursework to practice: learnerships "focus 'not on *what* is presented to people, but on the *processes* by which they learn to become competent'" (Vorwerk, 2002, as cited in Davies & Farquharson, 2004, p. 184). Learnership programmes aim to integrate theory and practice in a context and, therefore, require partnerships between institutions, culminating in a "change [in] the focus of the learning intervention from the classroom to the point of application in a 'real world' context" (Davies & Farquharson, 2004, p. 186). Interestingly, the BEd and PGCE also acknowledge the importance of practical knowledge in ITE to a certain extent. The difference here, however, is that learnership and PGCE pre-service teachers are often exposed to a single context (two at most for PGCE pre-service teachers), while the BEd pre-service teachers sometimes[22] have the chance to be immersed in several contexts over different years of study. During their practicum sessions (a mandatory facet of ITE, according to the MRTEQ), pre-service teachers are ideally exposed to the 'wisdom of practice' that Shulman (1987b) talks about when they watch their supervising teachers at work. These skills and techniques may be learned before the teacher is sent into the classroom, or alongside their time in the classroom, such as in the learnership model of initial teacher education. These skills and techniques may be learned in terms of how they relate to the 'whole' of teaching: how they contribute to the work of enabling learning (as in an apprenticeship kind of training), or they may be taught as the parts themselves, with no view of how they contribute to the overall project of teaching[23]. However, a recent study showed that in the context of a South African school, the quality of feedback provided to pre-service teachers in a learnership programme was highly variable between mentor teachers and was largely simple tips in nature (Borello, 2019).

There are critics who regard an entirely 'art' based view of teaching as reductionist. By giving such weight to reflectively acquired knowledge, the knower is foregrounded, and the conception could even be considered 'knowledge-blind' (Maton, 2014f). Pre-service teachers learning exclusively from practicing teachers may never develop "conceptual tools to analyse (and where necessary, to revise and/or deepen) their

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[22] This depends on the institution at which the pre-service teachers are studying.
[23] See Gamble's (2006) discussion on part-whole relationships.

assumptions about what constitutes effective teaching and learning" (Rusznyak, 2015, p. 20). This approach runs the risk of teaching merely perpetuating existing educational practices and reducing capacity to transform in response to changing political, social and economic demands.

Learning from experience in the field of practice is the most difficult aspect of professional development, argues Shulman (1998). Lessons learned from experience need to inform three areas: the professional's own practice, the community of professionals (transforming experiences into 'community property'), and what Shulman calls 'the academy': the formal professional education knowledge base. In this way, practice informs theory in addition to theory informing practice. During reflection, the teacher thinks critically about the lesson that he or she has taught. A hallmark of a profession, reflection is where pre-service teachers and qualified teachers "[reconstruct], [re-enact], and/or [recapture] the events, the emotions, and the accomplishments" (Shulman, 1987a, p. 241), the goal of which is to lead to a 'new comprehension' of "both of the purposes and of the subjects to be taught, and also of the [learners] and of the processes of pedagogy themselves" (*ibid.*, p. 241). Pedagogical reasoning is at play here but is being drawn on as a retrospective lens.

An exclusively emergent selection paradigm, which is what reflective practice has, means that the boundaries of what is deemed relevant and important or indeed unimportant for consideration are completely open. (Pre-service) teachers therefore have no framework with which to understand the significance or insignificance of events within their practice (Winch, 2012) or to distinguish between the material and formal elements of teaching (Morrow, 1996). When teachers draw on a knowledge base that comes from personal experiences of teaching, their pedagogical reasoning is not easily transferrable from one context to another, nor is it systematised. At best, it draws on educational ideas in a haphazard way, based on the demands of the context in which teachers find themselves (Rusznyak, 2015). While teachers may be able to engage in pedagogical reasoning to enable epistemological access for all learners for a while, they do not have access to a systematised, abstracted body of educational knowledge and principles. They are therefore less likely to be able to

distinguish between the 'formal' and 'material' elements of teaching (Morrow, 2005) when engaging in pedagogical reasoning, thereby posing a challenge when they need to navigate different circumstances under which they need to teach. It is important to note that I am not saying that they will not be able to engage in pedagogical reasoning to enable their practice: they are likely to thrive in the kind of classroom context in which they have personal experiences. I am saying that their pedagogical reasoning may be constrained because they lack a systematised way in which to think about the demands of teaching and learning. Furthermore, and very importantly, beginning teachers whose ITE is dominated by personal experiences of teaching may have a tough time in their first few years in the classroom as they're learning to be professionals and make professional judgements based on a partial and very subjective knowledge base emerging from their limited experiences (Hammerness, et al., 2005). This is because if pre-service teachers do not have shared knowledge of the criteria for what counts as good and bad practice, they cannot share teaching as a communally-owned practice, which in turn limits access to the goods of the practice of teaching (Shalem & Slonimsky, 1999). Reflection is meaningless if pre-service teachers have no criteria for selection of generative aspects of practice to reflect on and the conceptual understanding of what counts as good practice. Why was the activity poor? How can it be improved? If there are no criteria for productive reflection on practice, teaching becomes little more than a 'hit-and-miss' affair, with pre-service teachers relying on common-sense approaches to teaching (Shalem, 2014; Shalem & Slonimsky, 2013). Furthermore, Gamble (2006) claims that when pre-service teachers learn procedures without understanding principles – a danger of relying on one's own personal knowledge and experiences (Rata, 2012) – tacit knowledge is "destroyed" (Gamble, 2006, p. 93). Hammerness (2005) and her colleagues claim therefore that a combination of personal classroom-based experiences and theoretical learning lead to an integrated and more meaningful understanding of teaching.

Theory or practice provides knowledge *for* practice

I now shift to the sub-clash between the role of educational theory in professional practice, and the role of practical knowledge in professional practice. I argue that the teaching as a profession conception foregrounds knowledge *for* practice and may

celebrate the acquisition of a *theoretical* understanding of teaching and pedagogical reasoning in practice. This position is critiqued for being contextually removed. I then argue that the teaching as a profession conception may also celebrate the acquisition of a *practical* understanding of teaching and pedagogical reasoning in practice, which is critiqued on the basis of the argument that practice cannot be understood without a theoretical lens.

The professional conception of teaching foregrounds the role of knowledge and pedagogical reasoning and backgrounds (but does not dismiss) the role of reflective practice. A profession assumes that the body of scholarly knowledge is learned "in universities because we make the strong claim that [teaching is a] learned [profession] and that academic knowledge is absolutely essential to [its] performance" (Shulman, 1998, p. 517). It assumes that teaching is not something that anyone can do, because good teaching requires "'a distinctive knowledge base' that, 'when mastered, will provide teachers with a unique fund of knowledge (e.g. knowledge that is not pedestrian or held by people generally)'" (Gardner, 1989, as cited in Cochran-Smith & Lytle, 1999, p. 255). When knowledge is seen as *for* practice, teachers are seen as effective if they can utilise their knowledge base in order to transform subject knowledge through pedagogical reasoning into appropriate representations to be understood by the learners in their classes. A professionally-oriented version of this 'knowledge *for* practice' conception of teaching can also speak to the notion of teaching being seen as a profession (Hoban, 2005), where teaching is conceived of as necessitating 'holistic judgement' (Day, 1999, p. 94). This holistic judgement enables the teacher to decide when, where and, most importantly for this study, *why* theoretical concepts should be applied (Hoban, 2005; Morrow, 1996). As Hoban says, when viewed as a profession or art, the knowledge base is used not to be applied directly to practice, but as a springboard for "personal judgements about when and how strategies should be used" (Hoban, 2005, p. 8; see also Winch, 2012; Morrow, 2007; Hirst in Hirst & Carr, 2005; and Shulman, 1987a).

Advocates of the view that foregrounds theoretical knowledge *for* teaching claim that it enables teachers to make rational judgments (see, for example, Hirst's argument in

Hirst & Carr, 2005), and that the more educational theories, pedagogies, assessment techniques, and instructional strategies a teacher knows, the better they will teach (Cochran-Smith & Lytle, 1999). The foregrounding of theoretical knowledge for teaching is "an indispensable component of a teacher's capacity for professional judgement" (Winch, 2012, p. 2), providing teachers with a conceptual toolkit for thinking about and addressing educational problems. This means that theory, according to Winch, is not for the direct application to practice, but rather as a means of cultivating a particular way of understanding and thinking about the practice and the content to be taught. Without theoretical knowledge, Morrow (1996) argues, practice cannot be understood because theory and practice of teaching are "*internally* related to each other ... neither can be adequately pursued, understood, learned or appreciated independently of the other" (p. 79, emphasis in the original). Specifically, teachers need to understand theories of teaching and education from a psychological, sociological and philosophical perspective, as well as understand the conceptual structure of the subject matter that they are teaching. Winch argues that teachers need to understand debates within education "in order to be able to grasp them adequately, let alone to be able to use them to form professional judgements" (p. 7). Shalem argues that teachers require theoretical knowledge of salient concepts and ideas in order to ground these judgements on and in practice (Shalem, 2014). Shulman similarly places theoretical knowledge for teaching at the heart of professional development of teachers (1987a).

Large parts of the BEd and PGCE programmes encourage pre-service teachers to construct knowledge *for* practice. The nature of the programmes is such that the pre-service teachers learn a body of disciplinary and subject knowledge in order to "[scrutinise], [fuse] together and [express] different types of knowing in the moment of practice" (MRTEQ, 2015, p. 9). This indicates something of Hoban's (2005) 'teaching as art' conception. However, the BEd and PGCE programmes do not fit neatly within this binary. As will be discussed further on in this review, there are some aspects of these programmes which are more focused on knowledge *in* practice. There also exists some debate as to *what* knowledge should be foregrounded in teacher preparation programmes.

Models that prescribe a knowledge *for* practice view, particularly hyper-clinical theoretical knowledge can be critiqued as knower-blind (Maton, 2014f). This knowledge base of scientific origins has often been translated into the competencies that are desirable for teachers to hold, and which have been "accorded legitimacy because they had been 'confirmed by research'" (Shulman, 1987a, p. 226). A major critique of knowledge *for* practice is that it potentially ignores the necessity of practical knowledge of teaching, according to Wilfred Carr, and sees the theoretical or academic knowledge base for teaching as exclusively sufficient for effective practice (Carr, in Hirst & Carr, 2005). Although teaching is informed by formal knowledge, a hyper-clinical view of knowledge backgrounds the legitimate knower. As a result "[s]uch programmes are routinely criticised on the basis that they are contextually remote" (Rusznyak, 2015, p. 20), and do not adequately prepare pre-service teachers to cope with the demands of a real-life classroom. Pre-service teachers are therefore "[p]repared for teaching, but not for life in the classroom" (Gravett, Henning, & Eiselen, 2011, p. S123). Critics of this conception of teaching argue that pre-service and practicing teachers are seen as "knowledge users, not generators" (Cochran-Smith & Lytle, 1999, p. 257). As Cochran-Smith and Lytle say, this may lead to an "instrumental view of the relationship between theory/research/knowledge and practice" (p. 257) – if the knowledge cannot be applied to improve or aid teaching practice, it's not worth consideration.

Morrow warns of this false conception of the role of theory of teaching: he regards this assumption of an 'external' relationship between theory and practice an impoverished one, draining both theory and practice of their intellectual substance. Hammerness et al (2005) make an important claim:

> even the most scripted approach to teaching requires some room for innovation … 'disciplined improvisation' is far from simply freewheeling – it involves innovation within a set of general constraints and structured analysis of the innovation process to continue to evaluate and adapt the strategies that are used (p. 364).

The likes of Morrow (1996), Shulman (1987a), and Bransford, Darling-Hammond and LePage (2005), among many others, argue that theory is used to enable pedagogical reasoning about practice. Winch (2012) and Shalem (2014) would argue that it is the teacher's theoretical knowledge that provides the structured analysis that is required for this innovation process in teaching to continue. Theory is therefore "[f]ar from being irrelevant to practice" (Rusznyak, 2015, p. 21) because "insights obtained from educational theory are crucial for informing the professional knowledge-based decisions that teachers make in their practice" (*ibid.*)[24].

In contrast, the opposing view is that the knowledge that is legitimate teacher knowledge is skills-based and practical in nature. Some academics see practice as "… the only place in which to really become prepared for the full impact of the classroom… " (Gravett, Henning, & Eiselen, 2011, p. S125) because, they argue, "[t]he [theory] of education cannot inform educational practice because it is itself a form of practice" (Carr, in Hirst & Carr, 2005, p. 623). While theoretical knowledge is the basis for professional knowledge, anecdotal evidence indicates that pre-service teachers find their practical teacher education modules to be much more valuable to their development as a teacher than their academic modules. Some academics see practice as "… the only place in which to really become prepared for the full impact of the classroom… " (Gravett, Henning, & Eiselen, 2011, p. S125) because, they argue, "[t]he [theory] of education cannot inform educational practice because it is itself a form of practice" (Carr, in Hirst & Carr, 2005, p. 623).

ITE programmes that foreground practical knowledge have a vision to develop pre-service teachers' general pedagogical knowledge and situational knowledge (Rusznyak, 2015). Tending towards contextual coherence, "teachers develop realistic teaching practices when they are well prepared for the demands of classroom life" (p. 16). The aim of ITE is the management of pre-service teachers' expectations of the realities of the classroom by immersing them in the classroom and equipping them with a set of practical teaching strategies for use in a wide array of teaching situations.

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[24] See also Hugo (2013).

Often taking a problem-based approach to the structuring of the ITE programmes, "a range of issues, dilemmas and concerns that arise from [pre-service teachers'] experience in practice, or from critical incidents from practicing teachers, form a point of departure" (Rusznyak, 2015, p. 19). Pre-service teachers are exposed to sites of practice from early on in their ITE programmes in order to facilitate the thematic, problem-based approach to ITE. The result of this approach to ITE is captured by Rusznyak (2015) when she says:

> Prospective teachers therefore become equipped with a set of contingent concepts and strategies that together could enable them to be adaptive to the possibilities, limitations and challenges of the context/s in which they will teach. This recontextualising principle foregrounds general pedagogical knowledge and personally acquired practical knowledge and tends towards contextual coherence (*ibid.*).

Skills-based ITE does not sufficiently prepare pre-service teachers for professional teaching, argue the likes of Winch (2012) and Hirst (in Hirst & Carr, 2005), because practice cannot be adequately understood without a theoretical lens. Winch (2012) posits a strong argument for the inclusion of educational theory (particularly philosophy, often regarded as the most abstract of educational theory) as it offers pre-service teachers a 'conceptual toolbox' to think about teaching (Winch, 2012, p. 4), and, indeed, to critique prevalent teaching practices (Rusznyak, 2015). Theoretical knowledge helps pre-service teachers to move past their everyday experiences of teaching and bring a broader understanding and perception to bear on their work (Bransford, et al., 2005) and to become "adaptive experts" (Hammerness, et al., 2005, p. p. 364). Furthermore, teachers who have learned routines from an exclusively practice-based ITE programme, "may lack a theoretical foundation and tools for reflection that would allow them to change course when what they are doing is not working well" (*ibid.*).

This 'knowledge *for* practice' conception of teaching can also be seen to be consistent with the view of teaching as an *applied science* (Morrow, 1996; Shulman, 1987a). I would argue that, like hyper-clinical theories of education, this 'tips-for-teachers'

approach to knowledge for teaching foregrounds the knowledge, and almost completely downplays the role of the teacher as knower. In fact, I would argue that it downplays the teacher as a knower more than the conception of teaching as a profession does. If pedagogical reasoning and professional judgement is removed from teaching, teaching becomes the simple mapping of theory onto practice; it is seen as the simple and straightforward application of educational research and theory onto practice without consideration of its appropriateness. A 'cookie cutter' approach to learning to teach becomes the norm. Learning to teach becomes the learning and enactment of 'recipes' in classroom contexts, thereby undermining the professionalism of teachers. Additionally, when teaching is seen as a technical endeavour where teachers are required to acquire, master and apply a set of skills to teaching (such as writing on the board neatly, and asking learners what they know about the lesson topic at the beginning of the lesson), teachers are likely to apply *normative* judgements to their practice (Rusznyak & Bertram, 2015). What this means is that if the teacher has followed and applied the rules and the techniques that they have been told make for a good lesson, they judge their lesson to be effective. They do not apply any other judgement because their job is to implement the techniques that they have learned to do in order to enable learner understanding. Professional judgement, it can therefore be argued, is cut down by the presence of normative rules.

Furthermore, Morrow argues, when teaching is seen as a mere list of things that teachers need to do in order to be successful, as in an applied science or technical view of knowledge, our understanding of teaching is "impoverished" (2007, p. 79). Theory – often translated as general rules – attempts "not only […to] explain [teaching], but to explain and guide it" (*ibid.*, emphasis in the original). This is dangerous, according to Morrow, because it conveys an understanding of teaching as a technical process: as a process of mastery of teaching through a kind of apprenticeship model, and may lead to a kind of "anti-intellectualism" of teaching (Rusznyak, 2015, p. 19). Shulman and Hoban echo this sentiment, with Shulman saying that these conceptions fail to take into account the complexity of teaching as a professional practice: "[i]n this manner, I would argue, teaching is trivialized, its complexities ignored and its demands diminished" (Shulman, 1987a, p. 225).

This section of the Literature Review chapter has presented the constellation clash between the view that teaching is a personal quest and the view that teaching is a cognitive process. It has shown the clash on the levels of conceptions of teaching, who is awarded legitimacy as a knower, and what they need to know and where they learn it. It now moves to a discussion of what a legitimate knower should be able to do, irrespective of the conception of teaching.

3.5 What should the knower be able to do?

Despite these differing initial experiences of teaching, this research assumes that the teacher as a professional needs to learn to exercise judgement in uncertain conditions, and employ pedagogical reasoning (Shulman, 1987a). Although the nature of ITE is contingent on how knowledge is perceived, how teaching is perceived, and on the perceived purposes of ITE, one of the most crucial goals of ITE is for pre-service teachers to "learn to use their knowledge base to provide the grounds for choices and actions" (Shulman, 1987a, p. 234). There are, however, differing conceptions of what it means to teach, as well as different contextual challenges to ITE that make learning to teach a complex process. The following section of the Literature Review argues that despite the challenges to ITE, pedagogical reasoning is one of the most central 'formal elements'[25] (Morrow, 1996) of ITE if it wishes to prepare exemplary teachers.

What it means to teach has different interpretations by different writers. Morrow (1996) calls teaching "the professional practice of organising systematic learning" (p. 84) which enables epistemological access to knowledge.[26] Alexander (2005) asserts that it is "the act of using method *x* to enable students to learn *y*" (p. 3), while Dunne sees teaching as a practice in which teachers help to "develop [learners'] powers and [...] achieve an identity" (Dunne, in MacIntyre & Dunne, 2002, p. 8). Shulman (1987a) sees teaching as knowledge-based pedagogically reasoned action. The conceptions of

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[25] Morrow calls the non-negotiables of teachers' work the 'formal' elements of practice, that is "an activity guided by the intention to promote learning" (Morrow, 1992, p. 20)

[26] Morrow claims that teaching allows learners epistemological access to knowledge, that is, access to knowledge and learning, as opposed to 'formal access', which is access to school (see, for example, Morrow, Teaching large classes in higher education, 1992).

teaching espoused by Morrow, Dunne and Alexander have implications for what it means to learn to teach. While Morrow, Shulman and Alexander's conceptions have slightly different foci, with Morrow's conception looking at the relationship between knowledge and teachers, Shulman's conception focusing on the relationship between teachers, knowledge and thinking, and Alexander's conception focusing more on the relationship between the teacher and learners, all three conceive of teaching as enabling children to access powerful forms of knowledge. The developing teacher needs to be able to distinguish between the 'formal' and 'material'[27] elements of teaching in order to enable epistemological access to knowledge. It is crucial that a teacher is able to sort the 'formal' elements of teaching – that is, the core roles of a teacher that are the same across all teaching contexts – and the 'material' elements of teaching – that is, the aspects of teaching that change from context to context and rely on the formal elements of teaching. They need to be able to navigate the material elements of teaching in order to allow learners to access powerful knowledge (Rusznyak, 2015; Morrow, 1996).

In addition to differences of opinion on what teaching is, how we learn to teach is not well understood (Rusznyak, 2008). Different authors have tried to articulate how pre-service teachers develop the ability to teach, and what key 'stages' they move through in doing so (Rusznyak, 2008; Tomlinson, 1995; Berliner, 1994; Huberman, 1993; Feiman-Nemser, 1983). Most studies claim that learning to teach is a 'linear' process, with pre-service teachers moving through a sequence of phases to become expert teachers, but, in her longitudinal, large-scale study of sixty-six pre-service teachers over eight TE sessions, Rusznyak (2008; further refined in Rusznyak, 2011 and Rusznyak, 2012) found that prospective teachers do not develop their abilities in a linear way. She found, rather, that participants' development could be plotted on a matrix, where pre-service teachers' development moved through five facets ('knowledge and understanding of content', 'preparation', 'teaching strategies', 'classroom management', and 'monitoring learning'), with four hierarchical levels in

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[27] The 'material elements' are the "ways in which an object or action may vary without ceasing to be an object or action of a particular kind" (Morrow, 2005, p. 98). In the context of teaching, the material elements refer to the context-specific elements of teaching, such as the kind of school, curriculum aims, and types of learners.

each facet. Thus, pre-service teachers are understood to develop at different times in different facets.

Rusznyak's (2012) model claims that the most advanced stages of development sees pre-service teachers engaging in "thoughtful consideration of pedagogical options and [making] appropriate choices", as well as showing "[d]eep insight into subject/s taught, own teaching and the needs of diverse learners [with] probing reflection evident" (p. 115). Similarly, in his seminal work on the nature of expertise in teaching, Berliner (1994, p. 29) claims that a hallmark of the 'proficient' pedagogue is that he or she can understand a situation and make rather effortless decisions about it. As Berliner (1994) says, "out of the wealth of experience that the proficient individual has accumulated comes a holistic way of viewing the situations they encounter", even though they are "still likely to be analytic and deliberative in deciding what to do" (p. 166). Expertise is achieved when these deliberations become unconscious and automatic: a level that nearly qualified and even beginning teachers are not expected to have reached. Berliner even concedes that not every person achieves expert status in their field. But, in order to have a chance to become an expert, the pre-service teacher needs to move through all stages of expertise, from novice to expert. That means that at some stage, they need to develop the capacity to reason and make judgements in and on practice. The major big distinction here is that Berliner argues for a linear model, but that expertise is gained through experience, and not conceptually as Rusznyak has argued.

Relatively speaking, the idea that teaching is a knowledge-based practice and highly complex undertaking is quite young. The seminal work of Lee Shulman (1987a) is widely credited to have moved the work of teachers away from a technocratic notion that they are merely content transmittors, to that of them having their own knowledge bases as users and even creators (e.g. Knowledge-of-practice, Cochran-Smith & Lylte, 1999). The work of teachers has, thus, come to be understood as complex (Hammerness, Darling-Hammond, Bransford, Berliner, Cochran-Smith, McDonald & Zeichner, 2005; Lampert, 2001; Shulman, 1997), with the work of teaching requiring the practitioner to be an 'adaptive expert' (Ainley & Luntley, 2007b), that is, an expert

that is continually improving his or her practice in order to innovate and improve that practice (Bransford, Derry, Berliner, Hammerness, & Beckett, 2005). It is more broadly acknowledged that to perform the outward manifestations of teaching requires conceptually-informed and contextually responsive decision-making (Shulman, 1987a). This requires not only an understanding of the theory but also the development of a "situational appreciation" (Morrow, 1996, p. 80) in order to know which approaches would be most generative in giving learners access to the knowledge (Hoban, 2005). Situational appreciation is an awareness of the context in which the teacher is teaching, and the ability to delineate what is important in pedagogical reasoning and what is ancillary. A basic assumption of this research is that in teaching, specialised teacher knowledge is required to reason pedagogically and make professional judgements (Shalem, 2014; Bransford, Darling-Hammond, & LePage, 2005; Hoban, 2005). Pedagogical reasoning, however, cannot be conducted outside of a context (Shay, 2013), because it needs to be conducted in relation to some kind of artefact or critical incident and is embodied as a choice, decision, or judgement. This is where Morrow's concept of "situational appreciation" (Morrow, 1996, p. 80) is useful. The pedagogical reasoning needs to be conducted in relation to something, but it is through the ability to analyse a situation and decide what is relevant for consideration and what is not that pedagogical reasoning becomes meaningful. But what 'specialised teacher knowledge' is drawn on when engaging in pedagogical reasoning? Once again, Shulman's voice rings loudest. In his seminal paper, *Knowledge and Teaching: Foundations of the New Reform* (1987), he makes a clear attempt to delineate an expert knowledge base for teaching. He posits that there are seven categories of teacher knowledge required to teach as a professional:

1. Content knowledge;
2. General pedagogical knowledge, with special reference to those broad principles and strategies of classroom management and organisation that appear to transcend subject matter;
3. Curriculum knowledge, with particular grasp of the materials and programs that serve as 'tools of the trade' for teachers;
4. Pedagogical content knowledge, that special amalgam of content and pedagogy that is uniquely the province of teachers, their own special form of professional understanding;

5. Knowledge of learners and their characteristics;

6. Knowledge of educational contexts, ranging from the workings of the group or classroom, the governance and financing of school districts, to the character of communities and cultures; and

7. Knowledge of educational ends, purposes, and values, and their philosophical and historical grounds (Shulman, 1987a, p. 8)

The novelty of Shulman's contribution lies in his articulation of pedagogical content knowledge (henceforth, PCK). PCK is what makes teachers' knowledge different from any other profession's knowledge. Teachers' knowledge requires reasoned amalgamation; it is not the simple application of their knowledge in the context of teaching. Simply put, PCK is the "blending of content and pedagogy into an understanding of how particular topics, problems, or issues are organized, and presented for instruction" (Shulman, 1987a, p. 228). This blending requires teachers to use their knowledge base (theoretical or situational knowledge) in order to reason about and legitimise their actions (practice), as well as to think relationally about all aspects of the lesson and broader educational environment in order to provide epistemological access to knowledge for all learners. PCK, it can be argued, captures this reasoned 'blending' of knowledges to enable learning. PCK "goes beyond knowledge of subject matter per se to the dimension of subject matter knowledge *for teaching*" (*ibid.*). While pedagogical reasoning is not the same as PCK, the latter is a useful and powerful knowledge base that pre-service and qualified teachers alike can use in order to engage in meaningful pedagogical reasoning.

Since 1987, when Shulman first wrote about PCK, scholars have tried to develop the concept, particularly within specific subject areas, in order for pre-service and qualified teachers to engage in subject-specific pedagogical reasoning. Attempts have been numerous but have found the concept of PCK slippery and difficult to pin down due to its weak internal grammar. A weak internal grammar means that the ways in which the parts of a concept are connected is not clear, and/or are not agreed upon.

The advent of technological PCK (tPCK)[28], PCK for science teachers[29], and PCK for mathematics teachers[30], brought about a more nuanced understanding of the work of teaching. Park and Oliver (2008), for example, expanded Shulman's model of PCK into a hexagonal model, with a particular focus on science teaching. Their model takes into account the fact that teacher's perceptions of their own teaching ability have an impact on their development of PCK, that PCK requires both knowledge in and on action, and that PCK is idiosyncratic and can be slippery to define and enact (*ibid.*). This 'slipperiness' led to an entire summit being held to come to a consensus of what exactly PCK is. Gess-Newsome (2013) reports that delegates came to a consensus that PCK can be understood as 'personal PCK' and 'personal PCK&S'. 'Personal PCK' is "the *knowledge* of, *reasoning* behind, and *planning* for teaching a particular *topic* in a particular *way* for a particular *purpose* to particular [*learners*] for enhanced [*learner*] *outcomes* (Reflection *on* Action, Explicit)" (Gess-Newsome, 2013, p. 10, emphasis in the original). 'Personal PCK&S' is "the *act of teaching* a particular *topic* in a particular *way* for a particular *purpose* to particular [*learners*] for enhanced [*learner*] *outcomes* (Reflection *in* Action, Tacit or Explicit)" (*ibid.*). In teaching, then, choices need to be made, and these choices are not random. Some choices are better suited to the lesson's purpose than others, and it is here that the teacher's pedagogical reasoning is employed.

3.6 A literature gap: Taking a step back and getting a fresh perspective

Despite academics' best efforts to articulate what PCK is and to pin down how to teach pre-service teachers how to draw upon it to inform pedagogical reasoning, it remains difficult to define and to locate examples of. PCK must be drawn upon to enable the teacher to engage in pedagogical reasoning around what would be the best way to teach *this* content to *these* learners. Pre-service teachers need to learn to engage in pedagogical reasoning in order to make informed judgements in and on practice when faced with the realities of the classroom. The problem comes in where, due to its weak internal grammar, PCK seems to be "knowledge-myopic" (Maton, 2014e), meaning that it is "this kind of theorizing [that] offers a first step towards seeing knowledge but

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[28] See, for example, Mishra and Koehler (2006).
[29] See, for example, Park and Oliver (2008).
[30] See, for example, Marks (1990).

must be developed to conceptualize the organizing principles of knowledge if their properties and powers are to be explored" (p. 8). The difficulty is that, as mentioned earlier, the attempts to develop the concept of PCK have ended up as a further model of knowing, which is a danger of knowledge-myopia (*ibid.*). In order to see what is hidden, we "require a new gaze and different insight" (Maton, 2014e, p. 8).

What is needed is a conceptual framework of ideas that are able to work with concepts that have a weak internal grammar, such as PCK, teaching, and learning to teach. Legitimation Code Theory, henceforth LCT, offers one such framework. LCT enables me, as the researcher, to have a mediating language with which to identify knowledge and judgement in the data, as well as analyse and describe the kinds of knowers that are legitimated by different routes to becoming a qualified teacher in South Africa. LCT offers the tools to lift the lid on the 'blind spot' that covers central ideas such as PCK, pedagogical reasoning and judgement in and on practice. By taking a social realist stance (as will be argued in Chapter 4), it overcomes knowledge blindness. By developing a clearer focus on these invisible processes and concepts, this research hopes to begin to offer a new way of conceptualising how to prepare pre-service teachers to develop their PCK and engage in meaningful pedagogical reasoning and judgement in and on practice.

I also argued earlier in this chapter that the 'teaching as personal quest' view of teaching foregrounds the knower but backgrounds the knowledge, while the 'teaching as cognitive process' foregrounds the knowledge and backgrounds the knower. I also argued that the conception of teaching as an applied science could be seen as 'knowledge-blind'. LCT provides a framework that enables me to work both with knowledge and knowers, without being blind to either. Because LCT offers tools of analysis which help to analyse both knowledge and knowers in knowledge practices, it enables me to analyse the presence of knowledge and knowers in PCK. This will allow me to describe PCK as a whole, and not just from various perspectives as has been the case with the various conceptions and views of teaching.

3.7 Conclusion

In this chapter, I made four conceptual moves: I began by outlining the goals of ITE to locate pedagogical reasoning and professional judgement within the ambit of ITE. Second, the chapter discussed the conception of teachers as knowers. Here, issues such as the pre-existing knowledge that ITE pre-service teachers bring to bear on their studies, as well as ideas around who can be a teacher and what knowledge is required to teach were discussed. I argued that a 'constellation clash' exists between who teachers as knowers are and what knowledge they need to hold in order to teach. Third, I argued that there have been attempts to delineate an explicit knowledge base for teaching by Shulman (1987a), when he tried to theorise the idea of PCK, but that PCK still remains slippery and difficult to pin down due to its weak internal grammar. As such, I claimed that because PCK is difficult to define, pedagogical reasoning is difficult to study and teach despite being an important concept to be taught to pre-service teachers. Fourth, I argued that LCT can offer a mediating language for the study of pedagogical reasoning in this research project, thereby defining the literature gap of the study.

SECTION C:

CONCEPTUAL FRAMEWORK, RESEARCH DESIGN & DATA ANALYSIS

CHAPTER 4: CONCEPTUAL FRAMEWORK

Up to this point this thesis has argued that ITE policy in South Africa makes the claim that all ITE graduates should display the same set of competences, despite the differences in the selection, sequencing, and pacing of their qualifications. It then explored and presented pertinent literature around pedagogical reasoning and conceptions of what it means to teach, culminating in the problem that a knowledge base and for teaching is difficult to define, and proposing that LCT can offer a mediating language for the exploration of PCK and pedagogical reasoning. This chapter takes on the challenge of using LCT as a mediating language and sets up the concepts from LCT. Importantly, the chapter shows what the LCT concepts that are used look like in the target data.

In this chapter I introduce Maton's (2014) Legitimation Code Theory (LCT) by describing LCT's conceptual origins and purpose, which is to explore struggles for legitimacy in social practices. I continue to build the conceptual tool by introducing the reader to the LCT dimension of Specialization, and its constituent parts, epistemic and social relations. I embed within that discussion the Social Plane, and its constituent parts, which are subjective and interactional relations. Then, I introduce the Semantics Dimension, and its constituent parts, semantic density, semantic gravity, and the semantic plane. For each of the LCT dimensions mentioned, I make an argument for the development of a translation device (Maton & Chen, 2016) which allows me to bridge the gap between theory and the data, constituting the coding tools used in this research. I argue that epistemic and social relations allow me to analytically distinguish between whether the participant foregrounds how teachers should be or what teachers should know. I argue that subjective and interactional relations allow me to conceptualise the grounds from which participants draw criteria for good teaching. I also argue that semantic gravity and density allow me to conceptualise the abstraction and complexity of the ideas presented in participants' pedagogical reasoning. Finally, I make an argument that the target data is given by *episodes of pedagogical reasoning* (EPRs; Horn, 2010), setting up a conceptual orientation for delineating which data is relevant for coding purposes. It draws on Bernstein's (2003) concepts of *regulative*

and *instructional* discourse to differentiate between the kinds of responses gleaned from the participants. Drawing on Maton and Howard's (2018) concept of 'target' and 'non-target' data (p. 10), I begin the process of describing and building a conceptual tool to separate the wheat from the chaff within the data set, so to speak.

4.1 Legitimation Code Theory and pedagogical reasoning

This study seeks to unpack the pedagogical reasoning of differently qualified pre-service teachers. It needs to recruit tools to understand what pedagogical reasoning looks like and from where criteria for good teaching is drawn in order to engage in that pedagogical reasoning. The conceptual tools that the study uses to explore pedagogical reasoning were drawn from LCT. I begin with a brief overview of LCT and its broader aims and insights for social practice research. It begins with a short description of how LCT is rooted in, but extends, Bernstein's code theory, and Bourdieu's field theory. Taking up these roots and extensions, I then show how Maton (2014) conceives of all social knowledge practices as struggles for legitimacy by introducing the epistemic-pedagogic device. It should be noted that this research does not explicitly draw on the epistemic-pedagogic device itself, nor does it set up a struggle. It uses some of LCT's concepts to describe the development of expert ways of thinking and how these specialist ways of thinking are realised in a specific situation within the social field of teacher education. In exploring these specialist ways of thinking, there needs to be an understanding of the criteria for good teaching that are drawn from the field of practice by the research participants. This research takes research participants directly into the field of practice (by watching a lesson) and see which evaluative logics they use to respond to that lesson.

The roots and extensions of LCT

LCT is "… a sociological framework for researching and informing practice" (Maton, 2014a, p. 182), and provides a set of conceptual tools with which to explore the grounds on which social practices are legitimised. It takes concepts from Bernstein and Bourdieu's work and uses them to fill a gap in each other's conceptualisation of sociological practices: Bernstein's work, according to Maton, allows for the analysis of how knowledge is structured, but does not account for who the actors that are engaged

in those struggles are; Bourdieu's work says that struggles between actors in sociological practices exist, but is deaf to the grounds over which those struggles are fought. I now present a discussion of how LCT takes up and extends Bernstein's code theory and Bourdieu's field theory.

LCT develops Bernstein's notions of 'pedagogic codes', which comprise strengths of boundaries (called 'classification') and control (called 'framing'). LCT "explicitly broadens the referents of 'codes' beyond the 'pedagogic'", and claims that "all practices are constructed as *languages of legitimation* or claims to legitimacy whose organising principles are conceptualised as *legitimation codes*" (Maton, 2016, p. 10, emphasis in the original). LCT also avoids binary thinking by "[realising] the relational potential of this mode of theorising" (*ibid.*) by describing knowledge practices as having relative strength along a continuum of strengths (so, saying that a knowledge practice has a *stronger* or *weaker* code than another knowledge practice). Importantly, for this study in particular, LCT extends Bernstein's ideas of classification and framing by embedding them within broader organising principles given by super-ordinating codes, which reveal more readily the bases of legitimation of knowledge practice being studied. This is important for this study, which seeks to explore the bases of legitimation for differently qualified pre-service teachers' episodes of pedagogical reasoning.

LCT draws on Bourdieu's field theory, which asserts that we need to "[move] beyond the sensual, common-sense experiences of the world" because they are "taken for granted as self-evident, an illusion of immediacy and transparency that naturalises and essentialises social inequalities" (Maton, 2016, p. 8). In ITE, the kind of thinking that pre-service teachers need to develop is understanding and analysing teaching as a knower, not from a common-sense point of view. Bourdieu's account of sociological practices highlights the need to "shape actors' dispositions, to convert a theory into a mode of thinking, acting and being", or "gaze" (*ibid.*). Bourdieu's theory claims that a cultivated gaze can only be developed through an apprenticeship – through repeated, prolonged immersion in exemplary models an in relationship with a knowledgeable other. LCT uses the concept of gaze and extends it to show that dispositions alone

are insufficient for the building of knowledge (*ibid.*). Maton claims that while "[a] realist and relational gaze is invaluable … without concepts capable of shaping, enacting and sustaining that gaze, it becomes limited and limiting" (*ibid.*). LCT overcomes these limitations by asserting that a gaze can be "also be trained through conceptual means" (*ibid.*, p. 9), that is, theory is necessary for a *trained* gaze. Importantly for this study, LCT offers a structured toolkit to

> … [extend] Bourdieu's notion by articulating an explicit, systematic, principled mode of thinking … thus [making] the basis of the gaze more explicit, more democratically available, more responsive to data, and more amenable to change (Maton, 2016, p. 9).

Maton's broader and more inclusive notion of 'gaze' therefore gives the criteria for selection of what counts in the development of a gaze[31]. Furthermore, LCT takes up Bourdieu's assertion that struggles for status in social practices exist, and extends this to account for underlying generative principles of social practices.

Pedagogical reasoning in the field of reproduction

LCT conceives of social practices as struggles for legitimacy (Maton, 2014g). Following this logic, Maton proposes that in order to fully understand the struggles for legitimacy in social practices, we need to understand what the grounds over which struggles are being fought are (which requires asking questions about the nature of the social field being studied). He also says that we need to ask what it is that actors are struggling over, or, in other words, "how relations are established among the differing measures of achievement embodied by actors' languages of legitimation" (*ibid.*, p. 44). Maton argues that the way in which we can understand the grounds over which actors struggle *and* over what they are struggling is what he calls the "Legitimation Device" (*ibid.*, p. 45). He distinguishes between "languages of legitimation" and "legitimation codes" (*ibid.*); the former conceptualising the practices that actors struggle over as "strategic stances that proclaim measures of achievement" (*ibid.*), and the latter organising those stances' organising principles.

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[31] Please note that the idea of 'gazes' is developed later in this chapter when it is presented from the LCT perspective.

Maton (2014g) proposes an 'epistemic-pedagogic device' to conceptualise these struggles in different sociological spaces. The epistemic-pedagogic device asserts that there are three 'fields' in a knowledge practice: a "production field", which encompasses all places where 'new' knowledge is created; the "recontextualization[32] field", which includes all of the places where knowledge from the production fields are selected, rearranged and transformed to become pedagogic discourse; and the "reproduction field," wherein sites of teaching and learning of that knowledge happens are included (*ibid.* p. 51). Teaching, being a socially constructed practice (Morrow, 2007) in which teachers work with knowledge, has a number of struggles that exist at all three levels of the epistemic-pedagogic device. In the production field, there are struggles over whose knowledge gets curricularized (this was explored in the Literature review, where struggles over the legitimate knowledge for teaching were conceptualised); in the recontextualization field, there are struggles over how and what is pedagogized; in the reproduction field, there are struggles over what are legitimate ways of teaching the curriculum. This study is situated within the reproduction field and seeks to explore the evaluative logics of actors working within the reproduction field. It seeks to understand the criteria on which they base their pedagogical reasoning, as well as the ways in which they articulate their pedagogical reasoning in order to evaluate the teaching of another actor. Put another way, the study looks to understand the generative mechanisms of actors' pedagogical reasoning: what knowledge or experiences count in order to engage in pedagogical reasoning? In this way, this study joins others which have used LCT to study a range of teaching practices, from the teaching of ballet, to music, to engineering. However, there have been no studies so far that seek to investigate the different ways in which the judgements in context of newly qualified teachers are legitimised. LCT concepts have been used to explore the knowledge practices of areas as diverse as ballet, dentistry, and music in previous studies (Maton, 2016, pp. 7-8). While this is testament to the framework's versatility and power, it also means that it is important to strongly root the concepts of the *present* study in the explanatory framework.

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[32] While this thesis has been written using British English, LCT specifically uses the American spelling of words, which I have honoured (honored?) in this section. Words such as 'specialization' and 'recontextualization' have therefore been spelled in the American way on purpose.

4.2 Tools to understand struggles for legitimacy in pedagogical reasoning

Drawing on the concerns of Basil Bernstein (2000), a problem in qualitative research is understanding how the theory talks to the data, and how the data explains the theory (Maton & Chen, 2016). Bernstein claimed that the source of this eschewal is in the theory itself, leading him to distinguish between the 'internal language of description' of a theory and the 'external language of description'. As Maton and Chen (2016) put it, the internal language of description is "how the constitutive concepts are related", and the external language of description is "how those concepts relate to referents beyond the theory" (p. 27). Maton and Chen (2016) critique Bernstein's work for offering "[b]ut brief insights into the process" (p. 32) of relating the internal and external languages of description, and describe some general characteristics of external languages: They claim that an external language is not a direct extension of the internal language; it "… arises from its engagement with the specificities of an object of study" (p. 32). They go on to argue that the development of an external language of description requires immersion in data because specific concepts look different in different contexts. LCT itself is a good example of this, as Semantics (which is one of the LCT concepts that I am using in this study) can also – and has also – be used to analyse various other knowledge practices, from law, museums and theatre, to law, jazz studies and Freemasonry. Each study, therefore, needs to explicitly define what the LCT concepts look like within the context and data gleaned from their study. I, therefore, need to define what the varying strengths of semantic gravity and semantic density, epistemic relations and social relations, and subjective relations and interactional relations look like with regard to differently qualified pre-service teachers' EPRs. For example, an EPR with strong semantic gravity in my study will necessarily be different to data with strong semantic gravity in a study about secondary school English literary study practices (such as Christie, 2016). Maton and Chen propose that a translation device "[transcends] the divide between theory and data" (*ibid.*) by making the external language of description more visible.

A translation device is a specific tool to relate concepts that are being explored in a study "… to something beyond a theoretical framework" (Maton, 2016b, p. 243). In my

understanding, and how I have used it, a translation device is an explanation of what specific codes (given by the relative strengths of continua) on the chosen plane, 'look' like in the data. It makes explicit the nuanced ideas that are considered important by the researcher, making the coding and analysis process more transparent, and the study reproducible. It is my opinion, therefore, that the development and use of a translation device makes the results and conclusions of a study more credible. I have therefore developed a translation device to make the coding and data analysis process that I undertook for this study visible to the reader.

The development of a translation device is not simply the placing of a 'stencil' of theory over the data. It is also not the 'haphazard pulling' of categories from the data. It is a dialogic process: "Developing 'translation devices' enables dialogue between theory and data and provides a means for substantive studies to 'speak back' to the framework" (Maton, 2016, p. 21)[33]. It requires immersion in both the data and in the theory, which is why I consider the creation of a translation device as a process of development, with ongoing reflection on the data and on the theoretical or conceptual framework that guides the study. If the reader will excuse my 'informal' description of this process, I would like to share my perception of the experience of developing a translation device and have tried to capture it in Figure 4.2-1[34], which is on page 92.

Move 1: I began at the point of theory: I asked myself what the object of study is in the study. I identified it as the pedagogical reasoning of differently qualified pre-service teachers. Then, I looked at the concepts that I was working with, specifically, the role of different kinds of knowledge to legitimate pedagogical reasoning, such as professional knowledge, practical knowledge, theoretical knowledge, and so on. I then looked at the LCT tools that I was using, namely epistemic relations and social

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[33] I used the analogy of a tango dance to describe this dialogic relationship in a presentation to colleagues at a Research Degrees weekend held at Wits School of Education. I find this analogy very useful in understanding the relationship between theory and data, with the translation device doing the dancing, which is characterised by a back-and-forth-style choreography, between the two.

[34] Only the four moves for developing a translation device are written in the past tense, because these paragraphs capture an actual experience. The rest of the chapter is written in the present tense.

relations, semantic gravity and semantic density, and subjective relations and interactional relations.

Move 2: I began putting together the bare bones of what the LCT concepts could look like in the data. I drew up a table of categories of relative strengths of the particular LCT concept. The narrative below exemplifies my thinking around the various strengths of semantic gravity in relation to pedagogical reasoning:

> Semantic gravity refers to the contextually bound nature of the knowledge practice. In terms of my object of study, that could be how contextually bound the justification is. Is it rooted in a specific context, or no context, or a hypothetical context, or theory?

Move 3: I then turned to my data to 'try it out': do these categories adequately describe the kinds of responses that the participants gave? Do they accurately capture the context-boundedness and condensation of the participants' responses? Are there any responses that do not fit into any of the defined strengths that are described in the translation device?

Move(s) 4: It was at this point that I realised where the 'gaps' in my developing translation device lay, and I had to turn back to the translation device to re-jig the categories so that they accounted for more of the ideas that arose in the interviews. Note that this 're-jig' had to consider the specificities of the LCT concepts that I was working with: the semantic gravity translation device *had* to describe the extent of context-boundedness of the EPR, and I could not add a category to describe anything but the extent to which the EPR was contextually-bound, as well as the specificities of the object of study. Then I went back to the data to try again… and the process continued. For a really useful description of this process, see Maton and Chen (2016), which is published in Maton, Hood and Shay (2016).
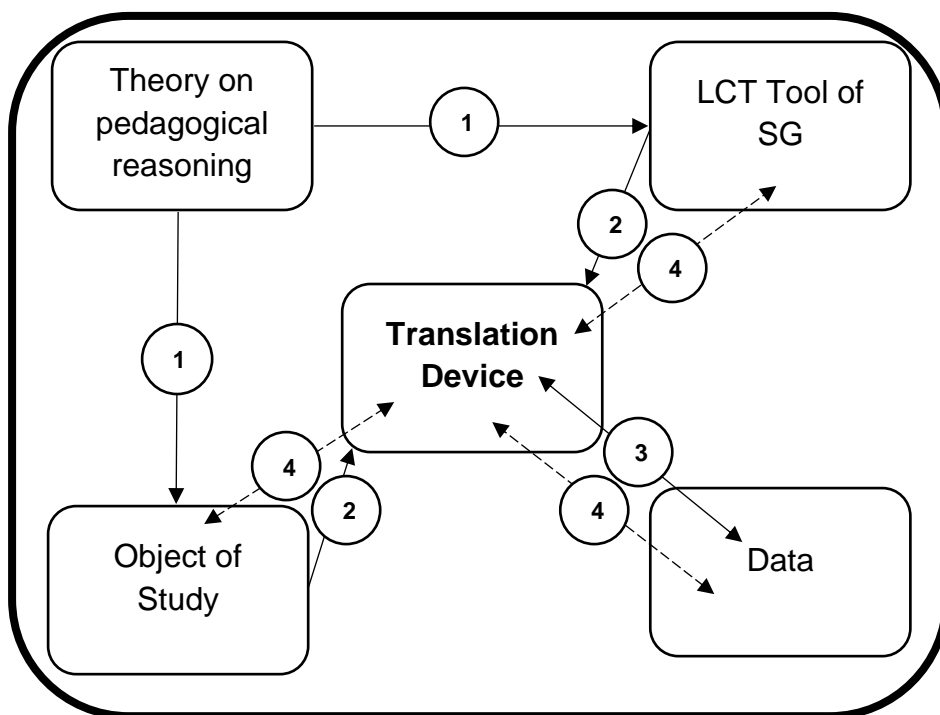
Figure 4.2-1: An illustration of my experience of developing a translation device

4.3 The Specialization Dimension, the Knower Code, and Gazes

One of the purposes of this study is to understand the ways in which differently qualified pre-service teachers reason about practice. As such, a tool to conceptualise what the pedagogical reasoning of participants *looks like* was required. The Specialization Dimension "explores practices in terms of *knowledge-knower structures*, whose organising principles are given by *specialization codes*, comprising strengths of *epistemic relations and social relations* … to explore the workings of the *epistemic-pedagogic device*" (Maton, 2016). The Specialization Dimension asks what is valued, or what is special about a intellectual field or practice. It asserts that knowledge practices are always orientated towards something and by someone. The Specialization Dimension, then describes the evaluative criteria in a field of practice. In the context of this study, the Specialization Dimension and its constituent codes helps to unpack how differently qualified pre-service teachers respond to lessons, which will show what they have learnt to value about good teaching.

The Specialization Dimension "… is a *dimension* of LCT which explores practices in terms of *knowledge-knower structures* whose organising principles are given by specialization codes that comprise strengths of *epistemic relations* and *social relations*" (Maton, 2016b, p. 243, emphasis in the original). The relative weakness or strength of the relations are denoted by – and + symbols, respectively. Epistemic relations (abbreviated to ER) refer to the strength of the relationship between a practice and its object, and these various strengths can be plotted on a continuum as per Figure 4.3-1:

ER+

↕

ER-

Figure 4.3-1: Epistemic relations plane

Social relations (abbreviated to SR, see Figure 4.3-2) refer to the strength of the relationship between practices and their subject (Maton, 2016).

SR- ←——————→ SR+

Figure 4.3-2: Social relations plane

These two continua of strengths create the Specialization Plane:

ER+

SR- ←——————→ SR+

ER-
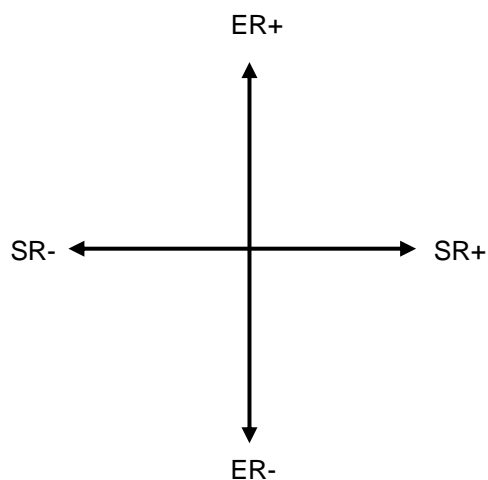
Figure 4.3-3: The Specialization plane

While the Specialization Dimension of LCT was not actually used to develop an analysis tool for the data its constituent attributes lend a clarity to the nature of professional knowledge for pedagogical reasoning in a context. Maton (2016a) emphasises that the scholar should *only use the theory that you need*. As such, I introduce the Specialization Plane only to orient the reader to the context of the conceptual tools that inform the data analysis, discussed later in this thesis. Various relative strengths of epistemic relations and social relations constitute the four specialization codes. These codes are described below, and depicted in Figure 4.3-4 namely:

- *Knowledge codes* (ER+, SR-), "… where possession of specialised knowledge, principles, or procedures concerning specific objects of study is emphasised as the basis of achievement, and the attributes of actors are downplayed";
- *Knower codes* (ER-, SR+), "… where specialised knowledge and objects are downplayed and the attributes of actors are emphasised as measures of achievement, whether viewed as born (e.g. 'natural talent'), cultivated (e.g. 'taste') or social (e.g. feminist standpoint theory)";
- *Élite codes* (ER+, SR+), "… where legitimacy is based on both possessing specialist knowledge and being the right kind of knower"; and
- *Relativist codes* (ER-, SR-), "… where legitimacy is determined by neither specialist knowledge nor knower attributes – 'anything goes'" (Maton, 2016, p. 13)
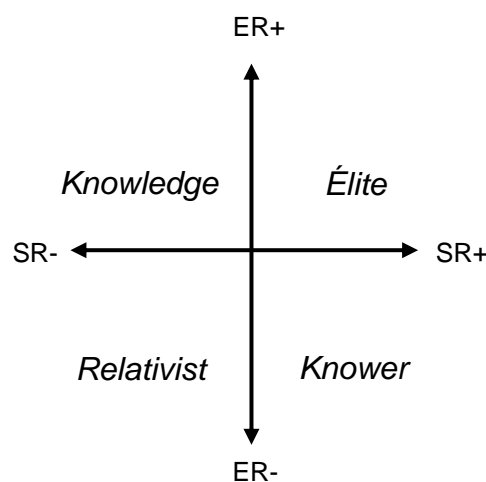
Figure 4.3-4: The Specialization plane with four codes

Teaching practices move all over the Specialization Plane. Shulman (1987a) argues that the "rhetoric regarding the knowledge base" of professional teaching tends to lack a specification of what teachers should "know [and] understand" (p. 4). He therefore argues that the work of teachers tends to background the epistemic relations – it is what Maton calls "knowledge-myopic" (2014c, p. 65), and tends to be dominated by a knower code. Shulman's work is seminal in its attempts to delineate an agreed-upon knowledge base for professional teaching, but, as was shown in the Literature Review, has not homogenised the conceptions of teaching. Shulman's work highlights that possession of desirable attitudes, communication abilities, and dispositions is often associated with professional teaching (Shulman, 1987a), which, in LCT terms, foregrounds the social relation of teaching. However, this does not preclude the possibility of aspects of teachers' practice being characterised by a knowledge code or an élite code. Indeed, certain pedagogic acts may fall within the knowledge code; a syllabus for a particular subject may fall within the knowledge code; a single teacher may move from the knowledge code, to the knower code within a particular lesson/unit of work. Some teachers' practices may be more dominated by one code than another, which is what this study aims to explore. I now argue which concepts from LCT will be useful to my study, and why and how they are enacted.

Specialization translation device

Concepts from the Specialization Dimension of LCT are useful for this study because they describe *the kinds of claims that the participants make* (as will be seen below). What this dimension opens up is the opportunity to explore what differently qualified pre-service teachers in this study value when it comes to good teaching, and it helps to reveal their criteria for good teaching through the types of claims about good and bad teaching that they make. I have introduced epistemic relations and social relations when arguing that teaching tends towards being in a knower code. I now introduce the codes as tools of analysis. For this study, I do not need to define degrees of epistemic relations and social relations because I am using the dimension to indicate what kinds of claims the participants make in their EPRs. Also, given that the epistemic relations are generally weaker (because of the contested nature of teaching and knowledge bases of teaching, as argued in the Literature Review) and the social relations are generally stronger according to the assumption that teaching tends towards a knower

code. The underlying code for all the EPRs, therefore, tends to have a weaker epistemic relation and a stronger social code. I shall use the idea of foregrounded or backgrounded in relation to the epistemic relations or social relations to analytically distinguish the relative strengths of the epistemic relations and social relations.

I need to distinguish whether they are making a claim about what a teacher should *be*, or about what a teacher should *know* and *be able to do*, therefore foregrounding the social relations or epistemic relations, respectively. If a participant makes a judgement that foregrounds the epistemic relations, they are making a *knowledge* claim. When they make a claim that foregrounds the social relations, they are making an *axiological* claim. A basic translation device (Table 4.3-1) for the epistemic relations and social relations can be developed:

Table 4.3-1: Translation device for epistemic relations and social relations of EPRs

Claim	Underlying code: ER -, SR +	Indicator	About	Example
Knowledge		ER foregrounded; SR backgrounded	What a good teacher should *know* and *be able to do*	"the big ideas and then sub-ideas and then seen how your key questions that you are going to ask and the key ideas that they should know should be your big ideas and then you get sub-ideas that would assist and they form a big part of your big ideas." (EPR B2)
Axiological		SR foregrounded; ER backgrounded	How a good teacher should *be*	"… there wasn't anything extra that could spice up the lesson and the knowledge and understanding of content was limited to what the learners should know." (EPR L1)

Knowledge claim: ER foregrounded; SR backgrounded

A knowledge claim foregrounds the epistemic relation and backgrounds the social relation. It is a claim about what a teacher should *know* and *be able to do*. It is therefore a claim about the knowledge and skills that a teacher should have. It does not focus on the teacher as a person, or the beliefs that they should have, or how they should behave or act. A knowledge claim foregrounds the knowledge and skills of a teacher and backgrounds their disposition or personality. In this way, a knowledge claim is aligned with the constellation reported in the Literature Review which sees teaching as a learned, cognitive process (in the manner of Shulman, Morrow, and Winch).

Axiological claim: ER backgrounded; SR foregrounded

An axiological claim foregrounds the social relation and backgrounds the epistemic relation. It is a claim about how a teacher should *be*. It is therefore a claim about the

personality and dispositions that a teacher should have. It does not focus on the knowledge or skills that they should have. An axiological claim foregrounds the personality features and person and backgrounds their specialised knowledge and skills. In this way, an axiological claim is aligned with the constellation reported in the Literature Review which sees teaching as a personal quest (in the manner of Korthagen and Schön).

Where has this claim about teaching come from?

So far, this chapter has developed a language to describe what the claims about teaching and teachers that the participants express in the EPRs are about – whether they are about what a teacher should know (foregrounding the epistemic relations) or about how a teacher should be (foregrounding the social relations). As such, it has, up to now, developed a language to describe *what* the EPRs are about, but it does not have a language to describe the processes, experiences, or knowledge that gave rise to the claims about teaching that are made by differently qualified pre-service teachers – what shapes the legitimate ways of knowing, and what interactions are particularly significant in shaping the gaze of the pre-service teacher as a knower (Maton, 2014b)? In order to begin to unpack the ways of knowing as a teacher, we need to turn to the social plane. The social plane is part of the '4K model' and explores the kind of knower that participates in a practice. In particular, it considers who is able to participate in the practice, and the kinds of interactions that shape a gaze. A gaze is "a mode of thinking, acting and being" (Maton, 2016). A gaze may be developed through different kinds of interactions with 'significant others' that shape legitimate ways of knowing in the practice. The social plane of LCT gives us a language with which to explore *how* differently qualified pre-service teachers develop a gaze, and what they draw on to develop that gaze.

The complexity of learning to teach means that there are huge numbers of influences and interactions that may contribute to the generation of a gaze, both conscious and unconscious (Hammerness, *et al.*, 2005). The scope of the present study is only able to seek to access those influences that are recognised and can be articulated by research participants. This certainly does not preclude the influence of other, more

tacit, influences. It does, however, reveal those ways in which research participants are conscious of interactions that were particularly significant in shaping their ability to engage in pedagogical reasoning.

Having a social relation (as described above), the practice of teaching "may be specialised in terms of both … kinds of knowers and ways of knowing" (Maton, 2014b). Different kinds of knowers can be described by *subjective relations* (SubR) and *interactional relations* (IR) respectively. Subjective relations refers to the relations between "practices and the kinds of actors engaged in them", and describes who can belong to a practice. If anyone can belong to a practice, it is relatively weaker than if there are particular criteria to belong to that practice. Strengths of subjective relations can be plotted along a continua of strengths, as per Figure 4.3-5:

SubR+

↕

SubR-
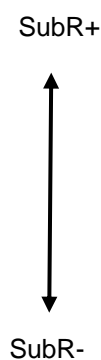
Figure 4.3-5: Subjective relations continuum

In the case of this research, it is assumed that the subjective relations are weak because there are no personality tests or particular ways of being required for entry into ITE programmes. Interactional relations refers to the relations between "practices and the ways of acting involved" (*ibid.*). If there is strong control of interactions between the knower and exemplary practices, practitioners or great works, interactional relations are stronger. If there is weaker control of interactions between the knower and exemplary practices, practitioners or great works, the interactional relations are weaker. Strengths of interactional relations can be plotted along a continua of strengths, as per Figure 4.3-6:

IR- ⟷ IR+

Figure 4.3-6: Interactional relations continuum

In this study, stronger interactional relations are where there is less interpretation and recontextualisation required to make sense of the criteria for teaching that is transmitted because the interactions are more strongly controlled. Weaker interactional relations are where there is more interpretation and recontextualisation required to make sense of the criteria for teaching that is transmitted because the interactions are less strongly controlled. Thus, the various strengths of subjective relations and interactional relations form various codes on the Social Plane, as shown in Figure 4.3-7:
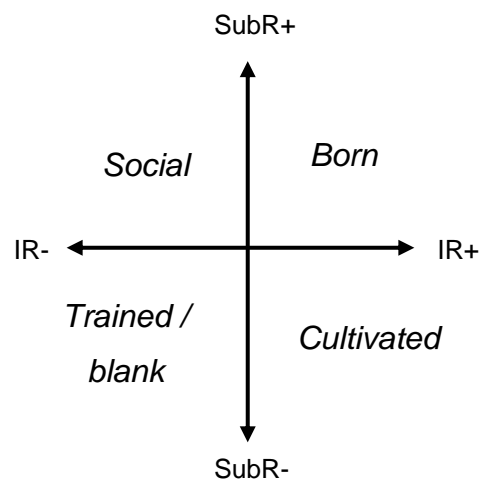
Figure 4.3-7: Gazes on the social plane

Different knowers have different gazes. Gazes are particular ways in which a knower comes to possess knowledge[35]. There are four gazes that are legitimised by the knower code, namely:

- *Born gazes* (where the actor is born with the right kinds of attributes needed to be that kind of knower) given by SubR+, IR+;
- *Social gazes* (where knower attributes are linked to being a member of a particular social group) given by SubR+, IR-;
- *Trained / blank gazes* (where specialised knowledge or no knowledge is the basis for legitimacy (Martin, 2016)) given by SubR-, IR-; and
- *Cultivated gazes* (which are possessed through immersion in knowledge practices and through interactions with significant others (Martin, 2016)) given by SubR-, IR+

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[35] My own interpretation.

I would hypothesise that the practice of teaching and the process of becoming a teacher requires the development of a trained gaze, and/or a cultivated gaze. The trained gaze is one in which specialised knowledge is emphasised as the basis for achievement, downplaying the attributes of knowers (Martin, 2016). A cultivated gaze is one which is developed "by those who attain the legitimate dispositions through interaction with a 'significant other,' such as apprenticeship under a master or immersion in a canon of great works" (*ibid.*, p. 198)

In the context of the present study, three routes to becoming a qualified teacher are explored. To remind the reader, the three routes that were briefly introduced in Chapter 1, are the 4-year Bachelor of Education (BEd), the 1-year Post-Graduate Certificate in Education (PGCE, which is completed after an undergraduate arts or science degree), and the learnership model, where a pre-service teacher completes his or her studies (whether a BEd or PGCE) part-time, and spends the school day in the classroom under the apprenticeship of an experienced teacher. The question at this point is *how* the gaze is developed in the different routes: In the 4-year BEd, the gaze is trained through a blend of subject-specific knowledge, pedagogical knowledge, fieldwork, and educational theory work. The different categories of knowledge that the pre-service teachers learn are structured to work together to enable the pre-service teacher to develop a cultivated gaze. In the PGCE, the gaze is developed through a focus on pedagogy and the development of classroom-specific skills and knowledge, coupled with cultivation through fieldwork, with the assumption that the pre-service teacher has learned the requisite subject knowledge in their undergraduate qualification. In the learnership model, the pre-service teacher is expected to learn the same knowledge as in the BEd or PGCE, but I would hypothesise that their gaze is cultivated much more through interactions with the site of practice, and through interactions with experts in the specific classrooms in which they spend their days. We could then say that their programme has much stronger interactional relations than the BEd or PGCE programmes without the learnership component.

A translation device for interactional relations

The social plane is understood by the intersection of two principles, namely *subjective relations* (SubR) and *interactional relations* (IR) respectively. In the context of this study, subjective relations is not relevant, and will thus not be used to analyse data. The reason for this is because no personality tests or dispositional requirements are in place in order for pre-service teachers to gain access to ITE programmes. Access to an ITE programme is based on school-based academic results only. This study therefore assumes that anyone can learn the practices of teaching, irrespective of personal attributes. Resultantly, I work with the assumption of teaching being characterised to have a weak subjective relation because there are very few limitations on who can learn to teach. What this study does explore, though, is which kinds of interactions give rise to which kinds of gazes. It explores the kinds of interactions that differently qualified pre-service teachers deem important for the shaping of their gaze on practice. Now we can use the concept of interactional relations to begin to explore the extent to which interactions transmit strongly or weakly defined criteria for what constitutes a legitimate gaze on teaching practices.

First level of granularity: How strongly are the interactions controlled?

The answer to this first-level question would be a binary yes/no response. A stronger interactional relation would constitute an instance where interactions are strongly controlled. In such interactions, less interpretation or recontextualisation of the criteria about teaching that is transmitted through the interactions is required to make sense of teaching: the criteria are more explicitly transmitted to the pre-service teacher. Weaker interactional relations would constitute an instance when interactions are weakly controlled. In these kinds of interactions, more interpretation or recontextualisation is required to make sense of the criteria about teaching that is transmitted through the interactions. This gives the first level of granularity of the developing translation device:

Table 4.3-2: Binary refinement of interactional relations of an EPR

Question & answer		Relative strength of IR	Description
Are the interactions strongly or weakly controlled?	Strongly	Stronger IR	Less interpretation or recontextualisation of the criteria about teaching that is transmitted through the interactions is required to make sense of teaching
	Weakly	Weaker IR	More interpretation or recontextualisation of the criteria about teaching that is transmitted through the interactions is required to make sense of teaching

Second level of granularity: To what extent do the interactions expressed in the justification of the EPR require interpretation or recontextualisation to crystallise the criteria for good teaching?

This more refined level of detailed allowed me to add the dimension of the *extent* to which the interactions require interpretation or recontextualisation to crystallise the criteria for good teaching. The weakest strength of interactional relations constitutes a trained gaze because specialised knowledge is the basis for legitimacy.
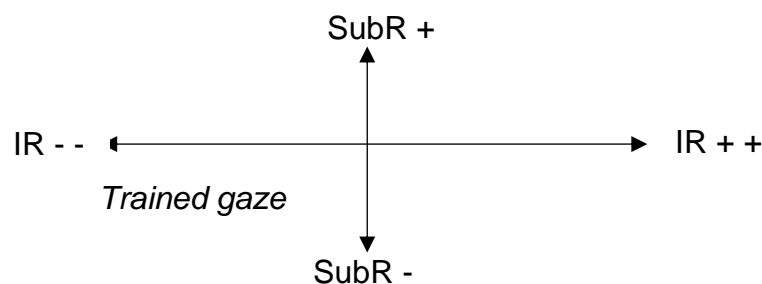
Figure 4.3-8: Development of interactional relations translation device showing trained gaze

The major question here when determining the relative strengths of interactional relations deals with the control of the interactions between the expert and the pre-service teacher. At a first level distinction, we analytically sorted between interactions that required little interpretation or recontextualisation to distil the criteria for good teaching, and those that require much interpretation and recontextualisation to distil

the criteria for good teaching. The discussion now turns to a typology and topology of relative strengths of interactional relations, beginning with the very weakest interactional relations. Each typology will be grouped according to the gaze it gives, which is discussed before each relative strength within the gaze. We begin with the weakest interactional relations, giving a trained gaze.

Practices with weaker subjective relations (which is assumed true of all typologies presented here) and weaker interactional relations "weakly bound and control both legitimate kinds of knowers and legitimate ways of knowing" (Maton, 2014b, p. 186), and may offer a "*trained gaze* that emphasises the possession of specialist knowledge and skills", or a "*blank gaze*" (*ibid.*, emphasis in the original) which means that no gaze on practice has been developed.

The weakest strength of interactional relations would be when an EPR is justified using educational theory. Such interactions require the pre-service teacher to recontextualise the ideas into a different context to make sense of them for teaching. This kind of basis of legitimation of EPR sets up conditions for pre-service teachers developing a *trained* gaze because it places emphasis on the acquisition and possession of specialist knowledge and skills. When a pre-service teacher draws on theories and the works of educational theorists, the interactional relations are relatively weak because theory itself does not convey criteria for good teaching practice, and the pre-service teacher needs to do the work of interpreting the theory to distil criteria for good teaching. It is important to note at this point, that not all educational theories originate as theories of education. Piaget's work on *genetic epistemology* (e.g. Kitchener, 1987), for example, was written for an audience of psychologists, and not teachers. The work of Vygotsky (1978) on social constructivism needs to be recontextualised to be used to inform classroom-based teaching Although these theories have been recontextualised into the domain of teaching and learning because they carry important lessons for how we should approach teaching and learning, theory itself does not transmit the criteria for thinking, being, and acting like a teacher. It is important to note, at this stage, that this typology refers only to the usage of the theory itself as a basis of legitimation, not to the *teaching* of the theory, which is considered to contribute to a cultivated gaze, which is discussed later in this chapter.

Thus, the following continuum of strengths begins to be developed[36]:
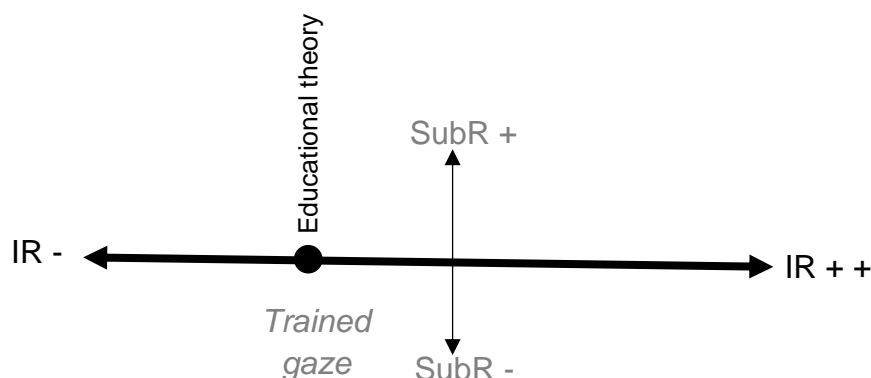
Figure 4.3-9: Trained gaze with relative weakness of interactional relations

Now that the typology of weaker interactional relations bases of legitimation for EPRs have been established, I turn to a discussion of the stronger interactional relations bases of legitimation, which give a *cultivated gaze*. Practices with weaker subjective relations (which is assumed true of all typologies presented here) and stronger interactional relations "weakly bound and control legitimate categories of knower but strongly bound and control legitimate interactions with significant others" (Maton, 2014b, pp. 185-186), offer a *cultivated gaze* that "often involve acquiring a 'feel' for practices through, for example, extended participation in 'communities of practice' (Lave & Wenger, 1991); sustained exposure to exemplary models … and prolonged apprenticeship under an acknowledged master" (Maton, 2014b, p. 186). I begin with the strongest interactional relations (relatively speaking) and move to the weaker, but still relatively strong interactional relations typologies.

When a pre-service teacher receives feedback on their own teaching during their ITE programme, during a teaching practicum or simulated teaching and learning situation, the interactional relations are relatively the strongest. This is because the interaction is very strongly controlled by the expert teacher who is giving the feedback, and the

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[36] Note that in subsequent figures, the relative strengths of IR – will not be shown to keep the diagrams clear. The detailed final diagram is at the end of the conceptual construction on page 107. Furthermore, in subsequent diagrams, information that is important but not relevant to the part of the development of the diagram that is currently being discussed, is in greyscale, so that the reader is oriented to the aspect of the diagram that is being developed.

criteria about being, thinking, and acting like a teacher are explicitly transmitted to the pre-service teacher. Pre-service teachers are told exactly what is legitimate, what is not, what they must do, what they should avoid, and so on. The rules of the game are made very clear to the pre-service teacher in the case of receiving feedback on their own teaching. Little to no interpretation or recontextualisation of the feedback is required to distil the criteria for good teaching.

A relatively weaker interactional relation, but still a relatively strong interactional relations, is when a pre-service teacher derives an idea about teaching, with which they legitimise an EPR, from their observations of teaching and learning situations. At this point it is important to make a distinction between the observations of teachers and teaching that pre-service teachers make as learners themselves, and the observations that they make during their ITE programme is the object of study. Observations of expert teachers and lecturers during ITE programmes has a relatively stronger interactional relations because the interaction is still relatively strongly controlled by the expert teacher as the criteria for good teaching is modelled for them. The interactional relations are weaker than an instance where a pre-service teacher legitimates an EPR using direct feedback because some interpretation of the criteria for good teaching must happen on the part of the pre-service teacher.

Even weaker than the aforementioned, but still with a relatively strong interactional relations, is when a pre-service teacher legitimises an EPR using personal reflection on their own practice. This has a relatively strong interactional relations because the interactions between the expert (the pre-service teacher him/herself) and the pre-service teacher, through reflective processes, are relatively controlled by the pre-service teacher (i.e. s/he reflects on what s/he feels is significant). The interactional relations, however, are weaker than when a pre-service teacher observes an expert teacher because the criteria for good teaching require more interpretation and recontextualising when analysing one's own practice. More critical thought is required to evaluate the pre-service teacher's experiences to interpret the criteria for good teaching than when observing an expert teacher or receiving feedback from an expert teacher. In a tacit way, the pre-service teacher gets feedback about the lesson from

various sources, such as the learners' marks or engagement in the lesson, and so through this, criteria of what legitimates a teacher is transmitted to the pre-service teacher, although not as explicitly as direct feedback from or observation of expert teachers.

When a pre-service teacher draws on their own experience of being a learner, they are drawing on what Lortie (1975) calls their "Apprenticeship of Observation"[37]. These experiences of being taught have profound and deeply impactful effects on how pre-service teachers view teaching and how they go about approaching teaching as novice teachers themselves. Although learning to teach is not the object of study in this case, the expert teacher has some control over the criteria for being, thinking, and acting like a teacher that are communicated. The learner/pre-service teacher needs to do some significant interpretation and recontextualisation of the criteria, however, because learning to teach was not the object of study when observation occurred. The object of study in the moment of the interaction is something other than learning to teach. The idea that the pre-service teacher draws on to legitimate their EPR is drawn after-the-fact, that is, they have drawn an idea about teaching and learning in retrospect, imposing a view of teaching and learning on a situation where learning to teach was not the object of study. These relative strengths of interactional relations, which all constitute a cultivated gaze, can be placed along a continuum of strengths as per Figure 4.3-10:
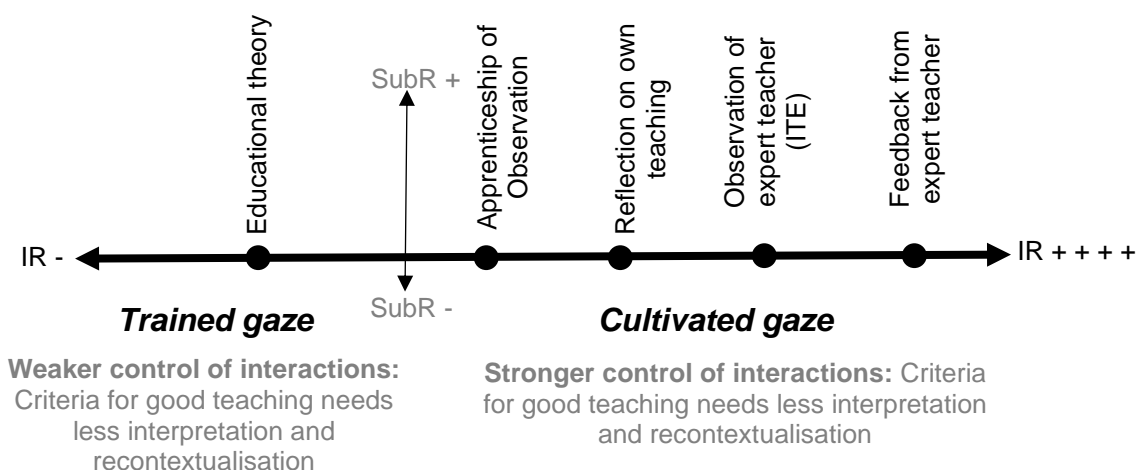
Figure 4.3-10: Continuum of strengths of interactional relations

[37] See the Literature Review.

Finally, the translation device in

Table 4.3-3 for the analysis of interactional relations in the data can be produced:

Table 4.3-3: Translation device for subjective relations and interactional relations of EPRs

Code and Gaze			Description	Example
SubR	IR	Gaze		
-	+ + + +	Cultivated	EPR is legitimised by feedback on own teaching from a mentor teacher or supervising lecturer during practical component of ITE	"Teaching prac – Rhonda[38] came to crit my first session … she said, 'The kids are at a higher level, you need to go beyond.'" (PGCE data)
-	+ + +		EPR is legitimised by observations made of expert teachers or lecturers during ITE programme	"I remember [in a lecture] Dr Leigh[39] and she was teaching, she called out someone's name, 'so temperature is… Tumisho[40]…,'" (BEd data)
-	+ +		EPR is legitimised by lessons drawn on through reflection on own teaching during practical teaching component of ITE	"As a teacher I felt that they needed to know more about what I'm teaching – I need to know more about how is it applicable in real life" (Learn. data)
-	+		EPR is legitimised by personal experiences of being taught as a learner (Apprenticeship of Observation (Lortie, 1975))	"I learned this first time during my high school when I was in class myself. I was in a big class and wasn't easy to ask questions" (Learn. data)
-	-	Trained	EPR is legitimised by theory and principles of teaching learned during formal ITE programmes	"I think it was Lee Shulman – 'you cannot teach what you don't understand'" (EPR B4)

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[38] Not her real name.
[39] Not her real name.
[40] Not his real name.

This section has been developing a diagram and translation device for the relative strengths of subjective relations interactional relations of pre-service teachers' EPRs. It has argued that learning to teach is typified by a weak subjective relation because anyone can learn to teach. It has made the argument that the strength of the interactional relations is dependent on the extent to which the criteria for good teaching need to be interpreted and recontextualised from interactions with a significant other. The next section develops the translation device for the Semantics Dimension of LCT, which helps us to explore the complexity and abstraction of EPRs.

4.4 The Semantics dimension

Concepts from the Semantics dimension of LCT are useful for this study because they describe *two characteristics of meaning* (as will be seen below). What this dimension opens up is the opportunity to explore, firstly, the extent to which the judgements are grounded in the context of the lesson in the video (using semantic gravity). In other words, this indicates the level of 'situational appreciation' (Morrow, 1996) that the participants show. It also allows me to conceptualise the extent to which the participants abstract their criteria for good teaching from the context of the lesson. The second characteristic of the EPRs that the Semantics dimension enables me to conceptualise is the complexity of meaning, as well as condensation of meaning in the language that the participants use: whether it is everyday language or specialised teaching and learning language (using semantic density). Because I have not explained the concepts of semantic gravity and semantic density as yet, I shall do so before showing how I intend to take them up to develop tools of analysis.

Knowledge, according to Maton (and taken up by Shay, 2013) has two properties, which reveal its organising structure. These two properties are called *semantic gravity* (SG) and *semantic density* (SD), ranging from strong (+) to weak (-).

SG-

↑

↓

SG+

Figure 4.4-1: The plane of semantic gravity

Semantic gravity refers to the contextual-embeddedness of the knowledge – "the degree to which meaning relates to its context" (Maton, 2014a, p. 2). The easier it is to lift a concept from the context in which it is given meaning, the weaker its semantic gravity. The more difficult it is to understand a concept or practice outside the context in which is is produced, the stronger it's semantic gravity. In the context of the object of study of this research project, semantic gravity enables me to explore the extent to which the justification of the pedagogical judgements of the newly qualified teacher is grounded in relation to a specific contextual manifestation of teaching.

SD - ←————————————→ SD+

Figure 4.4-2: The plane of semantic density

Semantic density refers to "the condensation of meanings within practices" (*ibid.*). What this means is that when the semantic density is relatively strong (SD+), there exists significant complexity within and between ideas. As such, semantic density refers to the relative location of an idea within a dense web of concepts and relations. In the context of the object of study of this research project, semantic density enables me to explore the extent to which the justification of the pedagogical judgements of the newly qualified teacher has many nodes of connection. Semantic gravity and semantic density operate separately on a two-dimensional plane, as can be seen in Figure 4.4-3:
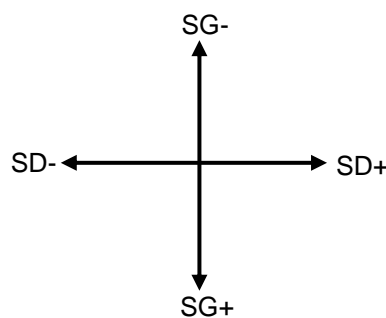
Figure 4.4-3: Two planes of semantics

All knowledge practices can be described by identifying relative strengths or changes in semantic gravity and semantic density along a plane because, according to Maton (2014a), "*[a]ll* practices are characterized by *both* semantic gravity *and* semantic density" (emphasis in the original). This results in a Cartesian plane (Figure 4.4-2), allowing for the description of any knowledge practice in terms of its relative strength

of semantic gravity and semantic density. As such, because knowledge practices can be described in terms of their relative strengths and weaknesses of semantic gravity and semantic density, binary thinking is avoided: a knowledge practice cannot be described as having strong semantic gravity; only a strong*er* semantic density than another knowledge practice. This means that all the ways in which differently qualified pre-service teachers express their judgements can be described in terms of semantic gravity and semantic density.

Semantic gravity translation device

Pre-service teachers, whether pursuing their qualification through a BEd, Learnership or PGCE, have various messages about teaching communicated to them about good (and not so good) teaching throughout their ITE. Teachers are required to engage in pedagogical reasoning as part of their participation in the practice of teaching. As Guile (2014) puts it,

> [i]n the case of professional practice the challenge for aspiring professionals is to develop the capability to use disciplinary knowledge, in conjunction with professional experience, as a resource in a specific context to pick out the salient features of that situation or event, and to then infer what follows and how to act ... it is this mediated relationship between theoretical understanding and professional experience that constitutes the basis of [pedagogical] reasoning (p.82).

Pedagogical reasoning must happen, as Guile says, in relation and response to a context. Morrow (1996) says that teachers must develop 'situational appreciation' which is "a professionally appropriate perception of what is salient in particular situations" to inform "judgements-in-context" (p. 80). But what does contextual coherence in an 'Episode of pedagogical reasoning' or EPR (Horn, 2010) look like? It is at this point that a 'translation device' needs to be developed in order for a researcher to clearly delineate the target data when it comes to contextual embeddedness of EPRs. The extent to which the teacher draws upon contextual knowledge in order to reason, constitutes the relative strength of the semantic gravity of the EPR. This understanding that the extent to which an EPR can be contextually

bound, and that that extent can be captured by relative strengths of semantic gravity, gives the opportunity for the development of a translation device.

First level of granularity: Is the justification of the EPR bound to context?

The first level of granularity with regard to the EPR simply asks whether the EPR is contextually bound or not. At this point we could describe an EPR with a binary yes/no answer to the question of context-boundedness, *Does the justification for the EPR draw on contextual knowledge?*:
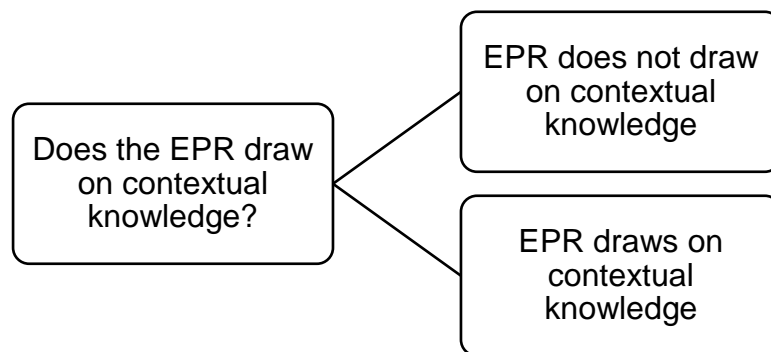
Figure 4.4-4: Binary refinement of semantic gravity of an EPR

Second level of granularity: To what extent is the justification bound to context?

Given the critique of binary thinking that LCT posits (Maton, 2016), the *extent* to which the EPR is or is not contextually-bound can be described, allowing the translation device to reach for finer levels of granularity, enabling more precise coding of the data. In order to understand the extent to which an EPR is contextually-bound, Morrow's (1996, p. 80) concept of 'situational appreciation' is useful. Situational appreciation is "a professionally appropriate perception of what is salient in particular situations" (*ibid.*) and is a hallmark of a profession. According to Dewey (1904), one of the defining features of a profession is the ability to make judgements or decisions under conditions of uncertainty. However, it is not enough to simply be aware of the complex contexts in which teaching and learning happen, but the teacher needs to be able to distinguish the elements of that context and specific situation that should impact the pedagogical decisions that they make, requiring what Day (1999) calls 'holistic judgement' (p. 94). Morrow argues that teachers need to take into account important aspects of the situation in order to make pedagogical decisions, and that they need a particular understanding of what should be considered (and, as importantly, what should not be

considered) when making those decisions. It is this situational appreciation that provides a source of rationality to pedagogical decisions taken in situ (Morrow, 1996). This conceptual clarity offers the opportunity to reach for more refined levels of detailed, and allows me to increase the granularity of the analysis tool to be able to capture *what* the context for judgement is given in Figure 4.4-5:

The reader is reminded that all strengths of semantic gravity fall somewhere along a
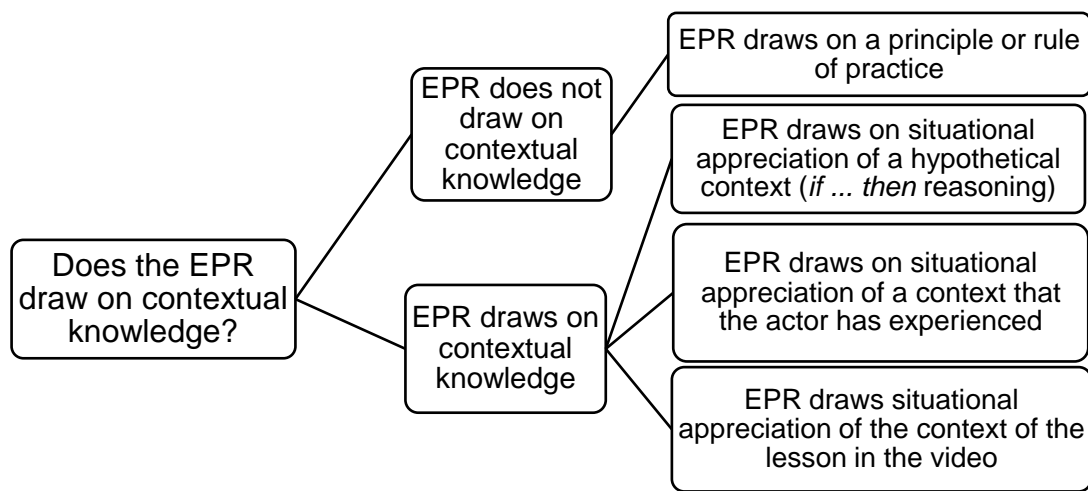
Figure 4.4-5: Second-level refinement of semantic gravity of an EPR

continuum. The pin-pointed extents to which an EPR is contextually-bounded can therefore be placed in relation to one another along the semantic gravity continuum of the semantic plane, as given in Figure 4.4-6:

Decreasing distance

Context of artefact	EPR *draws* on contextual knowledge			EPR *does not* draw on contextual knowledge
	EPR draws on situational appreciation of the context of the lesson in the video	EPR draws on situational appreciation of an actor's own experience	EPR draws on situational appreciation of a hypothetical context (*if … then* reasoning)	EPR draws on a principle or rule of teaching

Increasing distance

Figure 4.4-6: Relative distance of EPR from the context (semantic gravity)

Finally, a translation device for the semantic gravity of EPRs can be pulled together. Hypothetical examples of each strength of semantic gravity can be imagined and included. This translation device is on the next page in Table 4.4-1. What follows thereafter is a discussion of each of the various strengths of semantic gravity.

Table 4.4-1: Translation device for semantic gravity of EPRs

SG		Description	Nature of situational appreciation	Example
−	EPR does not draw on a context	EPR draws on principle or rule of practice	The EPR is completely abstracted from any context at all as it grounds its judgement in a principle or rule of practice	"… finding other ways of explaining instead of just using learners' everyday examples in terms of explaining temperature maybe by starting with their everyday knowledge, asking them about present weather conditions, just to maybe lead to their understanding of temperature and climate" (EPR B4)
+	EPR draws on a context	EPR draws on situational appreciation of a hypothetical context (*if … then* reasoning)	Actor shows a kind of situational appreciation by imagining a situation in which a given problem might be apparent. Lessons deduced from the hypothetical context are drawn on and applied to a given context	"… when you call out to a learner, all the learners stop, and when you come back now learners don't know what you were talking about, you have to restart" (EPR L4)
++		EPR draws on a real-life context (own experience)	Actor shows situational appreciation of his or her own experiences as a pre-service teacher during practical teaching experiences, and applies lessons learned from that situational appreciation to another context	"I've had rowdy classes where it is just noise for an entire 40 minutes." (EPR P2)
+++		EPR draws on situational appreciation of a given context (putting myself in someone else's experience)	Actor shows situational appreciation of the given context, and applies lessons learned from that situational appreciation to the given context	"… she mentioned the headings on each of the worksheets or hand-outs and then said, 'so that's what we are going to do today'."(EPR B2)

SG +++: EPR draws on situational appreciation of a given context (putting myself in someone else's experience)

If an actor's EPR draws on ideas that are derived through situational appreciation of a given context (such as a simulated classroom), the semantic gravity of the EPR is relatively extremely strong because it is rooted in a specific, shared context. This context may be something like a videocase, lesson transcript, or a microteach lesson, and, when presented to a number of actors, provides a context about which they reason. The context, then, while specific, is not fleeting, and is more transferrable. The justification of the EPR contains reference to the salient aspects of the context (deduced by situational appreciation), and the 'lesson' that can be applied to the context, according to the actor's judgement.

SG ++: EPR draws on situational appreciation of a real-life context (own experience)

When an actor justifies an EPR by drawing on a lesson that they learned about teaching and learning in another real-life context, the semantic gravity of the EPR is relatively very strong, coded as SG ++. That is, the justification of the EPR is rooted in a particular, very personal context and that specific context is used as the 'yardstick' by which the actor gauges what is significant and not significant in the given context. Put another way, their situational appreciation of the given context is derived from their situational appreciation of another teaching and learning context that they have personally experienced in some capacity (as a learner, student, pre-service teacher, or another role). The justification of the EPR is deeply rooted in this other lived experience that the experience needs to be explained before the so-called 'lesson' that the actor learned from the experience can be applied to the given context, which is what distinguishes this strength of semantic gravity from the others.

SG +: EPR draws on situational appreciation of a hypothetical context (*if … then* reasoning)

When an EPR is justified by drawing on a hypothetical context's potential ideas, the semantic gravity of the EPR is still relatively strong. Even though the situational appreciation is not enacted in an actual context that exists or has existed, the actor creates a context from which to draw ideas about what is salient in a given (real)

context, and thus, the EPR's justification is rooted in a context, hence being considered to have a relatively strong semantic gravity. Due to the nature of the context – being hypothetical – it has a relatively weaker semantic gravity than when an EPR is justified using the actor's own experience or the salient features of a given context. Just as the justification that draws on situational appreciation of the given context has a relatively weaker semantic gravity than when the EPR draws on the actor's own experiences, the use of a hypothetical context has a relatively weaker semantic gravity because a hypothetical context is even less specific than the simulated context, which was less specific than the actor's own experiences. Any pre-service teacher can imagine a context and identify salient features in order to understand a teaching and learning situation. Pre-service teachers do this frequently when asked to develop generic lesson plans, for example.

SG -: EPR draws on principle or rule of practice

If the EPR is justified by drawing on a principle or rule of practice, it has relatively weak semantic gravity. The lack of context in which the EPR is rooted makes it understandable in any other context, which leads it to being coded as SG -. Rules and principles of practice are necessarily context-free so that they can be transferred and enacted in any context. An example of a rule or principle of practice could be something like, 'a learner truly understands the knowledge if he or she can explain it in his or her own words.'

A translation device for semantic density

As was described earlier in this chapter, semantic density (SD) refers to the extent to which meaning is condensed within ideas and ideas are networked with one another. The previously introduced translation device was developed to identify the relative strengths of the semantic gravity of the EPRs; that is, the extent to which the EPR was contextually bound. The discussion now turns to a development of a translation device for the semantic density of the EPR. The semantic density of the EPR constitutes the extent to which the ideas expressed in the EPR are networked. It asks the question: *To what extent does the language that is used to make and explain the judgement condense meaning?*

More specialised, teaching- and learning-specific language tends to condense more meaning than everyday language. Specialised teaching- and learning-specific language, I would argue, therefore has a stronger semantic density than everyday language. For example, 'the teacher jumped around' in the lesson condenses less meaning than, 'the teacher did not present the knowledge in a systematic way.' The former could refer to physically jumping around or moving from one concept to the other in an erratic manner. The latter clearly refers to moving from one concept to the other in an erratic manner. In addition to being clearer, language with a stronger semantic density is more networked. In the example presented earlier in the paragraph, there are a number of other ideas at play in the statement. There are ideas around the pedagogies that are suitable for the presentation of knowledge, the conceptual structure of school knowledge, and so on. Although everyday language can condense multiple meanings (see Maton & Doran, 2017), these kinds of networks of meaning are not necessarily condensed in the everyday example, thereby weakening the semantic density.

For the purposes of this study, I only need to analytically distinguish between stronger and weaker semantic density, because the actual nature of the condensation of the language that participants use to make and justify their judgements is not the object of study, as it may be in a study in linguistics, for example. Stronger semantic density indicates the use of language that is formal and teaching- and learning-specific, thereby condensing a constellation of concepts. Weaker semantic density indicates the use of language that is simple in nature and does not condense meaning. A basic translation device (in Table 4.4-2) can therefore be produced:

Table 4.4-2: Translation device for semantic density of EPRs

Code	Indicator	Example
SD **+**	Formal, teaching- and learning-specific language and terminology, with complexity of meaning in ideas; ideas are networked with each other	"the big ideas and then sub-ideas and seen how your key questions that you are going to ask and the key ideas that they should know should be your big ideas and then you get sub-ideas that would assist and they form a big part of your big ideas." (EPR B2)
SD **-**	Simple language and terminology, presented as discrete ideas	"She just stuck on that and it seemed to hop around for the different temperature regions with the graphs still but there wasn't a clear understanding behind them" (EPR P1)

SD +: Formal teaching- and learning-specific language and terminology, with complexity of meaning in ideas; ideas are networked with each other

Language and terminology that is specifically associated with the practice of teaching is used. When the semantic density is stronger, language and terminology that only someone who has access to the internal goods of the practice of teaching is used. A non-teacher would not be able to make judgements using this kind of language and terminology. Furthermore, the ideas that are used condense a network of meaning and can be networked to other ideas.

SD -: Simple language and terminology, presented as discrete ideas

Language and terminology that is not specifically associated with the practice of teaching is used. When the semantic density is weaker, language and terminology that anybody, even a non-teacher could employ, is used. A non-teacher would be able to make judgements using this kind of language and terminology.

4.5 What data is significant?

Part of the conceptual approach to the present study requires the clear delineation of what data is useful to understand the object of study and which is not. It is at this point that I draw on Maton and Howard's (2018) work and their construction of 'target' and 'non-target' data in order to develop "explicit recognition criteria when enacting

concepts in analysis" (p. 9). Given that the object of study in this research project is the pedagogical reasoning of differently nearly qualified pre-service teachers, the work of Bernstein on distinguishing between instructional and regulative discourse will be useful in identifying the target data. Bernstein (2003) distinguishes between two criteria which are evaluated when evaluating the knowledge acquisition by a learner, namely, regulative criteria and instructional criteria. Regulative criteria are "about conduct, character, and manner" (p. 198), and instructional criteria is about "how to solve this problem or that problem, or produce an acceptable piece of writing or speech" (*ibid*.), or in other words, the knowledge or skill itself. I also include dispositional criteria, that is, criteria about the personality of the teacher, such as her/his personal attributes, approachability, and kindness. In the context of the study of pedagogical reasoning of differently qualified pre-service teachers, we can understand the ideas about which actors reason using Bernstein's criteria, plus dispositional criteria as being target data:

Table 4.5-1 Target and non-target data in this study

Data	Criteria		Example(s) of comments on …
Target data	Instructional criteria	Management of knowledge	Preparation
			Educational resources used
			Subject knowledge
			Explanations
			Monitoring of learning
	Regulative criteria	Management of learners	Communication skills
			Behaviour management / discipline
			Learner participation
	Dispositional criteria	Management of self	Physical appearance
			Personality
Non-target data	Anything else		The weather outside

This distinction between target and non-target data is given to constitute the "recognition rules" (Maton & Howard, 2018, p. 4) of the data, without which translation

between the empirical data and theoretical ideas with which the researcher is working becomes unclear – "[r]eality becomes too messy for the model" (*ibid.*).

4.6 Conclusion

This chapter has presented the conceptual framework for this study and has presented the development of the conceptual tools of analysis for this study. As a whole, this study uses four translation devices, across two dimensions and three planes of LCT. All of these translation devices enable me to build up a 'picture' of each EPR in the data, in terms of their:

- Foregrounding and backgrounding of what a teacher should know and how a teacher should be in their EPRs (epistemic relations and social relations);
- Contextual embeddedness and characteristics of abstraction of their EPRs (semantic gravity);
- Condensation of meaning in their EPRs (semantic density); and
- Basis for legitimation of the claims about what a teacher should know and how a teacher should be in their EPRs (subjective relations and interactional relations)

The thesis now moves to a presentation of the research methods and procedures. It includes an example of how the translation devices that were developed in this chapter were enacted to reveal the findings of the study, which are presented in Chapters 6, 7, and 8.

CHAPTER 5: RESEARCH METHODOLOGY & DATA ANALYSIS

Teachers cannot access professional knowledge or make professional judgements outside of a context (Shay, 2013), therefore pedagogical reasoning has to be made in relation to something. Pre-service teachers and qualified teachers are expected to have a deep knowledge of the theoretical underpinnings, principles and technical knowledge of teaching as well as the ability to use their discretion in applying them to their practice (Freidson, 2001, as cited in Shay, 2013) in order to demonstrate true pedagogical reasoning (and not opinion). Whether that knowledge arises from principles of practice or whether it organises practice (Clarke & Winch, 2004), professional knowledge requires the understanding of both context and theory, and pedagogical reasoning is the bridge between these two: it involves deciding when to apply which theories, principles and norms. The problem is that pre-service teachers' contextual knowledge is often limited because they are only in the teaching context for short periods of time, unless they are engaging in a learnership programme. As a result, this study necessitated the use of a singular, synthesised context in order to explicate the participants' pedagogical reasoning and knowledge bases in relation to the same instance of teaching and learning[41]. This section will discuss the methods used to conduct the research. It shows that this research utilises a predominantly qualitative research design but utilises numerical data to analyse and understand general trends amongst cohorts. As such, it has a mixed-methods element.

5.1 Qualitative research design: a case-study approach

This section discusses and gives a rationale for the research paradigm.

Qualitative research design

This research project required rich, textured accounts of a phenomenon, and wanted to take an in-depth look at an individual or set of phenomena. Thus, "[r]ich narrative

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[41] To enable comparison.

descriptions" (McMillan & Schumacher, 2010, p. 322) were required to reach this end. Qualitative research design "[provides] 'rich' descriptions that cannot be achieved by reducing pages of narration to numbers" (*ibid.*). Qualitative research allows the researcher to acknowledge, begin to get a sense of and describe the complexities of existing phenomena because it focuses on the *qualities* of the phenomena that cannot be quantitatively measured (Denzin & Lincoln, 2000). By adopting a qualitative approach to research (and data collection), one endeavours to understand phenomena in situ. Qualitative research, then, allows a focus on the qualities and experiences of the individual. The data collection process happens in a natural setting (or a simulation of a natural setting), and the analysis of data is inductive to find patterns and themes that emerge from the experiences of the participants (*ibid.*).

When considering options for a research design, Cohen, Manion and Morrison (2007) argue that a researcher needs to make a number of decisions in order to select a research design that will best suit the nature of the research. The more salient considerations include: *What are the specific purposes of the research?*; *What needs to be the focus of the research in order to answer the research questions?*; and *what kinds of data will be required?* (p. 81, emphasis added). Although quantitative and qualitative research designs are often placed in opposition to one another, Firestone (1982) argues that they are not "antithetical" (p. 4). He claims that there is no definite connection between a research paradigm and research methods, meaning that a qualitative paradigm may employ a quantitative method. As in the case of the present study, "method-types are more collections of techniques that *can be mixed and matched according the to specific problem*" (*ibid.*, emphasis added). In this research, as will be discussed, a case-study approach is coupled with content analysis. Cohen and his colleagues' (2007) questions will be used to frame my rationale for a qualitative paradigm in the present research, as well as considerations of the suitability of specific methods in order to address the specific problem (Firestone, 1982).

Purposes of the research
The purpose of this research is to describe the kinds of pedagogical reasoning used to interpret and evaluate an artefact of practice, and the knowledge bases from which

nearly-qualified pre-service teachers draw in order to make those judgements. Consequently, it requires a research design that allows the research to 'tell a story': to allow the reader and researcher to understand the participants' pedagogical reasoning in relation to the artefact of practice, in all of its complexity (Firestone, 1982). This necessitates a qualitative research paradigm that allows the 'story' to be told. Also, a purpose of this research is to see whether or not pre-service teachers who have pursued different ITE programmes reason in the same way as one another. Trends around differences and similarities between participant cohorts can be gleaned through content analysis methods.

Focus of the research in order to answer the research questions
The research needs to focus on the pedagogical reasoning of the participants in order to explore the undergirding knowledge (and its articulated acquisition) that they bring to bear on the artefact of practice. A qualitative approach allowed me to explore the reasoning and knowledge bases of participants. The use of LCT tools of analysis, however, lends an element of robustness and transparency to the data analysis, as was discussed in the Conceptual Framework chapter.

Kinds of data required
The data that is thus required is rich, textured accounts of pedagogical reasoning in a context (Shay, 2013). This kind of data can only be collected when the participant is embedded in the context of study,[42] and so a requirement of the research design is to provide some sort of artefact to act as a context for the participants to reason about. I chose to utilise a video of a real lesson as the artefact of practice. Furthermore, a key feature of qualitative research design is that the data is collected directly from the source. The rich, textured data therefore needed to be collected using a method that allowed participants to explore their own reasoning and knowledge bases deeply, and allowed me to "make sense of, or to interpret, phenomena in terms of the meanings

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[42] Although I was not embedded in the context in the strictest sense, I did lead the participants in an exploration of their professional judgements. I was not "detached" from the research process, as the quantitative researcher often is (Firestone, 1982, p. 2).

[that the participants] bring to them" (Denzin & Lincoln, 2000, p. 3). As such, a case study approach was employed.

Collective case-study approach

A case study is "an exploration or in-depth analysis of a 'bounded system' (bounded by time and/or place)" (Cresswell, 1998, as cited in Fouché, 2005, p. 272). The term 'bounded' means that the object of study is unique within space, time, and individual characteristics (McMillan & Schumacher, 2010). A case study provides an opportunity for the researcher to collect the nuanced, textured data pertaining to the professional judgements and knowledge bases of individuals (Cohen, et al., 2007). A case study approach to data collection is relatively open-ended in terms of the *methodological* norms associated with it (McMillan & Schumacher, 2010; Hitchcock & Hughes, 1995, as paraphrased in Cohen, et al., 2007). The case study approach emphasises the unique, single occurrence of a phenomenon, and does not prescribe or suggest methodological principles for collecting case study data. According to Cohen and his colleagues, a case study, in considering phenomena as cases, holds the benefit of keeping systems whole, and avoids fragmenting the complex, dynamic relationships and contextual factors at play in specific cases. This complexity enables and necessitates "in-depth investigation" (Sturman, 1999, in Cohen, Manion, & Morrison, 2007, p. 253). Furthermore, case studies facilitate the study of situations that quantitative or numerical research cannot adequately address (Cohen, Manion, & Morrison, 2007).

The case study is considered a *collective* case study when the researcher is looking at "a number of different cases […] combined in a single study" or with "more than one setting [being] used" (McMillan & Schumacher, 2010, p. 345). A collective case study enables the researcher to engage in a deep study of a few cases, as opposed to a large scale (but relatively less in-depth) study of many cases, as may be the case in quantitative studies. Collective case studies require that there be a variable to regulate the selection and analysis of the cases. These variables enable comparisons to be made between the unique cases in order to posit trends and themes pertaining to the individuals and participant groups (Fouché, 2005).

In the present study, I collected data from a number of 'cases' which were the responses of differently qualified pre-service teachers to the same recorded lesson and lesson plan, all within one research setting, and based on the same context (as will be described in Section 5.2). A collective case study approach enabled me to collect data which was produced within a specific context and within a specific set of constraints. The 'boundedness' of the research design allowed for the data to be analysed utilising two variables, namely, the programme of initial teacher education undertaken by the participant group, and the nature of the initial teacher education in terms of immersion in practice. These variables will be more clearly illustrated in Section 5.6.

This study is a cross-sectional study, because it paints *a picture of a particular group* of people at a particular point in time (Cohen, et al., 2007). It is a "'snapshot' of a population at a particular point in time" (*ibid*. p. 213). Cohen and his colleagues claim that a cross-sectional study may be ineffective for mapping change, and while this may be true, it is not of concern in the present study because it intends to map the *present* decision-making abilities and knowledge bases of each of the participant groups, and not to follow their development over an extended period of time.

Drawing on the dichotomy set up by Adler (2002) between the rich, textured accounts provided by specific instances and the generalisability of large sample sizes, this study demanded a collective case study design. Adler intimates that although in-depth accounts do provide detail and a more nuanced understanding of a phenomenon, they are small-size, and are not easily generalisable. Wider, more generalisable studies, while enabling research to "[describe] and [compare] across a range of [participants] and [contexts]" (Adler, 2002, p. 10), lose the ability to describe complex contexts and situations (*ibid.*). A collective case study design allowed me, as a researcher, to look at a limited number of cases in-depth. This study was, in my opinion, broad enough to enable 'fuzzy generalisations' to be drawn from the data, as well as get a nuanced understanding of the individual and group cases due to the depth of the inquiry, as will be described in Section 5.3. Furthermore, the presence of quantitative analysis

methods helps to increase the generalisability of the research findings (Firestone, 1982). This section of the chapter has described the general principles of the research design for this study, and argued that the characteristics of a qualitative collective case study are most favourable to draw out textured, rich data about the pedagogical reasoning abilities and knowledge bases of differently-qualified beginning teachers.

5.2   Using a recorded lesson to access pedagogical reasoning

As was argued in the Conceptual Framework, professional knowledge, encompassing pedagogical reasoning and professional judgement, requires a context for employment. Writers like Shalem (2014), Shay (2013), Clarke and Winch (2004), and Shulman (1998) all speak about professionals applying professional knowledge in a context, and this is because pedagogical reasoning and its resulting judgements are bound to *specific situations* by theoretical knowledge (Shalem, 2014). Simply put, an assumption of this research is that professional knowledge draws on, is an amalgamation of, and emerges from, both theoretical knowledge and practical knowledge. Professional knowledge enables the teacher to reason about his or her teaching, and, in turn, make professional judgements which inform action. Therefore, because professional knowledge, pedagogical reasoning and judgement are contextually embedded, a contextually-bounded artefact of practice had to be provided as an impetus for the professional knowledge and pedagogical reasoning of the participants to be exposed and recorded. A video was thus used to create a situation of reduced complexity. I will elaborate on this next.

Using a recorded lesson as an artefact of practice

According to Shulman (2004), it is easier to reflect on someone else's teaching than on your own. Additionally, video cases, unlike a script of a lesson, for example, capture the rich complexity (Shulman, 2004) of a classroom-based lesson while the viewer is in a situation of reduced complexity (Grossman, 2011). The situation is one of reduced complexity when the viewer does not have to manage learners, deal with external interruptions like whole-school announcements, and so on. A view of a video of a lesson is actually in an ideal position: the video captures the outward, intricate dealings of the teacher with the learner (in essence, the *outcome* of the videoed teacher's

pedagogical reasoning and professional judgement and knowledge), without the viewer having to consider the material elements of teaching (Morrow, 1996), as they would have to if they were reflecting on their own practice. The video case then allows the researcher to draw out the viewer's thoughts on the teaching in the lesson, and not on the peripheral details that the viewer would have to consider and account for if they were teaching the lesson themselves. Therefore, I chose to provide the participants with a context on which they were invited to engage in pedagogical reasoning.

Using a videocase to "[bridge] theory and practice" has been shown to be an effective way for [pre-service] teachers to "[apply] theoretical, conceptual, and pedagogical knowledge about teaching and learning to real-world classrooms and explicating such knowledge embedded in practice" (Beck, King, & Marshall, 2002, p. 346). Furthermore, videos provide a "vicarious experience" of the teaching (Wong, Yung, Cheng, Lam, & Hodson, 2006), enabling participants to feel relatively embedded in an authentic context while thinking about teaching. Additionally, utilising the same video case for every participant means that I can compare the comments made by each participant because they are made in relation to the exact same artefact.

The artefact: A video of a lesson taught by Ms Rebecca Mdluli

The artefact of practice that was used in this study was a video of a lesson taught by a third-year pre-service teacher (Ms Rebecca Mdluli)[43] from the Wits School of Education. She was teaching a Social Science lesson on climactic regions of the world. The lesson had a specific focus on interpreting precipitation and temperature graphs and was presented to Grade Eight learners (typically thirteen to fourteen-year olds) in an inner-city school in Hillbrow, Johannesburg. The school is a private school catering to children who live in the areas around Hillbrow, such as Joubert Park and Braamfontein. The children are generally from inner-city, emerging middle-class families. Many of the children are foreign nationals. There are exclusively Black African children at the school, who speak a variety of South African and African languages,

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[43] Not her real name.

although the medium of instruction in the school is English. The school has limited teaching and learning resources,[44] with about thirty-five to forty learners in each class. In the videotaped lesson, however, twenty-five learners were present.

I specifically requested that Ms Mdluli taught a *conceptual* lesson (as opposed to a practical one) in order for the video to capture how she mediated the concepts to learners. I felt such a lesson would be more generative in allowing participants to evaluate and comment on her teaching. Furthermore, I chose to video a Grade Eight lesson because the content being taught would be more likely to be understood by the participants (a Grade Twelve lesson, for example, may have been less accessible to participants due to the more complex and detailed nature of the content being taught during the lesson). I wanted the participants to be able to access the content knowledge in order to make professional judgements on the teaching in the artefact of practice, because the professional judgements necessitate an amalgamated and careful consideration of the teacher's knowledge of content, pedagogy and learners (PCK).

In terms of the content of the video, the lesson was an hour long,[45] focusing on what climate is, and how to read and interpret graphs showing climate in different regions of the world. Ms Mdluli began by ensuring that all of the learners had the hand-outs required for the lesson. She then introduced the lesson by asking the learners what their understanding of climate is. She drew primarily from the textbook from which the hand-outs came in order to teach the lesson, asking learners to read extracts from the hand-outs and then explaining them in her own words. Ms Mdluli utilised a significant number of questions in order to encourage learner participation in the lesson. After the lesson instruction, she began interpreting the graphs with the class as a whole, with each learner looking at their own hand-outs. She would ask learners to volunteer to

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[44] The classroom had a chalkboard and one textbook for the teacher to use. Every child had a desk and chair at which to sit. Every child also seemed to have his or her own stationery, such as pens, pencils and rulers.

[45] Although the lesson was an hour long, the video is about forty minutes long, as I chose to edit out the time when learners worked on the activity with no interaction with Rebecca. Although the lack of interaction may be significant, I chose to edit this out due to time constraints but did alert the participants in the study to the omission.

answer questions about the graph, such as "what is the reading for July in terms of precipitation?" After that, she gave the learners a set of questions to answer in pairs in their exercise books and allocated any unanswered questions for homework. Please see page 151 for a discussion of the ethical implications of filming learners and Ms Mdluli, as well the steps that I took to mitigate ill-effects on the learners and Ms Mdluli.

5.3 Sources of data arising from pedagogical reasoning on the video of the lesson

When thinking about a lesson, teachers need to decide what is relevant for consideration in making that discrimination and what is not. Teachers *select* their areas of focus and utilise their professional knowledge base to make informed decisions about their teaching (Shalem, 2014). Selection is a rule of the inner logic of pedagogic practice (Sadovnik, 1995).[46] The boundaries of selection may be more-or-less open, depending on the purpose of the knowledge to be learned. Simply put, when the boundaries of selection are opened, teachers have greater liberty to choose what content to teach; when the boundaries are solidified, teachers are less free to choose the content of their lessons (Hugo, 2013; Bernstein, 2004). Importantly, the selection of knowledge is a very powerful indicator of "what knowledge is of most worth" (Hugo, 2013, p. 57), as is indicated by the struggles for legitimacy in all three fields[47] of the epistemic-pedagogic device (Maton, 2014g). In the epistemic-pedagogic device, knowledge is selected in the field of recontextualisation to become pedagogic discourse. The knowledge that is selected is therefore a reflection of the dominant ideologies in the field. When the boundaries of selection are opened, the knowledge that is selected is of most worth to the teacher or learners. When they are solidified, the knowledge that is selected in and reproduced in the field of recontextualisation may be of most worth to the ideological power (the state, capitalists, ruling class, and so on) who leverage knowledge as a means of social domination[48].

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[46] The other two rules are 'hierarchy' and 'criteria' (Sadovnik, 1995).
[47] These three fields are the field of production, the field of recontextualisation, and the field of reproduction (Maton, 2014g).
[48] See Maton (2014g) for a discussion of the epistemic-pedagogic device and how selection boundaries reflect struggles for legitimacy.

In this research, I am not looking at knowledge at the level of the curriculum, as Bernstein (2004) and Hugo (2013) do. I am looking at selections at the level of the teacher. I am transferring Bernstein and Hugo's conceptual tools of open and solid selection[49] to the context of pedagogical reasoning in order to study what the participants in this study believed were "worthy of [their] attention for *that* educational situation" (Shalem, 2014, p. 94, emphasis in the original). As a result, I decided to vary the boundaries of selection at different times during the data collection. Although the participants were asked to reflect on the same artefact of practice during all of the data collection stages, they were required to engage with their thoughts on the artefact in a different way each time, as reflected in Table 5.3-1:

Table 5.3-1: Overview of the stages of data collection and differing selection boundaries during the research

Stage of Data Collection	Data gleaned	Nature of the boundaries of selection
1	Individual, written reflections on the artefact of practice	Completely open
2	Individual filling in of the assessment rubric	Completely solid
	Individual reflections on the choices in the rubric	Solid foci but open rationales
3	Group discussion of the video	Open but constrained by directives from peers
	Group brainstorm on advice for Ms Mdluli	Open but constrained by directives from peers and previous discussion

The data was collected in three different but connected ways, namely, unguided written reflection, individual, semi-structured interview, and semi-structured focus-group interview. A strategy to enhance design validity, according to McMillan and Schumacher (2010), is to have multiple sources and a number of kinds of data in the study. They advocate the use of "one central method" (p. 331) of data collection, which, in this case, is the interview, with a number of variations to the central method in order to permit triangulation of data. The triangulation of data is "the use of two or more methods of data collection in the study of some aspect of human behaviour", in order

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[49] Bernstein, in his code theory, described the notions of 'classification' and 'framing'. Classification describes the degree of boundary strength and insulation between contents. Framing describes the degree of control that teachers and learners have over what may and may not be taught. Selection criteria is associated with framing. In this research, then, I have solidified (strengthened) and opened (weakened) the framing of the interviews at strategic points, as outlined in Table 5.3-1.

to "attempt to map out, or explain more fully, the richness and complexity of human behaviour by studying it from more than one standpoint" (Cohen, et al., 2007, p. 141). This study made use of a number of sources of data in order to facilitate effective triangulation of data. While triangulation is a strategy in data collection to promote reliable results, it opens the possibility of that challenge that the various sources of data do not agree with each other, or that they show different things (Delport & Fouché, 2011). I, as the researcher, acknowldged this risk, but decided to collect various sources of data despite the potential analytic challenges because my research design looks for overall trends in the data, and not particularities within the data set.

Reflections on the video

This section will discuss the nature of the methods used to elicit responses of participants in this study.

Episodes of pedagogical reasoning (EPR's)

An important and very useful concept that was used in the data analysis of this study was Horn's (2010) notion of 'episodes of pedagogical reasoning', henceforth, EPRs. Horn describes EPRs as:

> … units of teacher-to-teacher talk in which teachers exhibit their reasoning about an issue in their practice … moments in teachers' interaction when they describe issues in, or raise questions about, teaching practice, and these descriptions are accompanied by some elaboration of reasons, explanations, or justifications (p. 237)

Horn goes on to say that EPRs can be single utterances, such as 'I really don't think that the lesson went well today,' or "… multiparty co-constructions over many turns of talk" (p. 237). She defines the locating rule for EPRs as the change in topic that the teacher is discussing. In the case of this study, the beginning and end of an EPR is quite clearly signalled via my change in question while interviewing the participant or participants.

Individual, open selection boundary reflections

The only directive given to participants at this stage was to write down what they thought about Ms Mdluli's lesson preparation and teaching. By giving such vague instructions, the selection boundaries were opened for the participants. They would thus have to select their focus in their reflection, thereby indicating what aspects of the teaching and lesson preparation they considered to be important and (by virtue of being excluded), less important. I decided to ask the participants to write their reflections because writing enables clarity of thought (Langer & Applebee, 1987). Langer and Applebee argue that "the permanence of the written word, [allows] the writer to rethink and revise over an extended period" and that because writing is active in nature, it requires active thought about the "implications entailed within otherwise unexamined assumptions" (*ibid.*, p. 12–13). A writing task was thus a useful way to capture the participants' thoughts and decisions. In reality, most of the participants did not actually do the written reflection, and so I was unable to use this data source. I thought it prudent to include the rationale and possibilities for the data to be gleaned from this data source in this discussion in the promotion of transparent and honest research practices.

Individual, more solid selection boundary reflections

When solidifying the selection boundaries, teachers are told what to focus on in their teaching. Similarly, during this research, participants were very strongly guided in terms of what aspects of Ms Mdluli's teaching they should focus on. An assessment rubric[50] (adapted from Rusznyak & Walton, 2011) was given to participants. A rubric, which is "an assessment tool that lists the criteria for a piece of work or what counts…" (Andrade, 2005, p. 27), guides the assessor in terms of what they should consider and make judgements on; it tells the assessor what they should reflect on and, implicitly, what they should not focus on. As such, the rubric guided the considerations of the participant in a much stronger way, thereby solidifying the boundaries of selection for the participant. While the assessment rubric was not actually used to glean data, it was used to structure the interviews.

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[50] See Appendix C2 for this research tool.

The rubric, which was originally developed by Professors Lee Rusznyak and Elizabeth Walton of the Wits School of Education, covered issues including, but not limited to, classroom management, planning, content knowledge and communication ability. These criteria were based on Shulman's Model of Pedagogical Action and Reasoning (Shulman, 1987a).[51] In the assessment rubric, these six processes were fleshed out so as to suit a practicum context. I then adapted this rubric for the purposes of the research, excluding the criteria relating to supervisor or tutor feedback on the lesson, for example. The participants scored Ms Mdluli on a four-point scale: not yet coping, emerging teaching competence, developing skilled teaching competence, and thoughtful, insightful teaching competence. The scale was purposefully designed to have an even number of points instead of an odd number. This was to discourage the selection of a 'middle category' for criteria on which the participant is unclear or vague.

Semi-structured interviews about the video

Interviews are verbal questionnaires, where participants answer questions constructed by the researcher (McMillan & Schumacher, 2010). This research utilised a semi-structured interview approach, meaning that the interview questions are "fairly structured" but allow for some deviation by the interviewer (*ibid.*, p. 490) to allow for further clarification and probing of the participants' responses. A major advantage of using interviews for this study is that the responses of the participants can be clarified, proofed and followed up by the researcher (*ibid*). Furthermore, interviews provide opportunities for personalisation (or "response-keying") because the interview is conducted in real-time, face-to-face situations (Cohen, et al., 2007, p. 352). Other advantages include a high rate of return (as opposed to a questionnaire) and it requires no literacy skill on the part of the participant (*ibid.*).

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[51] The six processes in Shulman's Model of Pedagogical Reasoning and Action are:
 1. Comprehension of the topic to be taught,
 2. Transformation of the knowledge and materials,
 3. Instruction: the actual teaching of the topic,
 4. Evaluation of the learning,
 5. Reflection on the lesson, resulting in
 6. New comprehension of the topic, teaching and the learners.

Each interview session began with a brief, very general reflection on Ms Mdluli's teaching and lesson preparation as a means of 'breaking the ice' and prompting the participant to think actively about the artefact of practice. Then, participants were asked to fill in the aforementioned assessment rubric. The interview was then based on their responses to the assessment rubric, and they were asked to account for their choices on the rubric. Two questions were asked for each item in the rubric: *why did you choose this level?* And *why do you say so / where did you learn that this is an important aspect of good teaching*? These questions, while keeping the boundaries of selection relatively solid, were more open than the rubric task because the participants could choose what they wanted to reflect on and describe as their knowledge base for their judgement. So, while the boundaries of their selection for the judgement were solidified in filling in the rubric, the boundaries for the selection of their rationales for their judgements were opened somewhat during the individual interviews.[52]

Focus group interviews about issues of interest to the participants in the video

When teachers work together in communities of practice, the boundaries of selection are opened up, but constrained by the interests of others. This kind of engagement means that teachers may be exposed to ideas and issues that they had not considered to be important before, if they had been working alone (Clark & Meloy, 1990). Pedagogical reasoning can happen in community, drawing on a larger knowledge base than that of the individual teacher, particularly in the planning and evaluation phases of teaching. As such, participants were asked to discuss the artefact of practice in a group, with colleagues. These colleagues were their peers, who had taken the same route to become a teacher as they had. They were asked to structure their conversation using a STOP-START-CONTINUE[53] method, where they focused their comments around what Rebecca should stop doing in her teaching, what they thought she should start doing in her teaching, and what she should continue doing. 'Stop' and 'start' comments were often linked together, such as, "… she should stop assuming that the learners understand everything from the beginning ... So just maybe pre-empting what they might not know…" (taken from the PGCE focus group interview).

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[52] See Appendix B for the individual interview schedule.
[53] I am grateful to my supervisor for suggesting that I use the STOP-START-CONTINUE model.

They then consolidated their conversation by brainstorming advice that they would give to Ms Mdluli. They were asked to write this down. They were now further constrained by the conversation that they had just had with one another. They had to then further narrow their advice to the five most important points to Ms Mdluli, making more selections in terms of what they considered most important for effective practice, and what was less important for effective practice.[54]

5.4 Research variables

To reiterate, pedagogical reasoning and professional judgement, it has been argued, cannot happen outside of a context (Shalem, 2014; Shay, 2013), and without a knowledge base on which to draw (Shulman, 1987a; Shulman, 1986). In South Africa, as has been established, there are many routes to become a teacher, all with different affordances and challenges. Due to their differences in purpose and duration, these routes weight, sequence and pace the different sources of the knowledge base of teaching.

This study looks specifically at two of the most popular routes to becoming a teacher, the BEd and the PGCE. It also looks at the two most popular approaches to these ITE qualifications, namely, immersed in practice (when pre-service teachers study for their qualification on a part-time basis or in some sort of learnership programme, spending most of their time in a classroom and not in an institution of higher learning), and not immersed in practice (when pre-service teachers study for their qualification on a full-time basis, spending most of their time in an institution of higher learning and not in the classroom). The ITE programme and the relative immersion in practice of the participants were therefore the variables in the research.

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[54] Please see Appendix C4 for the focus group interview schedule.
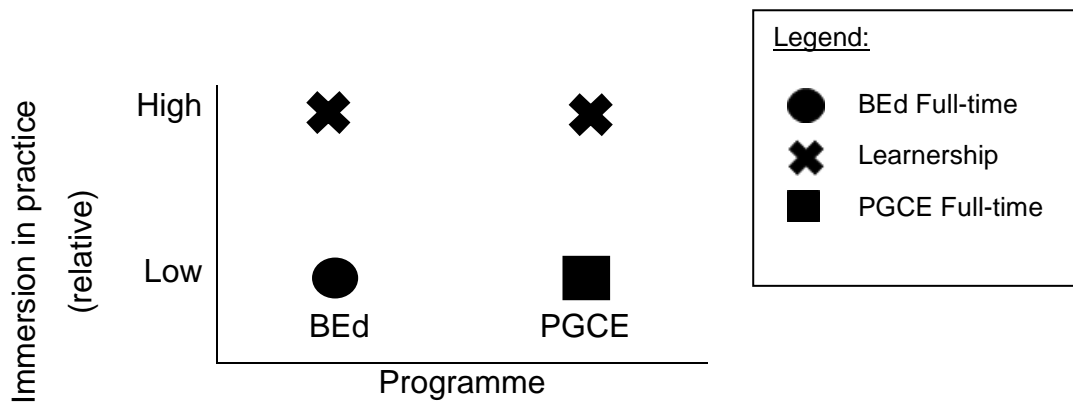
Figure 5.4-1: Interaction of the variables in this study

This diagram shows how the variables interact with one another. The BEd may be undertaken on a full-time basis, or on a part-time basis in conjunction with a learnership programme. The PGCE can also be undertaken on a full-time basis, or on a part-time basis in partnership with a learnership. What the diagram highlights is that the learnership route can see pre-service teachers studying a BEd or a PGCE. These two variables allowed me to make comparisons across the ITE programmes, and across the nature of study. The variables delineated the participant groupings, which were BEd (full-time), PGCE (full-time), and BEd and PGCE (part-time) pre-service teachers. These groupings, in turn, determined the participant selection criteria and processes.

While the *coursework* to be learned during ITE is quite tightly regulated by the MRTEQ, the extent to which pre-service teachers from different ITE programme are immersed in practice varies. The following table zooms in to the immersion in sites of practice aspect of Figure 5.4-1:

Table 5.4-1: Comparison of amounts of times spent in sites of practice by cohort[55]

<u>Learnership:</u>	A full school day, for the entire school year, times however many years they take to complete their ITE qualification + apprenticeship of observation	100%
<u>BEd 4:</u>	Six weeks per year, for four years = 24 weeks + apprenticeship of observation	15%
<u>PGCE:</u>	Nine weeks per year = 9 weeks + apprenticeship of observation	23%

Learnership participants spend the most time in schools, while the final year BEd participants spend the least amount of time in the classroom. I would argue however that the final year BEd participants spend more time in the classroom than PGCE participants, as the PGCE participants spend 9 weeks in classrooms in one year, while the BEds spend 24 weeks over four years engaging in practical teaching, in different contexts.

5.5 Participant selection

Participant selection in research refers to the selecting of a portion of a population as a representation of that population (Strydom, 2005), in order to conduct research in a more manageable way. After all, in many instances, it is simply impossible to make contact with an entire population! Consequently, the quality of a research project is highly dependent on the participant selection strategy or strategies employed by the researcher (Cohen, et al., 2007). As such, it is important to be thoughtful, deliberate and fully transparent about the participant selection strategies employed in a study, as well as about the rationale for these design choices. This section of the chapter will justify and describe the participant selection choices made during this study. Two kinds of participant selection were utilised, namely purposive and snowball participant selection.

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[55] These percentages were obtained by taking the number of weeks of practicum prescribed by MRTEQ (Department of Higher Education and Training, 2015) and dividing it by the number of teaching weeks in a year (about 40 according to the DBE).

Purposive participant selection

When a researcher is studying a very specific phenomenon, he or she requires cases or participants who are able to supply relevant information about that phenomenon. A researcher would therefore need to select cases that would be able to contribute positively to the study, as "[t]here is little benefit in seeking a random sample when most of the random sample may be largely ignorant of particular issues and unable to comment on matters of interest to the researcher" (Cohen, et al., 2007, p. 115). Purposive participant selection allows a researcher to use his or her judgement to recruit certain participants from a population of those who have the most suitable characteristics for the research (Strydom, 2005). While this may be seen as problematic in terms of the representativeness of the sample, as well as the generalisability of the data, Cohen et al. argue that data gleaned from purposively selected samples do not intend to be generalisable: "it is deliberately and unashamedly selective and biased" (2007, p. 115) to fulfil the mandate of finding suitably qualified research participants to make up the sample.

In the present study, because the pedagogical reasoning of nearly qualified teachers in specific initial teacher education programmes was the object of study, participants who fitted specific criteria were purposively selected to participate in the study. Three criteria formed the requirements for their selection. First, the participants needed to have studied or be studying either a BEd or a PGCE. Secondly, they needed to be either a full-time pre-service teacher, or a part-time pre-service teacher working in some kind of learnership position. Thirdly, they needed to be studying or teaching Geography, Social Science or Natural Science because of the subject-specific nature of the artefact of practice. If pedagogical reasoning is based on the knowledge base for teaching (as is argued by Morrow (2007), Hoban (2005), and Shulman (1986), among others), with content knowledge constituting part of the knowledge base, it would be essential for the participants to have the requisite *subject* knowledge[56] from which their own pedagogical thinking could emerge and be studied in the proposed research. In order for the participants to focus on the teaching that is done by Ms Mdluli in the artefact of practice, I required prospective participants to have a good knowledge

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[56] One of Shulman's (1987a) categories of the knowledge base of teaching.

of the concepts that will be taught in the artefact. Furthermore, it is important to remember that "it is only in analytical mode that we can distinguish between content and methods; *in practice, they are intertwined*" (Morrow, 1999, p. 126–127, emphasis added). So, with this in mind, it becomes clearer why it is important that the participants have the requisite content knowledge in order to detangle the content and methods, and analyse them.[57] The full-time BEd participants were randomly selected from a class list and contacted telephonically to invite them to be a part of the research, on an opportunistic basis[58]. A few part-time BEd and PGCE pre-service teachers were selected by an administrator[59] at the organisation which places them in learnership programmes, and I randomly selected names from the list that the administrator sent me and contacted them telephonically.

Snowball participant selection

When a researcher has difficulty gaining access to a population, snowball participant selection is an effective strategy to approach the required participants (Cohen, at al., 2007). Snowball participant selection, like a snowball rolling down the hill gathering snow and getting bigger as it gains momentum, begins with the researcher approaching one potential participant, and asking them to find more participants who have similar characteristics to themselves (*ibid.*). I was not well acquainted with the PGCE group at the Wits School of Education and was having difficulty making contact with the cohort. As a result, I decided to make contact with an acquaintance of mine who was majoring in Social Science and asked her to invite two colleagues to be a part of the research.

5.6 Participants in this study

The study participants were made up of three 'cohorts', namely the fourth year BEd participants, the final year PGCE participants, and the final year learnership participants. These participants were all studying either Social Science, Natural Science, or Geography as a teaching subject. Most of the participants were studying

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[57] There were logistical criteria for selection too. It was preferred that participants were located in Gauteng, and that they were going to be available for all three steps of the research process.
[58] In other words, I randomly chose names and contacted them until I had enough participants.
[59] Please see Appendix D1.2 for the permission letter that was sent to the organization.

to be Further Education and Training (Grade 10 to 12) specialist teachers, however their phase specialization was not of any consequence to the study. This is because pedagogical reasoning is not phase specific. All teachers in all phases need to be able to engage in well-grounded pedagogical reasoning in practice.

Diversity within the sample[60]

This research study needed to consider the representativeness of a sample group in relation to the population being studied (Cohen, et al., 2007) in order to make a genuine and valid knowledge claim. The demographics of the sample of ten participants needed to be compared to those of the population, being the candidates in South African ITE institutions (whether universities or colleges). The vast majority of the participants in this study were female, with 2 of the 10 participants being male, which I would argue is in keeping with the prevailing gender bias in teacher education on a national level. 5 of the participants in this study were black, and 5 were white. These were the only two races represented by the sample. While I acknowledge that this is not representative of the national population (where black South Africans account for about 80% of the population, white people about 10% and mixed-race and Indian people about 10%), I believe that it is still a diverse sample fit for the purposes of this investigation. This was not a biographical study, and it did not look for correlation or causation between participants' educational or personal backgrounds and their engagement in pedagogical reasoning. The race or gender of the participants is not, therefore, identified as a major contributing factor to their pedagogical reasoning emphases and knowledge base construction because pedagogical reasoning is not determined by race or gender, and is a facet of professional teacher practice. Still, one must bear in mind that given the historical context of South Africa, pedagogical reasoning is still not a developed attribute of professional teaching practice across the board, where teaching from the textbook, for example, is common practice (van Staden & Howie, 2010). This research acknowledges and interrogates the role of socialisation in the development of pedagogical reasoning, by analysing the interactional relations of the participants' EPRs[61].

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[60] Please see Appendix B for more biographical details about the participants.
[61] See Section 4.3 for the translation device for interactional relations.

My role as the researcher

At the time of conducting this research, I was a tutor to first year pre-service teachers at the Wits School of Education. I tutored a core course, called Becoming a Teacher (BaT), which is an introductory course in which ITE candidates engage during their first year at the Wits School of Education. It teaches the basic aspects of pedagogy, including PCK (Shulman, 1987a), scaffolding, Bloom's Taxonomy (Bloom, 1956) and the selection and usage of resources in teaching. Thus, I was in a relatively authoritative role on campus. However, I had never had any contact with PGCE pre-service teachers, or the fourth year BEd cohort from which the sample for this study was drawn (I was in the fourth year of my own BEd when they were in first year). The learnership participants were total strangers to me as they did not hail from the Wits School of Education.

Having taught on a course which, inter alia, aims to begin the development of a cultivated and trained gaze in first year pre-service teachers, my identity as a researcher is somewhat implicated in the research. The area of professional teacher knowledge and practice is my area of focus within the broader teacher education field. In this way, I acknowledge that my identity as a researcher is somewhat intertwined with the research and would have had an impact on the interviews that I conducted. I consider my interest and specialisation in pedagogical reasoning and professional teacher practice as part of my researcher identity to have been enriching, rather than a challenge to the data generation process. I was in a much better position to help participants to tease out their pedagogical reasoning processes, and I believe that the participants may not have come to the conclusions that they did in the interviews without careful guidance through their own thoughts. I was in a much better position to draw out their tacit and often unexamined pedagogical reasoning.

5.7 Data coding and analysis

The data that were yielded by this study was qualitative. To gain insight into emerging trends, I needed to develop some sort of tool that would help me to code the data and

make legitimate comparisons between participants' responses. As will be elaborated on next, I identified the need to develop what Maton (2016a) calls a 'translation device'. The translation devices then gave me the codes that were used to analyse the participants' EPRs.

Development of translation devices

While I have described the development of the four translation devices used in this study in Chapter 4, I will briefly recap them here. I used three dimensions from LCT, namely the Specialization Dimension, Social Dimension, and Semantics Dimension. I developed a translation device for epistemic and social relations which enabled me to analyse the kinds of claims that participants made (axiological or knowledge claims) by elucidating whether they were foregrounding the epistemic or social relations in their EPRs. This translation device can be found on page 97. I also developed a translation device for the subjective and interaction relations, which allowed me to analyse the bases for legitimation of the participants' EPRs. This can be found on page 108. The translation device for the semantic gravity, which can be found on page 115 allowed me to analyse the data in terms of the context-embeddedness and levels of abstraction, while the semantic density translation device (on page 119) enabled analysis of the condensation of meaning and complexity in the language and terminology used by the participants.

Selection of key EPRs

While all the data were analysed using the translation devices that were developed, five key EPRs were selected in order to explain exactly how the findings came to be, that is, how the data were coded. Instead of pulling examples from all of the data to present the findings, I would argue that the use of five key EPRs to present the data analysis was more effective as the objective of this research is to describe the *ways* in which differently qualified teachers reason. As such, the various codes (emanating from the translation devices) build up a picture of what the particular participant grouping's EPRs look like. Each code therefore described a feature of the data. In order to effectively show how the picture of the 'typical' BEd, Learnership, or PGCE EPR looked, and to show how I coded the data, I decided to make use of five key

EPRs so that the reader has insight into how the conclusions about each EPR were drawn.

I went through a kind of process of elimination when selecting the key EPRs. First, I isolated the EPRs that were closely aligned to the trends in the data. For example, if I found, through the data analysis, that one group tended to begin their EPRs with a judgement, I isolated the EPRs that matched this description. Naturally, there were many cases where the EPRs did not match every trend exactly. I also isolated these cases if they were generally similar to the trends that I had identified. Second, from that pool of EPRs that matched the trends in the data, I isolated the EPRs that *clearly* showed the trends that I would be describing in the findings chapters. This was to make sure that the reader, who would be seeing the key examples for the first time, had the most insight into the trends that I was describing in the data. Finally, selecting from the further refined pool of EPRs, I tried to select five EPRs so that each participant's 'voice' could be heard by trying to have at least one EPR from each participant. Sometimes a participant's voice is included in more than one EPR (such as Laeticia, Tshepo, and Jenna). One of the five key EPRs for the BEd and PGCE groups is an EPR from the focus group discussion. I could not identify an EPR that matched my criteria in the Learnership's focus group discussion, so I did not include one in the key EPRs, as I did for the BEd's and PGCE's.

Coding method

I used MS Excel to code my data. Data were coded per EPR. An EPR was defined as an instance of pedagogical reasoning on one aspect of the teaching, as well as its accompanying reason, if one was given. So, for example, an EPR would end when a new topic was discussed, such as the participant's rationale for scoring Ms Mdluli for *another* aspect on the assessment rubric. In this way, the assessment rubric became the yardstick for the different units of analysis. Logistically, I used one 'sheet' per participant, and positioned the interviews down the left-hand side of the sheet. Codes were placed in the cells to the right of the participants' words. The codes were derived from the translation devices that were developed in the Conceptual Framework chapter. :

Figure 5.7-1 illustrates an example of how I laid the data out in order to code it:

Figure 5.7-1 Use of MS Excel to code data

Conventions used in the description of the data

Various formatting conventions were established in order to denote whose voice was being reported in the writing of this thesis. The use of italics indicates a direct quote from an individual interview or focus group. Square brackets[62] in direct quotes indicate the adjustment of the words used by a participant for the purposes of clarity or to add extra information to assist the reader to make sense of the quote. In all cases, however, I have attempted to preserve the original integrity of the text. More specific conventions have been discussed in the sub-section to which they refer.

When referring to a specific EPR in the Key EPRs, I used the following shorthand:

EPR X0

where,

- X refers to the participant group, given by 'B' for BEd, 'P' for PGCE, and 'L' for Learnership participants, and
- 0 refers to the Key EPR number (1 to 5).

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[62] These have been kept to a minimum to preserve the integrity of the data.

An example of this shorthand, then, is EPR B1, which refers to the first Key EPR for the BEd participant group.

Developing a 'picture' of each EPR

The translation devices allowed me to code every EPR for every research participant along the relative strengths of epistemic and social relations, semantic gravity and density, and interactional relations. This meant that I could develop a 'picture' of the nature of the pedagogical reasoning in each EPR, building a profile of what a typical BEd, PGCE, and Learnership EPR looks like. The translation devices showed the reader exactly *why* an EPR was coded as it was: why a particular EPR was coded and plotted as having SG+, SD-, for example. The use of translation devices made the data coding and analysis process much more transparent. It allowed me to visualise 'outlier' comments, as well as trends within the data. As such, the coding of a single EPR looked like Figure 5.7-2[63]:

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[63] I have included one EPR from each participant group so that the reader can see how the different data were coded.

Due to her intro – the notes are handed out and she mentioned the headings on each of the worksheets or hand-outs and then said, 'so that's what we are going to do today'. There was no clear introduction: "Today we're doing climate. We are going to be looking at temperature and rainfall which forms part of climate." Just like a simple sentence because that would… I don't think the learners knew whether they were concentrating on temperature, climate or rainfall and then there were the different types of climate.

No, not clear what the main point was. Even if just simple heading on the board so that drew their focus and they knew this is our main topic and there is a whole lot that falls under that.

We've done it in our life sciences methodology. So we've done the big ideas and then sub-ideas and seen how your key questions that you are going to ask and the key ideas that they should know should be your big ideas and then you get sub-ideas that would assist and they form a big part of your big ideas and then you get just extra information that fills the gaps. So that would be stuff that you might use in your examples that will assist in learning but not necessarily something that you would test them on. Just in terms of what they should know by the end of the lesson, things that will assist them in knowing.

Negatively charged

Judgement grounded in the lesson in the video (SG +++)

Judgement: There was no clear structuring of knowledge

Knowledge claim (ER +): Knowledge needs to be structured for learners to understand

Simple-formal language (SD -)

Negatively charged

Abstracts to a principle (SG -)

Specialised language (SD -)

Basis for legitimation: Theory (IR -)

Figure 5.7-2: Coding and interpretation of EPR B2

The coding of a PGCE EPR looked like Figure 5.7-3:

*I'm one of those teachers that I like to develop resources so for me ==just using the worksheet like **she** did is not good enough==. **She** only gave them hand-outs which is a photocopy of her textbook and **she** used the board. **She** did make some attempt, but **she** didn't really go beyond that, **she** didn't give them other sources. ==**She** didn't develop her own.==*

Negatively charged

Judgement grounded in the context of the lesson (SG +++)

Judgement: It is not acceptable to only use the prescribed text to support teaching and learning

Axiological claim (SR +) (implicit): A good teacher should take the initiative to develop further teaching and learning support materials

From my own teaching. The one lesson I stuck to what the school wanted me to stick to and thought <mark style="background:red">this was going really bad</mark> *because I am* <mark style="background:red">not going beyond what the kids want</mark> *and what they need. I am giving them a basic definition but what if they ask me a question related to that, I've had that before and I've had to say* <mark style="background:red">"I have no idea"</mark> *and then I would go home, look at Google or another textbook and it's there. It is important to use other sources.*

Negatively charged

Simple-informal language (SD - -)

Simple-formal language (SD -)

Basis for legitimation: Reflection on own practice (IR + +)

Figure 5.7-3: Coding and interpretation of EPR P4

A Learnership EPR was coded as per Figure 5.7-4:

She used the textbook more and she used only the definitions and the words and whatever appeared from the textbook. — Negatively charged

Judgement: Her content knowledge was insufficient

Simple language

What is in the textbook is what learners just need to know. — Knowledge claim (ER +) (explicit): The textbook provides only what the learners need to learn, and no more

Simple language

Although she made printouts they were from the textbook so that learners can progress with her through the lesson, there wasn't anything extra that could spice up the lesson and the knowledge and understanding of content was limited to what the learners should know. — Negatively charged

Judgement: Her lesson was boring

Axiological claim (SR +) (implicit): A teacher should do further research so that she can present a lesson that is not boring for learners

Judgement grounded in context of the lesson (SG +++)

Simple language

In financial maths learners just need to know compound and simple interest – they need to know all those formulae, but the question why is very important to be answered. It speaks to why we are teaching in the first place. — Context for basis of legitimation

As a teacher I felt that they needed to know more about what I'm teaching – I need to know more about how is it applicable in real life, in the world of business how is it used and why is it used so it keeps the lesson interesting. — Basis of legitimation: Reflection on own practice (IR + +)

Simple language

Figure 5.7-4: Coding and interpretation of EPR L1

5.8 Trustworthiness: ethical considerations, reliability and validity

Ethical clearance was granted by the Ethics Committee in Education for the Faculty of Humanities.[64] Ethics often present a grey area with various perspectives dominating at various times. Heavyweight philosophers like John Stuart Mill, Max Weber, and the legions of contributors to the Feminist movement, all brought new light to ethics and ethical research through the ages. This research has ascribed to the guidelines that are set out by Christians (2000) when he describes the 'code of ethics' for social sciences. He says that these ethical guidelines for social science research are characterised by the overlapping of numerous perspectives on ethics through history. These four principles of ethical research are:

a) Informed consent: "research [participants] have the right to be informed about the nature and consequences of [studies] in which they are involved" (Christians, 2000, p. 138).

b) The opposition to deception: although it is difficult to define an unambiguous meaning of this, according to Christians, as far as possible, researchers should do their utmost to keep the research process transparent at all times.[65]

c) Privacy and confidentiality: the identities and research locations must be safeguarded, and all possible measures should be taken to ensure this. As Reiss (1979) claims, "[t]he single most likely source of harm in social science inquiry is the disclosure of private knowledge considered damaging by [participants]" (as cited in Christians, 2000, p. 139)

d) Accuracy: the data gleaned from the research must be accurate, and devoid of "[f]abrications, fraudulent materials, omissions, and contrivances" (*ibid.*, p. 140), which speaks to the requirement to avoid deception. This, I believe, includes considerations of validity and reliability of data.

I will now describe how I addressed each of these principles of ethical research, as well as other salient considerations when it came to conducting this project.

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[64] Protocol number **2014ECE53M**.

[65] In an interesting discussion, Christians does concede that in some kinds of research, for example psychological or medical research, deception is an integral part of the study. The present research, however, is in the human and social sciences domain, so the research process was designed to be (and remained) fully transparent.

Informed consent

Informed consent can be described as making the research process fully transparent to potential research participants, including "the procedures which will be followed during the investigation, [as well as] the possible advantages, disadvantages and dangers to which respondents may be exposed" (Strydom, 2005, p. 59). This section will describe who was invited to be a part of this research, and how their informed consent was gained.

Participants in the video (artefact of practice)

This research was unique in that there were more than one set of participants. The actual research participants who were interviewed and viewed the video were the focus of the study, but in order to facilitate the research process, a number of other, more 'indirect' participants took part in the study. The pre-service teacher, Ms Rebecca Mdluli, whose lesson was filmed to form the artefact of practice for this study, was a key role-player in the development of the research process. Additionally, due to the fact that the video was being filmed in a real-life teaching and learning situation, the school and its learners also became participants in the research. Before any data collection processes commenced, including interviews, focus groups or individual reflections on the video, informed consent was obtained from every participant. I will consider each of the groups of participants in turn.

Ms Mdluli was invited to have her teaching filmed.[66] She was made aware that a) her participation in this research was entirely voluntary, b) she could withdraw from having her lesson filmed at any time, c) there would be no penalties or repercussions if she did decide to withdraw from the study, and d) her identity would remain concealed as far as possible. Ms Mdluli was made fully aware that the research participants would see her face and hear her voice due to the nature of videotaping, but that they would not know her real name or that she is a pre-service teacher at the Wits School of Education. She was aware of the risk that the research participants may know her by sight but was comforted by the fact that the participants were exclusively final year

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[66]As is evidenced in Appendix D1.

pre-service teachers who would leave the institution shortly after watching the video. Ms Mdluli was also assured that the video would be destroyed within three to five years of the completion of the research. Only once she was made aware and approved of all of these, did I commence with the organising of a videographer and start to contact the school at which she was teaching to gain their informed consent.

The school at which Ms Mdluli was doing her practicum was also invited to participate in the study. The school principal was approached on behalf of the school and its management team. I explained to the school principal what the research was about, emphasising that the school or its learners was not the object of study, and that not even Ms Mdluli herself was the object of study, but that the *teaching and learning* in the classroom was the object of study. The full consent of the school principal was obtained before filming commenced,[67] and the class teacher also gave verbal consent to his classroom and learners being used in the video.

The learners in the class to be filmed were minors, and so informed consent from their parents was required. The parents were assured in the invitation letter that their children were not the object of the study, and that it was the teaching of Ms Mdluli that was being filmed. Parents were given the option to have their children seated behind the cameraman, so as to avoid being filmed at all. They were also promised that if they did choose for their children to sit in front of the camera, that the child's face would not be caught on camera and that only their voices would be captured if they spoke during the lesson. In addition, even though the learners were under the age of eighteen, they are considered able to make their own decisions and were given an informed consent sheet to fill in as well.[68] This informed consent form explained in simplified English (it was noted that none of the learners spoke English as a first language) that the learners could sit behind or in front of the videographer and that their faces would not be on camera. I also explained verbally to them before the videotaping commenced that their faces would be hidden and that no one would ever know their names or what school they went to at any time. In a few cases, the parents indicated on their informed

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[67]Please see Appendix A.
[68]Please see Appendix A.

consent sheets that they would like their children to sit behind the videographer, while the learner in question indicated that he or she would like to sit in front of the videographer. In cases like these, I upheld the decision of the parent and placed the child behind the camera. In the case where the learner did not return the informed consent form, I decided to place those learners at the very back of the classroom, so that they were far from the range of the camera lens. Only three learners out of the twenty-five[69] who were present for the lesson failed to return their informed consent forms.

Participants in the research

The direct participants in the research, the BEd, PGCE pre-service teachers and pre-service teachers who were immersed in practice, were also, like the more 'indirect' participants, informed of their rights as participants in a study (Appendix A). They were invited to take part in the research and reminded that participation in the study was entirely voluntary. This placed the power to participate and be forthcoming with information in their hands. They were informed that refusal to participate or withdrawal from the study at any time was their prerogative and that it would not disadvantage them in any way. Participants were also made fully aware of the fact that they would be audio-recorded during individual and focus-group interviews, and were given the option not to be recorded (in which case I would have taken notes as they spoke). Additionally, the research participants were made aware that no harm would come to them by participating in the research, and that their real names and identities would be concealed and protected at all times. Participants will also be granted access to the completed thesis.

Informed consent forms were provided to all parties involved in the research and a prerequisite for participation in the research. In this way, I feel that I have done my utmost to ensure that the participants understand the purpose and aims of the research, as well as their rights and the requirements of them as participants. It is noteworthy that I ensured that before commencing any of the three steps of the

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[69]The class had about forty learners in total, according to Ms Mdluli. However, the filming took place during the first two periods of the day, and many learners are often late for school.

research process with any of the participants, I always reminded them of their rights as a participant, and gave them the opportunity to ask questions about the research.

Opposition to deception

The endeavour to keep the purposes, aims and processes of research transparent seems to correlate very closely with the issue of informed consent, discussed previously. Both transparency and informed consent consider the importance of ensuring that all parties involved with the research are completely informed about and fully aware of the implications and commitments required by the research. In an attempt to ensure that all of the research processes were transparent, I constantly informed my research participants of why they were participating in the manner in which they did. For example, I made sure to show them the difference in support that they would be receiving at different stages of the research process and explained the reasons for this to them. I also tried my best to constantly assure them that it was not their individual characteristics that were the object of the study, but the characteristics of their cohort, so as to avert any feelings of being singled out.

Privacy and confidentiality

It is useful to begin by defining these terms, which are often used interchangeably. The right to privacy, according to Cohen and his colleagues is "the right not to take part in the research, not to answer questions, not to be interviewed […] and to engage in private behaviour in their own private place without fear of being observed" (2007, p. 64). But perhaps the most telling explanation that Cohen et al. give, is this: "[the right to privacy] is *freedom from* as well as *freedom for*" (*ibid.*, emphasis in the original). This tells us that privacy does not only protect the participant, but also liberates him or her. Confidentiality, on the other hand, implies that the data of the participant is handled in a way that does not reveal anything about them whatsoever (Strydom, 2005).

In an attempt to keep the identities of my participants concealed, only I knew their real names, and every item that would be made public (for example, the audio recordings

to be sent for transcription) referred to them by their pseudonym, which was decided on prior to the commencement of any interviews. Even in the focus group interviews, participants were given name tags with their pseudonyms so that their colleagues in the focus group interview could refer to them by their pseudonym in the discussion, in a further attempt to protect their identity.

A concern with the focus group format is the issue that there are a number of people who hear what an individual says, compromising the confidentiality of the conversations, individual views, and ideas of the participants in the focus group setting. I made my participants aware that I could not guarantee confidentiality in the focus group setting, but that I would strongly encourage all participants to keep the conversations arising from the focus group strictly confidential and not to share them with anyone[70]. In terms of privacy, I tried at all times to keep my communication with the participants to a minimum, making use of less invasive communication techniques, such as emailing and texting them, instead of phoning them, for example. I also did my utmost to only ask them biographical questions that were actually relevant to the present study, such as what their major and sub-major subject was and what undergraduate programme they studied. I did not ask them where they went to school, where they lived, their age, marital status, and so on, as these questions would have no bearing on their responses, and were not a variable being tested in the research.

Furthermore, the audiotaping of individuals may be seen as a violation of privacy (Strydom, 2005). For this reason, all of the participants in this study had the option of not being audio-recorded, which was offered to them both when signing their informed consent forms, as well as verbally, just before the audio recording commenced[71]. None of the participants declined, and all were willing to be audio-recorded. As a result of the participants being given pseudonyms for use during the entire research process, the information that the participants shared remained confidential, which is a key tool for preserving privacy (*ibid.*). Participants were made fully aware that they would not remain anonymous despite their responses and identities being treated as

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[70]Please see Appendices C3, C4, and D5.1.
[71] Please see Appendix D5.3.

confidential. According to Strydom (2005)[72], anonymity can only be guaranteed when not even the researcher knows the identities of the participants, which was not the case in the present study.

Accuracy

The issue of accuracy is, I think, one which is pivotal to the quality of research. Of course, there will always be the risk of human error or bias in the reporting, analysis and interpretation of the data, but I have taken proactive steps to minimise this risk. To ensure that the raw data reflects exactly what the participants have said in the interviews, I decided to audiotape each interview using sound recording software installed on an Apple iPad. The audio recording was set up to capture the voice of the participant(s) and myself during the individual and focus group interviews. In addition to this, I made use of professional transcribers in order to attempt to reduce the personal bias in the raw data which may leak into the transcription process. From an interpretivist perspective, all perception is theoretically informed,[73] and so, by having a relatively neutral other transcribe the interviews for me, the raw data was, I believe, more accurate than if I had transcribed it myself.

A mechanism to uphold accuracy in my data analysis was the triangulation of data. As has been described in the description of the sources of data, multiple sources of data allow for triangulation of that data as a means of avoiding "any bias in a particular data source" (De Vos, 2005, p. 361). By having numerous data sources, I was able to track inconsistencies in my data analysis and see in what ways the different data sources spoke to or contradicted one another.[74]

Validity

Validity refers to "… the degree to which the measurement process measures the variable it claims to measure" (Gravetter & Forzano, 2003, as cited in Delport, 2005,

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[72]Strydom draws on work by Babbie (2001) and Dane (1990) to make this generalisation.
[73]See, for example, Chalmers (1982).
[74]It must, however, be acknowledged that one of the research sub-questions asks about variations in pedagogical reasoning at different levels of support throughout the research process. Inherent in this research question is an assumption that there should be some shift in terms of the responses given.

p. 160). In other words, validity looks at whether the research tools actually gleaned data that could answer the research questions. Two kinds of validity will be considered, namely internal and external validity.

Internal validity

Internal validity is about whether the data gleaned from the research actually "seeks to demonstrate […] the explanation of a particular event, issue or set of data" (Cohen, et al., 2007, p. 135). In other words, internal validity asks whether the data actually shows what the researcher has interpreted it to show. In order to uphold the principle of internal validity, I asked another researcher to code a selection of data using the coding scheme that I developed. In this way, I was able to see whether my coding scheme was robust and clear, and whether my analysis of the data was valid and accurate. Additionally, in keeping with a semi-structured interview approach, I regularly requested clarification, asking questions such as *what do you mean by x*?[75] I also used a technique called 'revoicing', which involves the interviewer restating what the participant said in other words, so as to obtain clarity and to allow the participant to engage more fully with their ideas (Sherman, 2012). This technique also allowed me to gain clarity on what my participants were saying, improving the validity of my data.

External validity

The issue of external validity refers to the extent to which the results of the study can be generalised to the population (Cohen, et al., 2007). In relation to this study, I have already described how this study intends to yield 'fuzzy generalisations' (Bassey, 1999) about the population, and does not intend to make 'hard-and-fast' claims about the data because the participants were purposively sampled. However, I have tried to integrate the voices of ten pre-service teachers in order to give the reader a sense of the complexity of the data, as well as an understanding of the general trends within the cohorts.

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[75]Where *x* is a statement that a participant made during the interview.

<u>Reliability</u>

Reliability deals with the "stability or consistency of the measurement" (Delport, 2005, p. 162) meaning that the research tools could replicate the results gleaned from the data obtained. Cohen and his colleagues, however, present this as a view of reliability more suited to quantitative research which removes the research participant from their natural setting. Qualitative research, while still striving for "replication in generating, refining, comparing and validating constructs" (Cohen, et al., 2007, p. 148.), takes account of the fact that differing circumstances may produce different data, and so reliability of the data is not emphasised as strongly. The 'naturalness' of the data is taken as compensation for the partial loss of reliability.

I think that the strongest and most reliable instrument in my study was the assessment rubric that the participants filled in during their individual interviews.[76] This rubric was the most stable instrument as all participants engaged with it in the same way, and, being paper-based, it did not change in terms of the questions asked. Perhaps the weakest instrument in the study was the focus group interview schedule, because the nature of the questions relied heavily on the kind of discussion that the participants were having. The most variable step in the data collection was the focus group step.[77] To minimise these variations, I tried to steer the conversation to cover all of the aspects that the interview schedule needed to cover. For example, I would ask the participants to consider what Ms Mdluli should continue doing if they were only focusing on what she should stop doing in her teaching. My interview schedules and participant briefs were purposefully vague so as to allow the participants to lead the interviews and reflections to show me what they valued as important and not so important. I therefore cannot claim that my research instruments would necessarily yield the same results if replicated, but I do not consider that to be a major contribution of my research.

5.9 Challenges and limitations

Every research undertaking has potential pitfalls and challenges, because a choice has to be made as to how, when, and with whom a study is conducted. Every choice

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[76]Step 2 of the research process.
[77]Step 3 of the research process.

has alternatives, and this section will discuss the limitations of the choices that I made in relation to the present research. It also explores some of the challenges that I encountered.

Conceptual limitations

Much professional knowledge is tacit, meaning that it is "embodied rules of practice that experienced practitioners use to recognise connections between different elements of their practice" (Shalem & Slonimsky, 2013, p. 69), and ideas that influence practice are often tacit (Berry, et al., 2008). A lot of the knowledge that we acquire as professionals comes from experience or formal learning, and although we draw on it to engage in pedagogical reasoning and make professional judgements, it cannot always be articulated (Shalem & Slonimsky, 2013). A conceptual limitation of this study could be that the participants may say that they gained an insight from one place (a theory course, for example), but they actually learned it somewhere else and it was reinforced during the articulated source. Here, their 'apprenticeships of observation' (Lortie, 1975) may be at play, as their strong conceptions of teaching were simply supported by formal or experiential learning opportunities.

Furthermore, Shalem and Slonimsky (2013) (as well as Schön (1983)) say that we know much more than we can articulate, whether we withhold our knowledge because we don't think it is relevant or because we are not consciously aware of that knowledge. A conceptual limitation of this study, therefore, was that the data gleaned from the data collection was the *articulated* responses of the participants, which may be an incomplete account of their pedagogical reasoning and knowledge bases for their reasoning.

A further limitation of this study is that the participants from the BEd and PGCE groups all studied their programmes at the same university. Subsequently, the findings of this study are not necessarily transferrable to similar qualifications offered by other institutions. I do feel though, that there is a degree of transferability between institutions, because all institutions are required to design ITE programmes in

accordance with the MRTEQ policy (Department of Higher Education and Training, 2015).

Methodological challenges

Purposive participant selection has its drawbacks, including that the sample that is selected may not be representative of the population and that the results of the study will depend on the characteristics of the sample (McMillan & Schumacher, 2010). I take solace in the proviso presented by Cohen and his colleagues (2007), who say that there is little point in drawing a random sample of participants who are likely to be ignorant about the topic, or, in my case, who do not have the requisite characteristics to enable effective comparison.

Some drawbacks of the semi-structured interviews include that a limited number of participants can be interviewed at once. In the case of this study, only one participant could be interviewed at a time. Additionally, the potential for error involved in analysing the data that arises from an interview is more extensive due to the personal bias of the researcher. In keeping with the theme of the accuracy of data, Cicourel (1964) claims that one of the limitations of an interview is that "many of the meanings that are clear to one will be relatively opaque to the other, even when the intention is genuine communication" (Cicourel, 1964, as paraphrased in Cohen, et al., 2007, p. 350).

Finally, I feel the need to reflect on the research design and the ways in which the kind of 'quasi-experimental' nature of the study affected its findings. While the standardisation of the research process is a major strength of the study, I must consider the limitations of this approach. All participants responded to the same artefact of practice, using the same guiding principles given in the assessment rubric (see Appendix C2), which affords comparability of findings across the participant groups. However, one could argue that a 'limiting artificiality' of the study was this very same approach. In other words, the participants may well have engaged in pedagogical reasoning in different ways when responding to another lesson, or using a different assessment tool, or when reflecting on their own teaching.

Logistical issues: changes of plan

Cohen et al. (2007) describe a challenge of research as being the setting up of the research. They call this a "balancing act", requiring "the harmonizing of *planned possibilities* with *workable*, *coherent practice*" (*ibid.*, p. 78, emphasis in the original). As, I suspect, is a feature of many research undertakings, the present study had to be adapted to make it more "workable", and, at times, possible. I initially intended to select my sample more randomly. I realised early on in the planning of the data collection that I could not use a stratified random participant selection method, where I could randomly select participants from certain 'strata' or groups who matched the required characteristics (McMillan & Schumacher, 2010), because of a poor response rate to my invitations.

When I reflected on why I struggled to find willing participants to take part in my study, I realised that both contextual factors and the nature of the study itself were constraining my efforts. In terms of the contextual factors, due to the fact that the present research is contingent on participants of interest being at the *very end* of their initial teacher education programmes, I was implored to collect my data at the end of the academic year, which, in South Africa, coincides with the Festive Season (December). Many people tend to go on holiday or go home after spending a year working or studying in the city. This, coupled with the fact that the pre-service teachers were pre-occupied with preparing for their final examinations, meant that my research needs were (understandably) not a priority for them. In terms of the nature of the study itself being a constraining factor in finding willing participants, I have a hunch that the relatively large commitment of the three research steps that was required of research participants was off-putting. As a result, I was left with little choice but to phone participants to invite them to be a part of the research. After being given the list of contact details for each cohort, I did randomly select who I was going to call and invite to be a part of my research, and kept choosing names at random and phoning them until I had a suitable number of participants who agreed to take part in the study. As such, there was a small element of randomness in my participant selection.

5.10 Conclusion

This chapter has argued that, in the context of researching pedagogical reasoning and professional knowledge bases, a qualitative case-study approach is the most appropriate. It also described the data collection processes, as well as how data were analysed. It describes how qualitative data (individual and group reflections) were collected, and how these accounts were analysed using content analysis and numerical methods. The chapter also describes the rationale for a video of a lesson, which provided the artefact of practice about which participants could engage in pedagogical reasoning. Finally, it described the ethical considerations of the research, as well as the logistical and conceptual limitations of the research process.

CHAPTER 6: PEDAGOGICAL JUDGEMENTS OF LEARNERSHIP PARTICIPANTS

6.1 Introduction

This chapter presents the data analysis for the Learnership participants. I present the data analysis using five significant EPRs from the interviews with the Learnership participants. I have argued why I chose these particular quotes in the Methodology chapter. These five EPRs can be found in Appendix F1, but will be referred to, with sections quoted from them, throughout this chapter.

The data analysis will pull out six features of the data about the Learnership participants' pedagogical reasoning and judgements on practice. The first feature of the Learnership's episodes of pedagogical reasoning (EPRs) (Horn, 2010) is that the Learnership participants were more critical of Miss Mdluli than they were positive, and evidence for this claim from the five key EPRs will be presented. Following on from that, the next feature of the Learnerships' EPRs that is presented is how they tended to begin their EPRs with a judgement, and then abstracted to a hypothetical context. Third, I present evidence to support my claim that the Learnership participants' axiological and knowledge claims were relatively implicit, but that the axiological claims were more explicit than their knowledge claims. The fourth feature of the Learnerships' EPRs that I present data about is the Learnership participants tended to use simple terminology and language to make, explain, and justify their judgements. Fifth, I present evidence to support my claim that Learnership participants respond to the context of the lesson that they were shown, but that they did also justify their judgements in terms of their own experiences of teaching, and hypothetical contexts. They grounded their judgements less in principles or rules of teaching than other grounds. The sixth feature of the Learnerships' EPRs that will be substantiated is that the Learnership participants tend to legitimise their EPRs using their own reflections on their own practice. Finally, I present a 'profile' of a typical Learnership EPR based on the findings of this study together. This provides the reader with both a detailed

analysis in the first six sections, and a bird's-eye view of the analysis in the final section.

6.2 *Learnership participants were generally more critical than they were complimentary*

Participants used specific language to indicate that they thought that there was a *deficiency* in Miss Mdluli's thinking about her teaching. In EPR L1, for example, Tshepo makes a negatively charged comment about his perception of Miss Mdluli's knowledge of the content to be taught in the lesson. He indicates that he is dissatisfied with Miss Mdluli's knowledge by using negatively charged words, such as, "only," "wasn't anything extra," and "limited." Tshepo's words communicate that he feels that there was a deficiency in Miss Mdluli's content knowledge, but not necessarily that she had no content knowledge at all. Interestingly, he seems to conflate using a variety of resources in a lesson with the teacher having a deeper knowledge of the content than the learners when he negatively charges his observations that Miss Mdluli "only" used the textbook and that the hand-outs that the learners received were photocopies of the prescribed textbook from which Miss Mdluli was working. He seems to say that the use of a range of teaching and learning support materials means that the teacher understands the content knowledge beyond what the learners need to learn. Laeticia also uses language that indicates a deficit in Miss Mdluli's teaching, when she says, "She <u>doesn't</u> let them explain how they found it, why they find it, why they are saying that: she <u>just</u> gives them tasks." The underlined words also give a sense of deficiency: Laeticia is saying that Miss Mdluli's approach to learner participation and development is lacking and that her approach of "just [giving] them tasks" is not good enough. Laeticia also concedes that Miss Mdluli did ask the learners – an action that she positively charges with the word "does" – but she immediately changes the sentence into a negatively charged one with the word "but", indicating a contradictory thought. She says that Miss Mdluli did not give the learners activities to measure their understanding of the content, a deficiency which seems to overshadow the good done by asking them questions, according to Laeticia.

Ashley expresses that he thought that Miss Mdluli's monitoring of learning and understanding was less than satisfactory in a different way to how Tshepo and Laeticia expressed insufficiency in their EPRs. In EPR L5, Ashley communicates that Miss Mdluli's approach was lacking because, "She <u>could just</u> ask questions and pointing to specific people to answer to see if they are grasping the content." Ashley's use of the phrase "could just" shows how he feels that monitoring of learning and understanding is easy, yet she did not do it to a satisfactory level for him.

Participants also charged their EPRs negatively by using specific words that show that Miss Mdluli's actions were, in their opinion, problematic. In EPR L2, Tshepo charges his judgement negatively by using words such as "problem," and Laeticia uses the word, "rather" (EPR L4) when discussing Miss Mdluli's classroom management approach. Laeticia tended to negatively charge her EPRs by giving negatively-expressed suggestions, such as, "With learners making noise, you <u>don't need to disturb the whole class</u>, you just look at the learner…" and "<u>No need</u> to disturb the whole class to maintain discipline in the classroom" (both quotes from EPR L4).

It would be foolish to consider only how Learnership participants negatively charge their EPRs through the use of specific words (a very fine-grained analysis), and to ignore the ways in which they use contrasts to negatively charge their EPRs (a slightly less textured analysis). Sometimes the Learnership participants set up their critiques by stating what Miss Mdluli did in the lesson, and then by stating what they would have done or what is (in their opinion) a better approach. Tshepo does this when he says:

> *During the lesson she was like… she looked at the page, she was not prepared. She was not used to the textbook that she was using. As a result, she found a situation where she was moving to this page and then saw, "Oh my goodness, maybe I don't understand or I can't explain this," and then she jumped to another page … <u>It is easier to say to learners, "Page this and that and that talks about this, but we are going to move to this and then come back to it because of this and that." It gives confidence to learners that you know what you are doing</u> but if you are going to jump a page and jump in between it's not going to be very coherent, the lesson is not going to progress very smoothly* (EPR L2).

Here we see how Tshepo begins with a statement of what he observed in the lesson in the video, which was how, to him, Miss Mdluli was unprepared and moving between concepts in the textbook, giving the impression that she was unsure of the conceptual organisation of the topic. He makes the claim that she was incoherent in her teaching. He then claims a better way of approaching the conceptualisation of a lesson in order to emphasise the problems with Miss Mdluli's approach in the video. In a similar fashion, Laeticia also uses a contrast to make her point, but begins with a statement of best practice, and then contrasts Miss Mdluli's practice with her vision of the ideal approach to classroom management:

> *… if there is a learner making a noise, stand in front and keep quiet, concentrate on the learner, once you are quiet, the whole class is quiet, people are wondering why you are quiet. You are still at the front; they still can see you. When the learner faces you, [he or she realises], "Okay I am the one in the wrong," then talk to him or her with your eyes, use your body language somehow, stop doing this. Then the learner will stop* ... If you listen to [Miss Mdluli] in the video, she calls out, "Hey wena!" In our language[78] that is so disrespectful (EPR L4).

While Laeticia and Tshepo still use negatively charged words, such as "not used to" (EPR L2), "don't understand" (EPR L2), "can't" (EPR L2), and "so disrespectful" (EPR L4), they also make use of contrast in order to make their point that they were dissatisfied with Miss Mdluli's behaviour in the lesson.

Overall, learnership participants tended to be more critical about Miss Mdluli's teaching abilities than they were complimentary, with 52% of their EPRs being negatively charged in the individual interviews, as opposed to 41% being positively charged. In the focus group interview, the Learnership participants were even more negative about the lesson, with 76% of the EPRs being negatively charged, and 24% being positively charged. EPRs were coded as either negatively charged or positively charged by looking at the specific words used to describe the judgement. Phrases that indicated a negative reaction had negatively charged words.

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[78] Laeticia speaks Sepedi at home.

6.3 Learnership participants generally started their EPRs with a judgement, and then gave criteria for good teaching

When answering the questions that I asked them in the individual interviews, and in conversation with one another in the focus group discussion, the Learnership participants tended to begin their EPRs with a judgement. In EPR L1, for example, Tshepo dives straight into a judgement when he begins his response with, "She used the textbook more and she used only the definitions and the words and whatever appeared from the textbook." Tshepo's initial statement that Miss Mdluli only used the textbook and the definitions and terminology from the textbook is a judgement that Miss Mdluli presented information to the learners that was insufficient because it came from the textbook only. He then states a position that the textbook presents only the knowledge that the learners need to learn: "What is in the textbook is what learners just need to know" (EPR L1). This implies that, according to Tshepo, the knowledge in the textbook should not be the basis on which the lesson progresses. He states this to contextualise his judgement about Miss Mdluli's knowledge of the content, and to contextualise his proceeding continuation of his position. After stating that the textbook is the basis of a lesson, and that it should not drive the lesson, he gives more evidence for his judgement, which is that Miss Mdluli gave the learners photocopied hand-outs from the same textbook that she was teaching from. He continues his judgement by giving a criterion for good teaching: that a good teacher has extra information to give the learners to make the lesson more interesting. In this way, Tshepo expresses a judgement by showing the difference between what a good teacher (in his opinion) would do, and what Miss Mdluli did.

In EPR L2, Tshepo follows the same pattern when he begins his EPR with a judgement: "During the lesson she was like… she looked at the page, <u>she was not prepared</u>. <u>She was not used to the textbook that she was using</u>." Tshepo very briefly contextualises his EPR using what he observed in the lesson, and then moves into two very clearly stated judgements, namely that Miss Mdluli was not prepared (in general) and that she had not ensured that she was sufficiently familiar with the textbook that was prescribed for the subject. Interestingly, he criticises Miss Mdluli for

relying on the textbook too much in EPR L1, and then makes the judgement that she is not familiar enough with the textbook for his liking in EPR L2. Laeticia (EPR L4) and Ashley (EPR L5) also present their EPRs using this pattern of vocalising their judgement upfront, and then stating principles or criteria for good teaching to justify their judgements.

Ashley, like the other participants, begins his EPR with a judgement, and then states a criteria for good teaching when he makes the claim that, "She could just ask questions and pointing to specific people to answer to see if they are grasping the content" (EPR L5). He shows this pattern again after I asked him what he thought of Miss Mdluli's tendency to ask the learners if they understood. Ashley immediately began his response with, "That doesn't work," (EPR L5) and then he moves into a principle that in smaller classes, learners are more likely to ask questions if they do not understand. Only in EPR L3 did Laeticia begin her EPR with a statement of what Miss Mdluli did in the lesson (which turned out to be the justification for her judgement), and then she gave her judgement that, "She doesn't let them explain how they found it, why they find it, why they are saying that: she just gives them tasks" (EPR L3).

Although he follows the same judgement-criteria pattern that the other Learnership responses tend to, I would like to highlight the way in which Tshepo responds to a question about Miss Mdluli's conceptualisation of the lesson. He makes two judgements in his EPR, but the second is articulated in a very interesting fashion:

> *The other problem that I noticed was from the introduction to the new content that was going to be taught, I didn't find a link. <u>What I'm saying about a link is this: in the introduction you also check the learners' prior knowledge, what the learners know and don't know, and you can add on to that</u>. She asked questions, she doesn't follow on from then on she gave definition of what a climate is, and I don't fully agree with her definition of what a climate is, and then she talked about temperature as a degree of something. I felt that there should have been a difference between what we call climate and weather. I felt that there should have been a definition of weather: what do we mean by weather, what do we mean by climate and go to temperature* (EPR L2).

Tshepo, like the other participants, begins his EPR with the judgement that Miss Mdluli's lesson introduction did not link with the topic of the lesson, and then moves into a criterion for good teaching. The slight difference is how Tshepo moves from his judgement to the criteria: he formalises his criteria very strongly with the words "What I'm saying … is this …" He abstracts the criteria very clearly and brings it to bear on what he observed in the lesson. He then brings the EPR back to his observations of what Miss Mdluli did in the lesson, before once again abstracting criteria for good teaching (in this specific lesson, not in general. Highlighted in grey) through his suggestions to Miss Mdluli, thereby rendering the semantic range very small. In this way, Tshepo creates a strong case for his judgement that Miss Mdluli's teaching was unsatisfactory because there was no continuity from the lesson introduction to the body of the lesson.

6.4 Learnership participants' axiological claims were more explicit than their knowledge claims, but both were relatively implicit

In their EPRs, the axiological and knowledge claims that were made were very often implicit, requiring a careful reading of the text to access the claims they were making. The Learnership participants made many axiological claims about teaching through their judgements, by foregrounding the social relation in their comments. Their knowledge claims, however, were often much more implicit, and required me to interpret them from what the participants had said by inferring when they were foregrounding the epistemic relation in their comments. For example, in EPR L2, Tshepo foregrounds the social relation when he says, "… she looked at the page, she was not prepared. She was not used to the textbook that she was using" (EPR L2). Notice how Tshepo places emphasis on Miss Mdluli as a person; that *she* was not prepared, that *she* did not know what was in the textbook, and as a result, *she* was incoherent. Tshepo is making an axiological claim that a teacher needs to know what information is contained in the teaching and learning resources that s/he chooses to use and needs to have prepared adequately to present the lesson to the learners. This axiological claim is relatively implicit: Tshepo does not actually say that this is his belief, but he implies it when he points out that Miss Mdluli does not perform in such a way that aligns with his beliefs about being a good teacher. Laeticia (EPR L3) also

foregrounds the social relation when she focuses on what Miss Mdluli did in the lesson, and why she (Miss Mdluli) was at fault for not allowing the learners to be active in the discussion of the topic. Laeticia bases her judgement on a perception that Miss Mdluli shut down opportunities for learners to be active and implement the knowledge that they had been taught during the lesson. She makes a judgement based on her perception of Miss Mdluli as a person, which is evidenced by her repeated use of the word "she". Laeticia makes an *implicit axiological* claim that a good teacher gives the learners opportunities to engage with her/him and the knowledge throughout a lesson. This is an axiological claim because it is a claim about how a teacher should be: that a teacher should be open to engagement with the learners.

Laeticia makes another axiological claim in EPR L4, but this time, it is much more explicit. Laeticia reflects on an incident in the video where Miss Mdluli shouted, "Hey wena!" at a learner, and said, "In our language that is so disrespectful. When you say that the learner won't listen to you anymore. She's like, 'This person doesn't respect me'" (EPR L4). Laeticia foregrounds the social relation much more explicitly than in EPR L3 because she makes an explicit claim that what Miss Mdluli said was not appropriate. She uses the word "disrespectful": disrespectful is a way of being, and so Laeticia was making the claim that the way in which Miss Mdluli disciplined the child was not the way to be as a teacher (and perhaps as a person in general, as she abstracted the judgement to the level of the social by stating that it is disrespectful "*in our language*").

Ashley foregrounds the social relation implicitly when he says that some children will feel comfortable to ask questions but if a teacher "nags" them to tell her/him if they understand, some children will just say, 'yes' (EPR L5). Ashley is making an axiological claim about how the teacher should be: that s/he should not be someone who "nags" learners, and they should be someone who is approachable when learners have questions or do not understand. He then makes a rather implicit knowledge claim that the size of the class influences whether learners ask questions or not, foregrounding the epistemic relation. This is a knowledge claim because it is about what a teacher

should know. This claim has nothing to do with who the teacher should be and foregrounds the knowledge that the teacher should have.

Tshepo's extract (EPR L1) is one of the very few EPRs in the entire Learnership dataset that make a knowledge claim explicitly. Tshepo makes the clear knowledge claim that the textbook provides only what the learners need to learn, and no more. He bases his judgement on a perception that Miss Mdluli did not possess any knowledge further than that in the textbook on this fact. He also makes a more implicit axiological claim that a teacher needs to use more than the textbook that is prescribed for the subject to make the lessons interesting. This is an axiological claim because it is a claim about how the teacher should be: she should do further research so that she can present a lesson that is not boring for learners.

6.5 Learnership participants used simple terminology and language to make, explain, and justify their judgements

The Learnership participants tended to use unspecialised, simple terminology and language to describe their thoughts about the lesson in the artefact of practice, even when they were talking about the employment of specialised teacher knowledge. In EPR L1, Tshepo talks about how Miss Mdluli did not present any extra information to "spice up" the lesson. Here, Tshepo is making the statement that a teacher needs to be able to extend the learners' knowledge of the topic, and that the teacher needs to have a deeper understanding of the content in order to do this. He uses everyday language in order to express the claim that a teacher needs to understand the conceptual structure of the content in order to present alternative representations of the information to support and promote learning in the lesson.

He goes on to say, when comparing how he views the role of teacher content knowledge with how he perceives Miss Mdluli to view it: "As a teacher I felt that they needed to know more about what I'm teaching – I need to know more about how is it applicable in real life, in the world of business how is it used and why is it used so it keeps the lesson interesting." Tshepo, once again, uses everyday terminology, such

as "need to know more" (as opposed to "have a deeper conceptual knowledge of the content", for example), and "it keeps the lesson interesting" (as opposed to, for example, "hold the learners' attention for meaningful learning to occur"). In EPR L2, Tshepo says that Miss Mdluli "jumped to another page," and speaks about the ideal teacher as being "on the good side".

Very interestingly, all of the participants in the study had the assessment rubric[79] that they had filled in, in front of them when I interviewed them about their responses to the artefact of practice. That assessment rubric with which they scored Miss Mdluli had specialised language written on it, organised into the categories which were used to guide the interview discussions. In relation to content knowledge, for example, the assessment rubric had phrases such as:

- comprehensive,
- well organised knowledge of topics;
- foregrounds main ideas;
- networked examples

Despite having formal terminology which represented the criteria for good teaching in front of them, the Learnership participants, like Tshepo, still used everyday language to describe their perceptions of Miss Mdluli's teaching. On the odd occasion where the Learnership participants did use more formal language that is associated with the practice of teaching, they used the terminology but explained it using everyday language. Laeticia, for example, uses the formal term "classroom discipline" repeatedly in EPR L4, but describes how to maintain classroom discipline by saying "Rather use body language. With learners making noise, you don't need to disturb the whole class, you just look at the learner, talk to the learner with your eyes and continue." Phrases like "body language" and "talk … with your eyes" (EPR L4) are everyday phrases that any person who is not learning to teach could use.

Ashley does a similar thing when he uses the term "monitoring learning and understanding" (EPR L5), but he describes the process of repeated questioning as

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[79] See Appendix C2

"nagging" (EPR L5) the learners, another everyday idea. Furthermore, Ashley uses somewhat specialised language when he suggests that Miss Mdluli, "ask questions and [point] to specific people to answer to see if they are grasping the content" (EPR L5) but the phrase "grasping the content" is left unsupported. It is unclear what he means by the phrase "grasping the content": Does he mean that the learners can repeat certain definitions back to the teacher? Does he mean that the learners can describe a concept that she has taught them? Does he mean that they can answer questions about the particular graph that she is presenting on the board? The everyday manner in which Ashley uses this phrase eschews what he means by it.

In the focus group interview, the Learnership participants very seldom spoke to each other. I had to actively encourage them to have a conversation amongst themselves, and frequently when they did respond to one another, it was with one-word answers. It is for this reason that I did not include an excerpt from their focus group interview as one of the Key EPRs for this findings chapter. However, the nature of their conversation is important for the study. As such, I shall quote an excerpt from their conversation for analysis here, but I have not included it as a Key EPR as it does not have enough substance to show the trends in the data that are presented in this chapter. The following excerpt is taken from the Learnership focus group discussion after I asked the participants to give Miss Mdluli some advice to improve her practice:

Laeticia: So… ask thought-provoking questions, and just engage…

Ashley: And just…

Laeticia: Okay.

Ashley: Ja. That's what I want for the introduction.

Laeticia: For an introduction. Yes.

Ashley: It's not always easy… introducing.

Laeticia: Ja, I know it is not always easy, but I think it will go so much better if like she was to get, to make more research. Because it, it's not easy getting visual aids, but just, you read books – you're a teacher, right? You read books. These days we have access to the internet. Find something in the internet that is like… that has better explanation than what you see in a textbook. I think that when you present a lesson, you know, you see

a textbook first – you read a textbook. So, go on the internet. Just type the word, "climate." See what comes up. You know, you can… you can even not just define it in a social science kind of point of view. You can start with English.

Ashley:	Ja, yes.
Laeticia:	Just say, "You know climate in English means this, but in social sciences we are going to look at it as this, and this, and this, and this, and this…
Ashley:	Ja.

Laeticia is the only participant that really speaks here, and when she does speak, she uses everyday language and terminology that condenses very little meaning. There is very little networking of ideas, as Laeticia speaks about how to research the definition of 'climate' for the introduction of a lesson. Ashley and Tshepo do not take up her ideas and network them in any way: Ashley simply agrees with them, while Tshepo is silent. There is therefore very little networking of ideas happening in this conversation, as is shown in Figure 6.5-1:
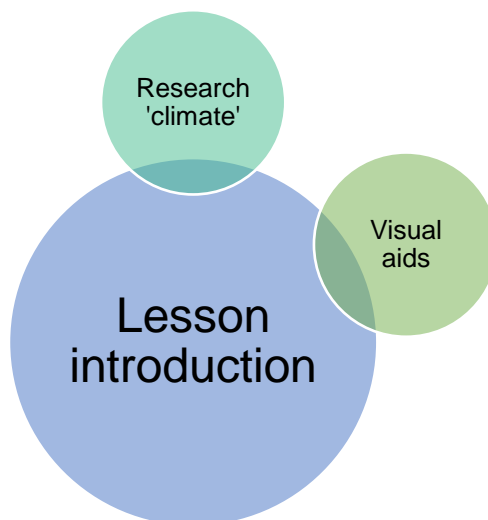
Figure 6.5-1: Networking of Learnership participants' conversation

Overall, the Learnership participants tended to use simple language and terminology to make, explain, and justify their judgements about Miss Mdluli's teaching in the video in the artefact of practice. They therefore tended to use terminology with relatively

weak semantic density and did not network their ideas in conversation with one another.

6.6 Learnership participants' rationales generally remain in the context of the lesson

The rationales of Learnership participants in this study generally remained in the context of the lesson in the video, which was coded as SG +++. This makes sense because the context of the lesson in the video is a shared context that all of the participants were privy to. Individually, Learnership participants drew on their own experiences (coded as SG ++) only 13% of the time, and not at all in the focus group interview. This is interesting because the Learnership participants spend such a large portion of their ITE programme in a classroom setting that one would expect that they ground their EPRs in their experiences in a classroom to a greater extent. They grounded their EPRs in hypothetical contexts (coded as SG +) in 29% of the EPRs in the focus group interview, and 13% in the individual interviews. They also grounded their judgments in principles of practice or rules associated with teaching (coded as SG -) in 6% of the individual interview EPRs, and in 10% of the focus group EPRs.

Figure 6.6-1 shows the distribution of the EPRs on the Semantic plane. It shows how the Learnership participants' EPRs generally used everyday language and terminology, which condensed little meaning. It also shows how their EPRs were predominantly in response to the context of the lesson in the video. It will be shown later how the Learnership participants' rationales for their judgements generally remained in the context of the lesson in the video.
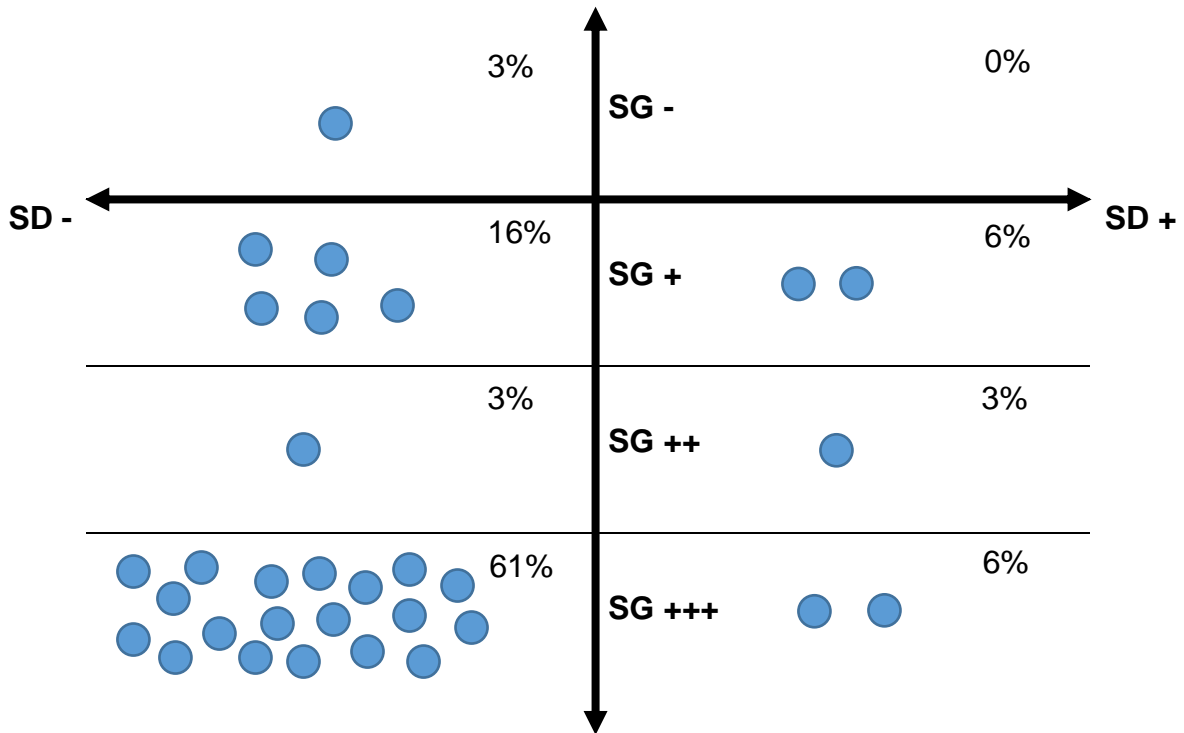
Figure 6.6-1: Semantics scatter plot of Learnership data

EPR L1 had a typical semantic structure of Learnership participants. Tshepo grounds his judgement in the context of the lesson that he observed. Tshepo draws on evidence from the video itself to make the judgement, and so he uses particular cues that were apparent throughout the video from the lesson to measure the acceptability of Miss Mdluli's knowledge of the content. The particular cues that Tshepo draws on are that: "She used the textbook more and she used only the definitions and the words and whatever appeared from the textbook" (EPR L1), and "she made printouts, they were from the textbook, so that learners can progress with her through the lesson, there wasn't anything extra that could spice up the lesson" (EPR L1). It becomes clear that Tshepo's judgement was grounded in, that is, took direction from, the general events in the specific classroom and lesson in the video. Sometimes, although they also grounded their judgements in the context of the video, the Learnership participants drew on one specific incident or event to ground their judgement. Laeticia anchors her judgement in an incident involving a learner where Miss Mdluli went to a learner to discipline him. Laeticia explains the details of the incident that she found pertinent to her judgement: "… there was a certain learner at the back, I didn't see the learner very well. You could see her calling out to him … She left the whole classroom and went to the learner at the back" (EPR L4). She is then able to make her judgement

that Miss Mdluli's "discipline style" was not appropriate because it disrupted the lesson too much, which is based on the actions that she observed in the video. Tshepo and Laeticia's EPRs show that whether a judgement is grounded in general trends in a specific context, or in a specific event in a specific context, the judgement is expressed as a consequence. What I mean is that they say that *xyz* happened, and that is why *abc* is not appropriate. In Tshepo's case (EPR L1), he says that she referred to the textbook too much (grounded in video lesson) which is why the lesson was not interesting (judgement). For Laeticia (EPR L4), she says that Miss Mdluli decided to walk to a child to discipline him (grounded in video lesson), which is why her lesson got interrupted (judgement). In EPR L2, Tshepo also grounds his judgement in his observations of the video, making the claim that Miss Mdluli did not know the important concepts that were covered in the textbook (judgement), and so she ended up jumping around in the lesson (grounded in video lesson).

Learnership participants also tended to imagine and articulate a hypothetical alternative context, that is, a context that does not exist in time and space, but that they are imagining creating a context for their judgement. If I think about how I would create a hypothetical classroom, I would likely draw on classrooms that I have seen or taught in myself, and experiences that I may have had, to create the 'rules' of the context that would set up the consequences for my judgement. Ashley's EPR is an example of using a hypothetical context to ground his judgement when he says that she could have just asked learners various questions to check if they understood the content. He does not use any specific cues from the classroom in the artefact of practice, but he also does not base his judgement on his own experiences, or principles or rules of teaching. He grounds his judgement that Miss Mdluli did not monitor learning and understanding effectively in a hypothetical: "She could have" (EPR L5).

Ashley then shifts the grounds for his judgement to a principle of practice, which is that learners are more likely to communicate that they do not understand in a small-group setting than they are in a larger-group setting. He thereby extends the semantic range of the EPR by abstracting principles from the hypothetical context on which he was

drawing, which extends the semantic range of the EPR. Although they offered suggestions in 45% of the individual interview EPRs, and in 76% of the EPRs in the focus group interview, Learnership participants did not tend to widen the semantic range of the EPRs by abstracting principles or rules. They offered suggestions that were grounded in their own experiences or in hypothetical contexts, but rarely in principles or rules of teaching. In EPR L2, Tshepo grounds his judgement in the context of the lesson in the video (as was presented earlier). He offers a suggestion to Miss Mdluli: "It is easier to say to learners, 'Page this and that and that talks about this, but we are going to move to this and then come back to it because of this and that.' It gives confidence to learners that you know what you are doing…" (EPR L2). Tshepo's suggestion is oriented towards the specific problem that Miss Mdluli was having of "jumping around" between concepts in the lesson, and can be illustrated as per Figure 6.6-2:
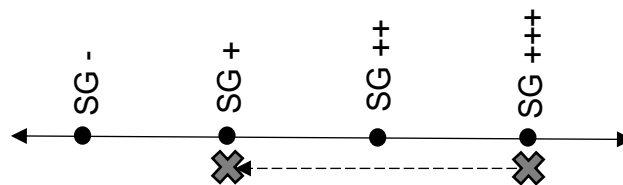
Figure 6.6-2: Semantic range of EPR L2

It does not abstract to a principle or rule, such as "research and understand the conceptual structure of the content in order to design your lesson steps to present the content in a logical manner", but it draws on a hypothetical context, which is suggested by the *if…then* reasoning in his EPR. Tshepo therefore widens the semantic range of his EPR but does not abstract principles or rules from the contextual cues in the video. Laeticia does a similar thing in EPR L4, where she begins by locating her judgement in the context of the lesson in the video ("there was a certain learner at the back, I didn't see the learner very well. You could see her calling out to him. Her discipline style at some point, I didn't like it. She left the whole classroom and went to the learner at the back. The class was well-disciplined, just one learner who wasn't"). She then grounds her judgement that Miss Mdluli's discipline style was not acceptable in a hypothetical context, by giving a tip to Miss Mdluli: "With learners making noise, you don't need to disturb the whole class, you just look at the learner, talk to the learner with your eyes and continue ... and when you call out to a learner, all the learners stop, and when you come back now learners don't know what you were talking about, you

have to restart, in that case you won't restart, you continue, you think they will still remember …" Like Tshepo, Laeticia grounds her judgement in the context of the video and then gives a hypothetical situation as a suggestion in order to highlight the problems that she perceives with Miss Mdluli's discipline strategy. Contrast this widening of the semantic range with where Laeticia, in EPR L3, grounds her judgement in the context of the video and remains there. At no point does she abstract to a hypothetical context, rule or principle, or even bring her own experiences to bear on the concerns that he highlights in the video.

Furthermore, the conversation is firmly located in the context of the lesson, and abstracts to a hypothetical context in which Laeticia imagines a good teacher researching the definition of 'climate' on the internet for a lesson. The semantic range of this interaction, given in Figure 6.6-2, then, is very narrow:
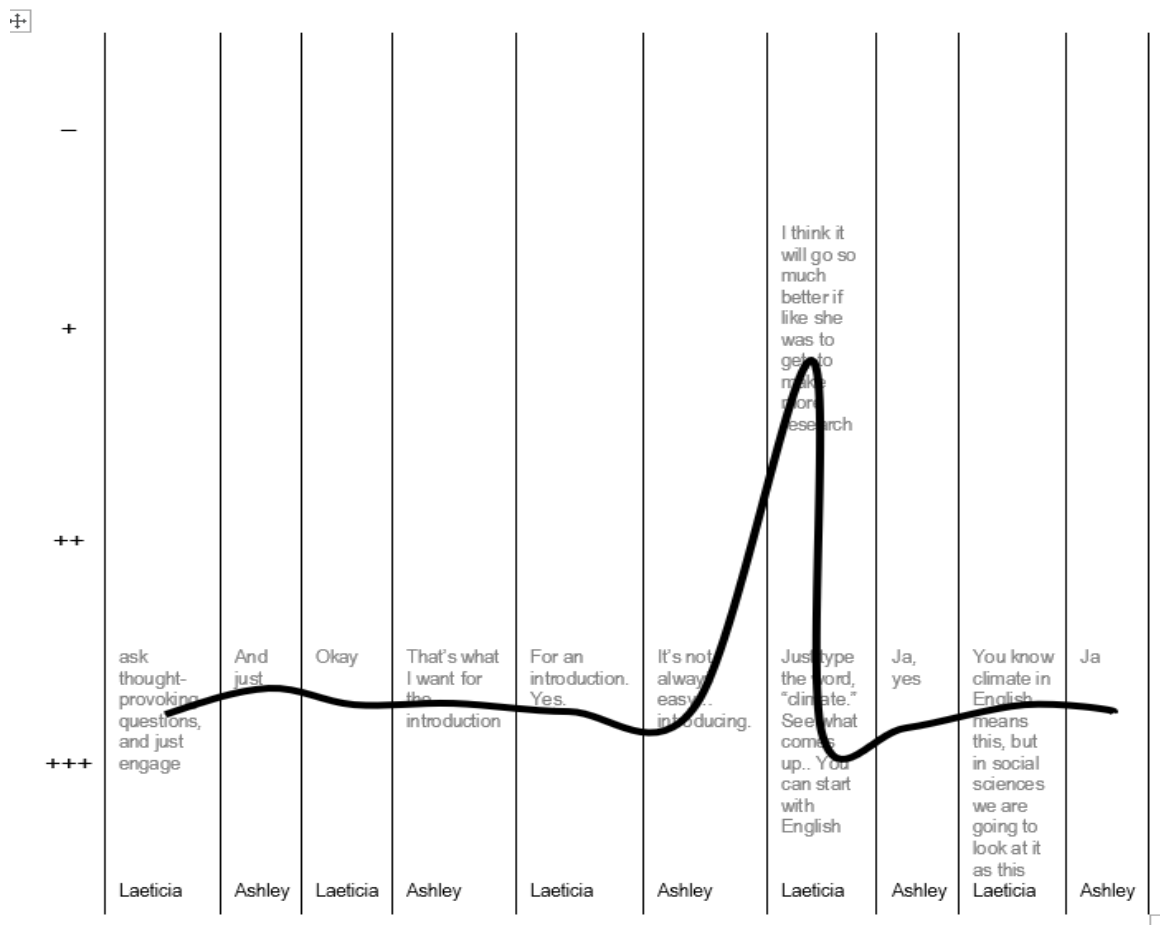
Figure 6.6-3: Semantic profile of Learnership FG excerpt

Overall, the nature of Learnership participants' responses was generally characterised by very strong semantic gravity, as their rationales tended to remain in the context of the lesson. They seldom widened the semantic range of the EPR by imagining an alternative hypothetical context in which in which they either conjecture how the aspect could have been improved, or in which they explain the problematic consequences of the aspect about which they were concerned.

6.7 Learnership participants generally draw criteria for good teaching from their own reflections on their own practice, thereby using themselves as models of good practice

Learnership participants only gave the basis on which they legitimised their judgements when prompted to. As a result, they only vocalised their bases for legitimation in the individual interviews, where I asked them to tell me where they learned that something was important. In the focus group discussion, where I left the participants to converse naturally about their perceptions of the lesson in the artefact of practice (and therefore about good teaching in general), they never vocalised the interactions that legitimised their judgements that they were making in relation to the video. I find this interesting because, to me, it implies that the Learnership participants' criteria for good teaching is so tacit that they struggle to articulate their reasons clearly, and needed to be pushed to articulate why it is important and where they learned that criteria is important. It is almost like it is so ingrained for them to reason about practice because they do it on such a regular basis that they are unable to articulate a lot of what they are thinking, and their thought processes, or maybe they don't have to do this much during the course of their Learnership.

Learnership participants legitimised their EPRs by drawing on their own reflections on their own practice far more than they drew on any other interactions. In 65% of their EPRs in their individual interviews, they drew on specific experiences and thoughts in general that they had had in their own teaching that they found significant to legitimise their judgements. In 10% of their EPRs, Learnership participants legitimised their judgements using their observations of other teachers, and also in 10% of their EPRs, they legitimised their judgements using feedback on their own teaching that they had

received during their Learnership programme. They drew on theoretical ideas in 13% of their EPRs, and on their Apprenticeships of Observation in 3% of their EPRs.

In keeping with the trends in the Learnership participants' data, Tshepo (in EPR L1) and Laeticia legitimise their judgements by drawing on their reflections on teaching (coded as IR ++). Tshepo (EPR L1) draws on his reflections on teaching financial mathematics to learners: "As a teacher I felt that they needed to know more about what I'm teaching. I need to know more about how is it applicable in real life, in the world of business how is it used and why is it used so it keeps the lesson interesting." Tshepo begins his justification by contextualising the justification in the context of when he taught a particular topic to learners. He then gives the reflection: he has found that in his teaching, the learners need to know the use of the knowledge, and so he has had to educate himself on the uses of the knowledge in order to make the learning of that knowledge legitimate for the learners. He has reflected on the times when he could justify why the knowledge was important to his learners and he has come to the conclusion that when he makes the purpose of the knowledge clear to the learners, they are more interested in the lesson. This is why, according to Tshepo, Miss Mdluli should make sure that she knows enough about the lesson topic – to be able to justify why it is being taught and, as a result, hold the learners' attention. Tshepo is drawing on his reflections on successful lessons to conclude that the lessons were successful because the learners understood the purpose of the knowledge, which he was able to communicate to them because he had done further research on the topic. Similarly, Laeticia (EPR L3) draws on her own experience of teaching where, through her reflections, she came to the conclusion that learners only understand if they are active in a lesson. Laeticia, unlike Tshepo, legitimises her judgement using her reflections on a specific event, whereas Tshepo uses his reflections on a series of similar events to legitimise his EPR. Both Laeticia and Tshepo's reflections have relatively strong interactional relations because the criteria for good teaching was communicated to them through the success or failure of the lesson (i.e. whether the learners were able to do the activities, whether they answered questions correctly, whether the learners behaved in the lesson), but they had to engage in interpretation of the outcomes of the lesson(s) in order to extract the criteria for good teaching.

Laeticia and Tshepo (EPR L4 and EPR L2, respectively) also draw on feedback that they received from a more experienced teacher about their teaching (coded as IR ++++). Laeticia draws on an experience that her mentor shared with her about an incident where the mentor left the classroom because she could not get the learners to behave. Laeticia drew lessons from her mentor's experience in order to legitimise her judgement that Miss Mdluli's classroom management strategy was not suitable. Tshepo draws on feedback from his mentor who explained to him how there needs to be a connection between the lesson purpose and the lesson steps. Both Laeticia and Tshepo's experiences have very, very strong interactional relations because the criteria for good teaching were very clearly communicated to them. There was very little interpretation required on their part to glean the criteria of good teaching.

The Learnership participants tended to legitimise their EPRs with their reflections on practice more often than any other basis. They sometimes legitimated their EPRs with their reflections on specific events that occurred in their classrooms, or with general reflections on a pattern of events that occurred in their classroom. I also presented two examples where Learnership participants legitimised their EPRs using feedback from a mentor to show how the data were coded according to the strength of IR. I used the idea of how clearly the criteria of good teaching and the extent to which the pre-service teacher needed to interpret the criteria as indicators of the strength of IR.

6.8 Pulling it all together: the ways in which pedagogical reasoning and judgements are communicated by Learnership participants

Throughout this chapter, the same EPRs have been presented, and it has been shown how the trends that were presented were gleaned from the EPRs. The data that has been presented builds a picture of the typical EPR of a Learnership participant. The Learnership participants' responses typically:

- Were critical of Miss Mdluli as a person, indicated by the foregrounding of how a teacher should be and the backgrounding of what a teacher should know and

be able to do. They therefore made more axiological claims about teaching than they made knowledge claims, but both types of claims were relatively implicit.

- Began with a judgement before giving the criteria for good teaching, thereby weakening the semantic gravity of the EPR. They tended to ground their EPRs in the context of the lesson in the video (SG +++), but they could imagine a hypothetical alternative context in which things could (and often should) be done differently (SG +). They did not abstract the grounds on which they based their judgement to a context-free rule or principle.

- Used very everyday language and terminology to express their judgements and justifications of those judgements (SD -).

- Drew criteria for good teaching from their own reflections on their own practice (SubR -, IR ++), using themselves as implicit models of what Ms Mdluli should rather have done. This requires a significant amount of interpretation in order to extract the criteria for good teaching.

The typical Learnership EPR's 'profile' could then look something like:

Table 6.8-1: Learnership 'profile'

Dimension	Code	Interpretation	Strength
Specialization	Epistemic relations	Degree to which knowledge and skills are foregrounded	Backgrounded
	Social relations	Degree to which personal attributes are foregrounded	Foregrounded
Social	Subjective relations	Degree of access	-
	Interactional relations	Degree of explicitness of criteria for good teaching	++
Semantic	Semantic gravity	Degree of abstraction	+++ → +
	Semantic density	Degree of condensation of meaning	-

This chapter has systematically shown how the profile of a Learnership EPR was developed. The next chapter will discuss the findings of the PGCE data analysis.

CHAPTER 7: PEDAGOGICAL REASONING OF PGCE PARTICIPANTS

7.1 Introduction

This chapter presents the data analysis for the PGCE participants. Like in Chapter 5 for the Learnership participants' data, I present the data analysis using five significant EPRs from the interviews with the PGCE participants. These five EPRs can be found in Appendix F2, but will be referred to, with sections quoted from them, throughout this chapter.

The data analysis will pull out six features of the data, which help the reader to understand how I came to the conclusions about the PGCE participants' pedagogical reasoning and judgements on practice. The first feature of the PGCE's EPRs is that they were more critical of Miss Mdluli than they were positive, and evidence for this claim from the five key EPRs will be presented. Following on from that, the next feature of the PGCE's EPRs that is presented is how they tended to begin their EPRs with a judgement, and then gave principles or criteria for good teaching to substantiate their judgement. Third, I present evidence to support my claim that the PGCE participants' axiological and knowledge claims were relatively implicit, but that the axiological claims were more explicit than their knowledge claims. The fourth feature of the PGCE's EPRs that I present data about is that the participants tended to use simple terminology and language to make, explain, and justify their judgements. Fifth, I present evidence to support my claim that PGCE participants ground their rationales mainly in the context of the lesson in the artefact of practice, but that they did also ground their judgements in their own experiences of teaching, hypothetical contexts. The sixth feature of the PGCE's EPRs that will be substantiated is that the PGCE participants tend to legitimise their EPRs using their own reflections on their own practice. Finally, I present a 'profile' of a typical PGCE EPR based on the findings of this study.

7.2 PGCE participants were generally more critical than they were complimentary

PGCE participants were far more critical of Miss Mdluli than they were complimentary. 82% of their EPRs in the individual interviews were negatively charged, as were 77% in the focus group interview. Compare this with the EPRs which praised Miss Mdluli's teaching: 15% of the EPRs in the individual interviews and 14% in the focus group interview were complimentary. EPRs were coded as either negatively charged or positively charged by looking at the specific words used to describe the judgement.

The PGCE participants' EPRs used words that are normally negative to negatively charge their EPRs, such as when Charli (EPR P1) says, "Kids weren't <u>responsive enough,</u> so she didn't move on <u>quickly enough</u> … I suppose I could also <u>fault</u> the time planning a bit because of the time sequence between the different steps," and where Sarah (EPR P4) says, "just using the worksheet like she did is <u>not </u>good enough." The PGCE participants also negatively charged their EPRs by saying what Miss Mdluli "could have" or "should have" done, indicating that they perceived a deficiency in her teaching; that there was more that she could have done, or an alternative that would have been more appropriate in their opinion. Jenna, for example, in EPR P3, conjectures that "… she could have done more explanations, used more examples" to improve her lesson. Jenna goes on to link Miss Mdluli's knowledge of the content, which she therefore simultaneously critiques in her EPR: "That would have occurred if she had done a little more research than she did, and maybe compared South African climate to another southern hemisphere climate or even done a bit of northern hemisphere" (EPR P3). Sarah similarly shows that she feels that Miss Mdluli's lesson was lacking something when she says, "She <u>only</u> gave them hand-outs which is a photocopy of her textbook and <u>she used the board</u>" (EPR P4). Sarah's use of the word "only" and the negatively charged "she used the board" indicates that she feels that the teaching and learning resources that Miss Mdluli chose to use were not enough: "She did make some attempt but she <u>didn't really</u> go beyond that, she <u>didn't</u> give them other sources. She <u>didn't</u> develop her own" (EPR P4). Sarah feels that the fact that Miss Mdluli did not develop her own resources and relied on the textbook and chalkboard overshadowed the fact that she made photocopies of the textbook for the

learners who did not have their own copy. Sarah's negatively charged EPR reveals her criteria for good teaching, which is that for her, a good teacher develops her own teaching and learning support materials and uses a variety of materials to support teaching and learning.

PGCE participants also negatively charged their EPRs by *comparing* what they saw in the video in the artefact of practice to what they would have done, or what they think Miss Mdluli should have done: "I suppose I could also fault the time planning a bit because of the time sequence between the different steps. I would <u>expect her to</u> spend a bit more time …" (EPR P1). Here Charli negatively charges her judgement that Miss Mdluli's time management was not good enough by using a negative word, "fault". She also negatively charges her judgement by comparing what Miss Mdluli did with what she (Charli) would expect of a pre-service teacher. Similarly, Sarah reflects on what she might have expected of herself as a basis for judging the deficiencies of Ms Mdluli's teaching resources in EPR P4:

> ***I'm one of those teachers that I like to develop resources*** <mark>*so*</mark> *for me <u>just</u> using the worksheet like she did<u> is not good enough</u>. She <u>only</u> gave them hand-outs which is a photocopy of her textbook and she used the board. She did make <u>some attempt,</u> but she didn't really <u>go beyond</u> that, she <u>didn't</u> give them other sources. She <u>didn't</u> develop her own.*

Sarah uses a strategy of setting up her own approach to learning support materials in contrast to Miss Mdluli's and using her own beliefs about the development and use of teaching and learning support materials to negatively charge her comments about Miss Mdluli's teaching. In the bold text, Sarah places herself up front and in a position of privilege. She indicates the consequence of her (perceived) correctness when it comes to teaching and learning support materials with the use of the word "so" (highlighted in grey), and then uses negative words to recount and therefore negatively charge what Miss Mdluli did in the video: "just," "not good enough," "only," "didn't."

In the focus group, PGCE participants charge their EPRs negatively in an interesting way: they negatively charged their EPRs using very everyday language, almost to the

point of slang terms. Jenna, in the focus group, begins her EPR with: "… she kind of threw it out there" (EPR P5). By this Jenna is referring to when Miss Mdluli asked the learners questions in the beginning of the lesson to establish their prior knowledge of the topic to be taught. Jenna was critiquing Miss Mdluli's tendency to ask the questions to the whole class, and that she did not "say to a specific learner, 'What is the definition?'" (EPR P5) and then clarify if learners were correct or not. In her reply to Charli in the focus group, Jenna again negatively charges what she says about Miss Mdluli's teaching by positively charging a statement of what she (Jenna) has done to establish prior knowledge, but does so in a very informal manner: "… the kids learned... what was going on" (EPR P5).

What I found very interesting was how Jenna positively or negatively charged her comments about Miss Mdluli in relation to the concept of 'authority.' In EPR P2, given in Table 7.2-1, Jenna positively charges her EPR about Miss Mdluli's classroom management, and in EPR P5, she negatively charges her comments about Miss Mdluli's questioning technique:

Table 7.2-1: Comparison of charging in EPRs P2 and P5

EPR P2 (classroom management)	EPR P5 (questioning technique)
Her mannerisms, her establishment that she is the authority, not in all knowledge, she is the authority, 'I am the teacher here. You must listen to me when I speak to you' … She spoke to him once and then she went up to him and I thought she did it in a good manner.	*What she should have done, if not starting that, but sort of say to a specific learner, "What is the definition?" And whether they get it right or wrong, sort of aid them in saying… well if it was wrong, say, 'Well, no, it was wrong,' but ask another learner what it is. You know. So, it's not always, 'Oh it's the teacher who has the authority.'*

Notice how in EPR P2 Jenna's tone in the underlined phrases is much more formal than in the underlined phrases of EPR P5. In EPR P2, Jenna is praising Miss Mdluli's air of authority in the classroom, whereas in EPR P5, she is critiquing it, saying that it makes her unapproachable to the learners. Jenna almost seems to negatively charge

her EPR using a more 'flippant' kind of language, intimating that Miss Mdluli was thoughtless in her actions and words. Contrast this with the more formal way in which she speaks about Miss Mdluli when she agrees with what she did, where she lends a more formal and less 'flippant' tone to her words, intimating that Miss Mdluli was more thoughtful in her actions and words.

Overall, the PGCE participants used negative language, or language to indicate a deficiency to negatively charge their EPRs. They made use of comparisons of what Miss Mdluli did to what they feel that she should have done, or what the participants themselves would have done in order to negatively charge their EPRs. I have also shown how their tone and the formality of their language changes when they negatively charge an EPR.

7.3 PGCE participants generally started their EPRs with a judgement, and then gave criteria or principles for good teaching

PGCE participants tended to begin their EPRs with a judgement and then state their criteria for good teaching to show how Miss Mdluli's teaching was aligned or not. Charli in EPR P1, for example, begins her EPR with, "She started off in sequence, but she got stuck on the graphs and it went on and on." Charli then substantiates her judgement that Miss Mdluli muddled her concepts that she was going to teach in the lesson by drawing on evidence from the video. Charli believes that Miss Mdluli getting side-tracked impacted her time management because her lesson steps were not aligned with the conceptual development required: "Kids weren't responsive enough, so she didn't move on quickly enough. She got a bit side-tracked with the learner rapport … I suppose I could also fault the time planning a bit because of the time sequence between the different steps." Charli then communicates a criterion for good practice, namely that a teacher spends more time on more complex concepts or skills: "I would expect her to spend a bit more time, I don't think with the definition but with her wanting to do the graphs, the characteristics, graph work generally for grade 8s will take a bit longer initially depending on their prior knowledge." Charli then reverts to an account of what happened in the video to substantiate her claim that a good teacher links the concepts learned in a lesson to the skills that the learners are

practicing: "She just stuck on that and it seemed to hop around for the different temperature regions with the graphs still but there wasn't a clear understanding behind them. Hopping around and reading temperature and rainfall off graphs and didn't link it too much to the temperature regions – it was just about the graph skills" (EPR P1). In the focus group discussion, the PGCE participants tended to give their judgements upfront as well. Charli phrases her judgement as something that she should begin to do to improve her practice: "I think she should start using more meaningful questioning" (EPR P5). Charli, through her suggestion, makes the judgement that Miss Mdluli's questions were not 'meaningful[80].' She then goes on to hypothesise the consequences of using 'meaningful questioning,' thereby revealing a criterion that good questioning is 'meaningful.'

At times, participants began their EPR with a judgement, but at other times, their justification preceded the actual 'key sentence' that communicated their judgement. Jenna, for example, does this in EPR P2: "I felt that they were a good class, they weren't rowdy. I've had rowdy classes where it is just noise for an entire 40 minutes. So, I thought <u>she has a very good presence</u>." Jenna's judgement includes a reflection about her own difficulties with classroom management to substantiate her judgement. Jenna does a similar thing in EPR P3 ("We didn't see the entire lesson because most of it was them doing their own work. I think she <u>could have</u> done more explanations, used more examples"[81]).

Only Sarah, in EPR P4, begins her EPR with her criteria of good teaching before making a judgement about Miss Mdluli's practice: "I'm one of those teachers that I like to develop resources so for me <u>just </u>using the worksheet like she did is<u> not good enough</u>." Sarah begins by stating a criterion for good teaching (and locates herself as an upholder of this criteria) and then compares Miss Mdluli to this criteria, thereby making her judgement that Miss Mdluli did not make good enough use of teaching and learning support materials.

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[80] I put the word *meaningful* in quotes because it is not clear what Charli means by the term.
[81] The judgement is underlined, indicating how Jenna begins her EPR with a justification of her judgement.

A final feature of the structure of the PGCE participants' EPRs was that they tended to 'book-end[82]' their EPRs with judgements. Charli shows a clear example of this when she makes the initial judgement that Miss Mdluli did not schedule her time wisely, and then goes on to give her criteria for good teaching by describing what she would "expect" (EPR P1) to do. She ends her EPR (before describing the basis for legitimation) with another, slightly different but still related, judgement: "Hopping around and reading temperature and rainfall off graphs and didn't link it too much to the temperature regions – it was just about the graph skills" (EPR P1). Jenna also does this in EPR P2, where she makes the judgement that Miss Mdluli's classroom management was good. She begins the EPR by saying that Miss Mdluli, despite being of shorter stature, maintained an air of authority in the lesson. She unpacks her judgement by giving evidence from the video, and then ends her EPR by saying, "She was very professional" (EPR P2). As with Charli's example in EPR P1, Sarah in EPR P4, and Charli in EPR P5, Jenna 'book-ends' her EPR with two different but related judgements. It appears that the participants take themselves on a 'thought journey' as they justify their judgement and give their criteria for good teaching, taking them to a (perhaps clearer?) version of their position. I believe that talking through their judgement and justifying it by giving their criteria for good teaching enables the PGCE participant to straighten out their critique or compliment in their minds, and so they articulate it at the end of their explanation.

This sub-section of the findings for the PGCE participants describes how they tended to begin their EPRs with a judgement before explaining their judgement with evidence from the video and providing criteria for good teaching with which they compare Miss Mdluli's practice. It has also looked at the more nuanced ways in which they have structured their EPRs. It presented how some of the EPRs begin with a justification of their judgement before giving the judgement and unpacking it and giving criteria for good teaching. It also presented how the PGCE participants 'book-ended' their EPRs

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[82] My own term to describe the structure of their EPRs.

with different, but related judgements, the second of which was reasoned through their thoughts while justifying their initial judgement.

7.4 PGCE participants' axiological claims were more prevalent than their knowledge claims, and both were relatively implicit

The PGCE participants tended to critique Miss Mdluli *as a person*, revealing their axiological claims about teaching (that is, their beliefs about how a teacher should be). The PGCE participants' claims about how teachers should be or what they should know or do were relatively implicit, and I had to really dig to get to what they were saying about what a good teacher 'looks like.' I therefore had to do a lot of interpretation to uncover whether the participant was foregrounding the social relation and/or the epistemic relation, by making an axiological or knowledge claim, respectively.

Charli's example in EPR P1 shows how the PGCE participants foregrounded the social relation in their EPRs. Notice how Charli is focusing on Miss Mdluli as a person, indicated in italics: "*She* started off in sequence, but *she* got stuck on the graphs and it went on and on. Kids weren't responsive enough, so *she* didn't move on quickly enough. *She* got a bit side-tracked with the learner rapport" (EPR P1). Charli then moves on to a knowledge claim when she says, "Graph work generally for grade 8s will take a bit longer initially depending on their prior knowledge." Here, Charli focuses on what a teacher should *know*, not who they should be, therefore foregrounding the epistemic relation. Charli then goes straight back to foregrounding the social relation: "*She* just stuck on that and it seemed to hop around for the different temperature regions with the graphs still but there wasn't a clear understanding behind them. (*She was*) *[h]opping* around and reading temperature and rainfall off graphs and [*she*] *didn't link* it too much to the temperature regions – it was just about the graph skills." Similarly, Jenna also foregrounds the social relation when she speaks about Miss Mdluli's time management: "I think *she* could have done more explanations, used more examples. That would have occurred if she had done a little more research than she did, and maybe compared South African climate to another southern hemisphere

climate or even done a bit of northern hemisphere" (EPR P3). Here, Jenna makes an axiological claim that a teacher needs to take the initiative to do more research in order to extend the reach of the lesson. This axiological claim is relatively explicit, as Jenna actually says, "That would have happened if…" but is still quite implicit: she did not say something like, "A good teacher would have…"

Sarah's EPR in EPR P4 makes an axiological claim the loudest. Sarah begins her EPR with the sentence, "I'm one of those teachers that I like to develop resources so for me just using the worksheet like she did is not good enough." Sarah foregrounds the social relation by saying that the development and use of teaching and learning support materials is a 'personal' thing. Sarah implies that it is because of *who she*[83] *is*, that she[84] likes to develop her own resources, and that it is because of who Miss Mdluli is, that she[85] did not have/develop/use additional teaching and learning resources. Sarah goes on to list evidence for her judgement that Miss Mdluli did not make effective use of teaching and learning support materials, consistently making axiological claims about how a teacher should be: "She only gave them hand-outs which is a photocopy of her textbook and she used the board. She did make some attempt, but she didn't really go beyond that, she didn't give them other sources." (A good teacher does research to find other teaching resources); "She didn't develop her own" (A good teacher develops her own teaching and learning support materials). In all these examples, the critique foregrounds who the teacher is as a knower, and how well she is enacting the practice.

Even when giving advice to Miss Mdluli in conversation with their peers, PGCE participants foregrounded the social relation: "What she should have done, if not starting that, but sort of say to a specific learner, 'What is the definition?' And whether they get it right or wrong, sort of aid them in saying… well if it was wrong, say, 'Well no, it was wrong,' but ask another learner what it is. You know. So, it's not always, 'Oh it's the teacher who has the authority' (Jenna, EPR P5). Jenna foregrounds Miss Mdluli

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[83] I am referring to Sarah here.
[84] I am referring to Sarah here.
[85] I am referring to Ms Mdluli here.

as a person – how she should be – when saying how she could improve her questioning. Jenna even goes so far as to say that if you ask questions in this way, you position yourself in a certain way. She makes claim that a teacher should communicate clearly with the learners whether their answers are correct or not. In her response, Charli continues to foreground the social relation, making the axiological claim that a good teacher asks questions to gauge if the learners understand or not. Jenna replies with a suggestion to "make it fun," another clearly axiological claim about being a teacher, foregrounding the social relation.

This section has presented evidence from the five key PGCE EPRs to make the argument that PGCE participants foregrounded the social relation and backgrounded the epistemic relation in their EPRS. It has presented evidence for the assertion that PGCE participants made more axiological claims than knowledge claims. I now move to a presentation that shows *how* the participants made these axiological claims, arguing that they use simple terminology and language to make these claims.

7.5 PGCE participants used simple terminology and language to make, explain, and justify their judgements, but did formalise their ideas at times

The PGCE participants tended to use unspecialised, simple terminology and language to describe their thoughts about the lesson in the artefact of practice, even when they were talking about specialised teacher knowledge. Charli (EPR P1), for example, speaks about how Miss Mdluli "got stuck" on the graph skills and did not move on to conceptual development. What Charli is saying is that Miss Mdluli, in her opinion, placed too much emphasis on developing the learners' graph skills at the expense of geographical knowledge. As a result, Charli says, she did not reach a point where she could develop their knowledge of the salient concepts that were the focus of the lesson, which would have enabled the learners to make sense of the graphs and their newly acquired skills. Charli later talks about how Miss Mdluli "seemed to hop around for the different temperature regions with the graphs" (EPR P1). Continuing her earlier

point, Charli says that Miss Mdluli did not complete the development of a single concept before moving on to another and seemed to move between concepts and graphs in a manner that may have confused the learners. Similarly, Jenna (EPR P2) speaks about the class as not being "rowdy," and how she was "not buddy with [the learners]" during her practicum. Here, Jenna is describing the behaviour of the learners using a very simple term. "Rowdy" is not a specialised term used in education. Jenna also uses simple language when she speaks about her own experiences of using a quiz to establish learners' prior knowledge: "It went <u>completely mad</u> and was <u>really loud</u>" (EPR P5). Again, Jenna uses very pedestrian language to describe the experience; language that a non-teacher or even a learner may use to describe the same classroom.

This kind of language as described in the previous paragraph has weaker epistemological-semantic density (ESD-) (Maton & Doran, Semantic density: A translation device for revealing complexity of knowledge practices in discourse, part 1 - wording, 2017). Terminology like "rowdy," "hop around," and "mad" do not condense specific meanings. A term like "mad" means completely different things when used to describe a classroom (meaning chaotic), an athlete (meaning avid), and a hornet (meaning angry or disturbed). This kind of language which requires understanding of the context in which it is used is somewhat informal. I think that it is important to distinguish between language that is simple and informal, such as "rowdy" and "hop around," and language that is simple and relatively formal. I would argue that the semantic density of everyday-informal language is weaker than everyday-formal language, because the more formal the language, the more meaning it carries. PGCE participants also used simple-formal language and terminology to unpack their judgements. Charli, in the focus group interview, says: "I think she should start using more <u>meaningful questioning</u>" (EPR P5). "Meaningful questioning" is not an informal term, but it is not quite a specific teaching term either. There may be 'meaningful questioning' in the field of law, fine arts, or linguistics. In my opinion, then, 'meaningful questioning' has a stronger semantic density than 'good questions,' but not as strong as 'diagnostic questioning,' for example. Charli gives another example later in the same EPR when she speaks about the learners being "disinterested," leading them to

answer, "Yes," to the question, "Do you understand?" "Disinterested" is a more formal word than "bored," but does not condense as much meaning as "disengaged."

Although not included in the key PGCE EPRs, one of the very few examples of formal, specialised language and terminology being used was when Sarah spoke about Miss Mdluli's ability to "code-switch" (in the individual interview, unit of analysis 6). Sarah was critiquing that Miss Mdluli tended to discipline the learners in their own language but taught them in English. She made the point that if she could discipline them in their own language, why could she not ask the learners questions and explain the concepts in their own language? She referred to this concept of changing language in a conversation as "code switching", which is a term that condenses a very specific meaning and is closely networked with many other ideas, such as ideas associated with the learning of a second language, code mixing, and even cultural studies.

In conversation with one another, the PGCE participants did not network their ideas to other ideas. In EPR P5, Charli and Jenna talk about the importance of questioning in a good lesson and agree that Miss Mdluli should make use of "meaningful questioning." Charli briefly networks the role of questioning in class to its role in assessment but does not develop this link. The network of meaning that is developed in this interaction is captured in Figure 7.5-1:
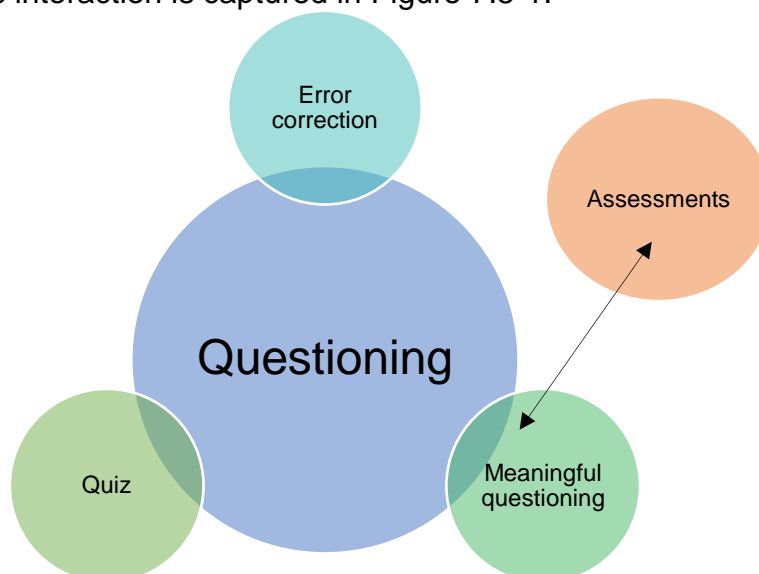
Figure 7.5-1: Networking of PGCE participants' conversation

Overall, the PGCE participants tended to use simple language and terminology, but generally used simple-formal language to make, explain, and justify their judgements about Miss Mdluli's teaching in the video in the artefact of practice. They sometimes used simple-informal language, but very rarely used specialised terminology associated with teaching and learning that they would have learned during their ITE programme. They therefore tended to use terminology with relatively weak semantic density, sometimes weakening it to use more informal everyday language, and very rarely strengthening it to use specialised ideas and terminology.

7.6 PGCE participants' rationales generally remain in the context of the video, occasionally being abstracted to a hypothetical context

The rationales of PGCE participants in this study generally remained in the context of the lesson in the video, which was coded as SG +++. 48% of the EPRs in the individual interviews with PGCE participants and 57% of the EPRs in the focus group interviews saw the participants grounding their judgements in the specific lesson in the video that they had all watched, which constituted a shared context for all of the participants in this study. 27% of the EPRs in the individual interviews had their judgements grounded in a hypothetical context, as did 24% of the EPRs in the focus group interview. 18% and 19% were grounded in the participants' own experiences of teaching in the individual interviews and focus group interviews, respectively, while 6% of EPRs in the individual interviews, and none in the focus group interviews, were grounded in a principle or rule of teaching. I find this last statistic interesting as rules and principles of teaching are, like the context of the video, also a shared context, as all of the PGCE participants would have learned them in their ITE programme (especially since they all went to the same institution at the same time).

Figure 7.6-1 shows the distribution of the EPRs on the Semantic plane. It shows how the PGCE participants' EPRs generally used everyday language and terminology, which condensed little meaning. It also shows how their EPRs were predominantly in response to the context of the lesson in the video. It will be shown later how the PGCE

participants' rationales for their judgements generally remained in the context of the lesson in the video.
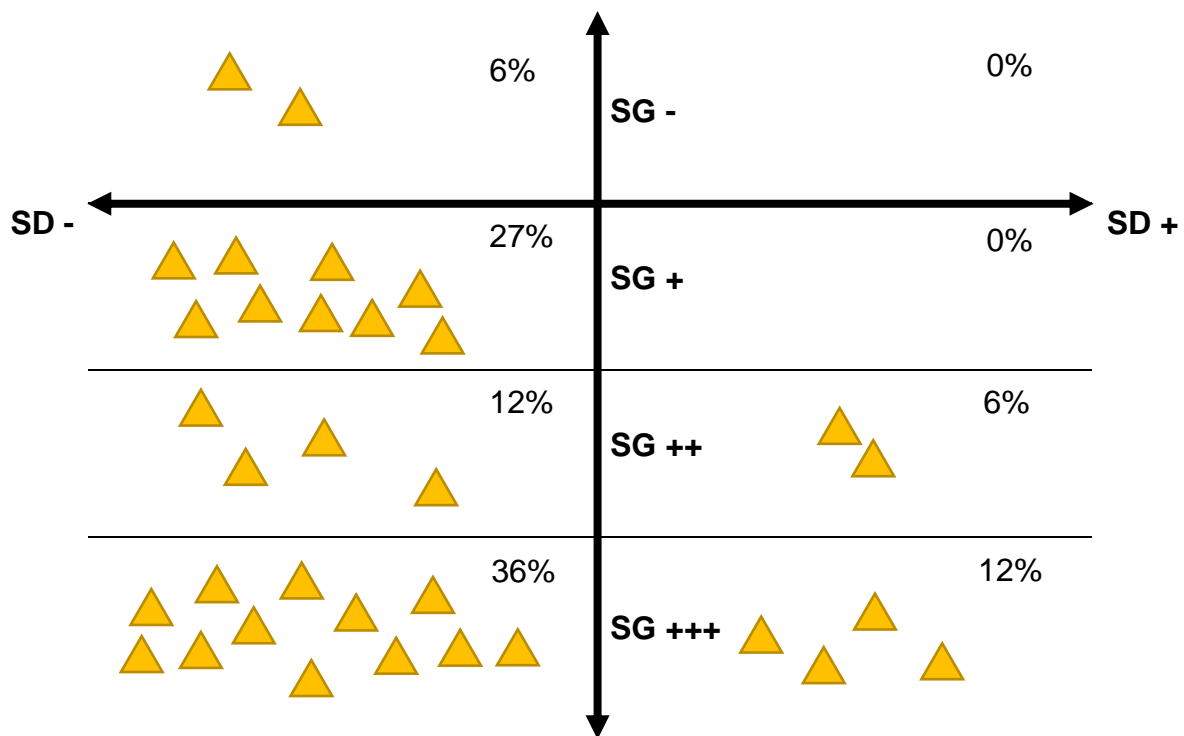
Figure 7.6-1: Semantics scatter plot of PGCE data

In EPRs P1, P2, and P4, we see the PGCE participants grounding their judgements in the context of the video itself. In EPR P4, Sarah makes the judgement that it is not acceptable to only use the prescribed text to support teaching and learning. She grounds her judgement in the context of the lesson itself by drawing on cues from the video: "She only gave them hand-outs which is a photocopy of her textbook and she used the board. She did make some attempt, but she didn't really go beyond that, she didn't give them other sources. She didn't develop her own" (EPR P4). It is clear that Sarah's judgement took direction from trends that she observed in the lesson. Charli, on the other hand, also grounded her judgement in the context of the video, but drew on *specific* incidents in the lesson to ground her judgement: "She started off in sequence but she got stuck on the graphs and it went on and on" (EPR P1).

PGCE participants hardly ever abstracted their judgement to a principle or rule of teaching. If anything, they abstracted from the context of the video, to a hypothetical context, such as in EPR P1 and EPR P3. Even when they do abstract their judgement to a hypothetical context, it is only for a moment, before reverting back to the context of the video. For example, in EPR P3, Jenna makes the judgement that Miss Mdluli spent too little time explaining the salient concepts in the lesson. She says:

> *I think she could have done more explanations, used more examples. <u>That would have occurred if she had done a little more research than she did, and maybe compared South African climate to another southern hemisphere climate or even done a bit of northern hemisphere. You don't want to confuse learners too much.</u> I'm not sure where she was in the syllabus* (EPR P3).

Here, Jenna begins by grounding her judgement in the context of the video – that she did not use enough examples. She briefly abstracts her judgement to a hypothetical, projecting what she would have expected Miss Mdluli to do, and that she should be careful not to confuse the learners. Jenna then moves straight back into the context of the video by saying that she does not know where Miss Mdluli was in the curriculum (in other words, what had already been covered and what she was still to teach the learners). The shifts in semantic gravity within her EPR could then be mapped as per Figure 7.6-2:
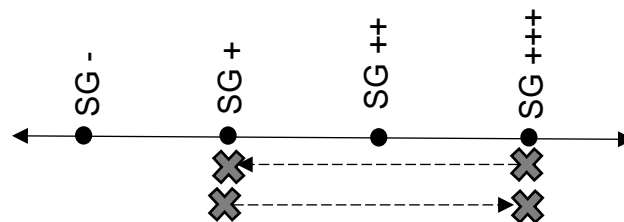
Figure 7.6-2: Semantic range of EPR P3

In the focus group interview, Jenna and Charli abstracted their judgements to hypothetical contexts. First, Jenna makes the judgement that Miss Mdluli needed to improve her questioning technique, and abstracts her judgement to a hypothetical context using if … then reasoning: "What she should have done, if not starting that, but sort of say to a specific learner, 'What is the definition?' And whether they get it right or wrong, sort of aid them in saying… well if it was wrong, say, 'Well no, it was wrong,' but ask another learner what is it. You know. So, it's not always, 'Oh it's the teacher who has the authority.'" Jenna's EPR could be mapped as per Figure 7.6-3:
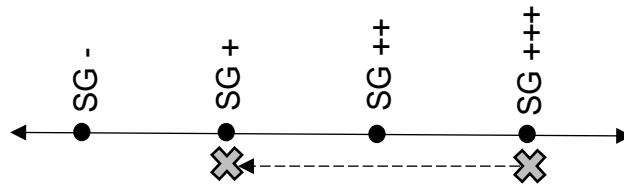
Figure 7.6-3: Semantic range of EPR P5 (Jenna in the focus group interview)

Charli shows a similar pattern to Jenna in her response to Jenna, but abstracts to a hypothetical context before shifting back to the context of the lesson. Charli begins by making her judgement which is grounded in the context of the classroom: "I think she should start using more meaningful questioning," and then abstracts to a hypothetical context: "So, when it comes to, 'Do you guys understand?' and the whole class just says, 'Yes,' you don't actually think half the class understands. So, if she can ask pointed questions that actually gauge what learners know, 'cause it's quite important when you come down to assessment later in the line. And just it's a better gauge of what learners know. 'Cause if you're disinterested, you're easily going to say, 'Yes,' because of course you're not going to want to spend too much..." Charli then strengthens the SG of her response by grounding her advice back in the context of the lesson: "So I think start using meaningful questioning, and ja, develop a better questioning technique. And maybe use it throughout." Her portion of EPR P5 could be mapped in a similar manner to Jenna's EPR in EPR P3, as unpacked previously. This excerpt from the focus group discussion is typical of conversations between PGCE participants in this study. Their semantic range is relatively narrow, moving between very very strong semantic gravity (the context of the video) and a hypothetical context. The PGCE participants' conversation does not reach abstraction to a principle or rule of teaching, as is shown in the semantic profile Figure 7.6-4 of the focus group discussion excerpt:
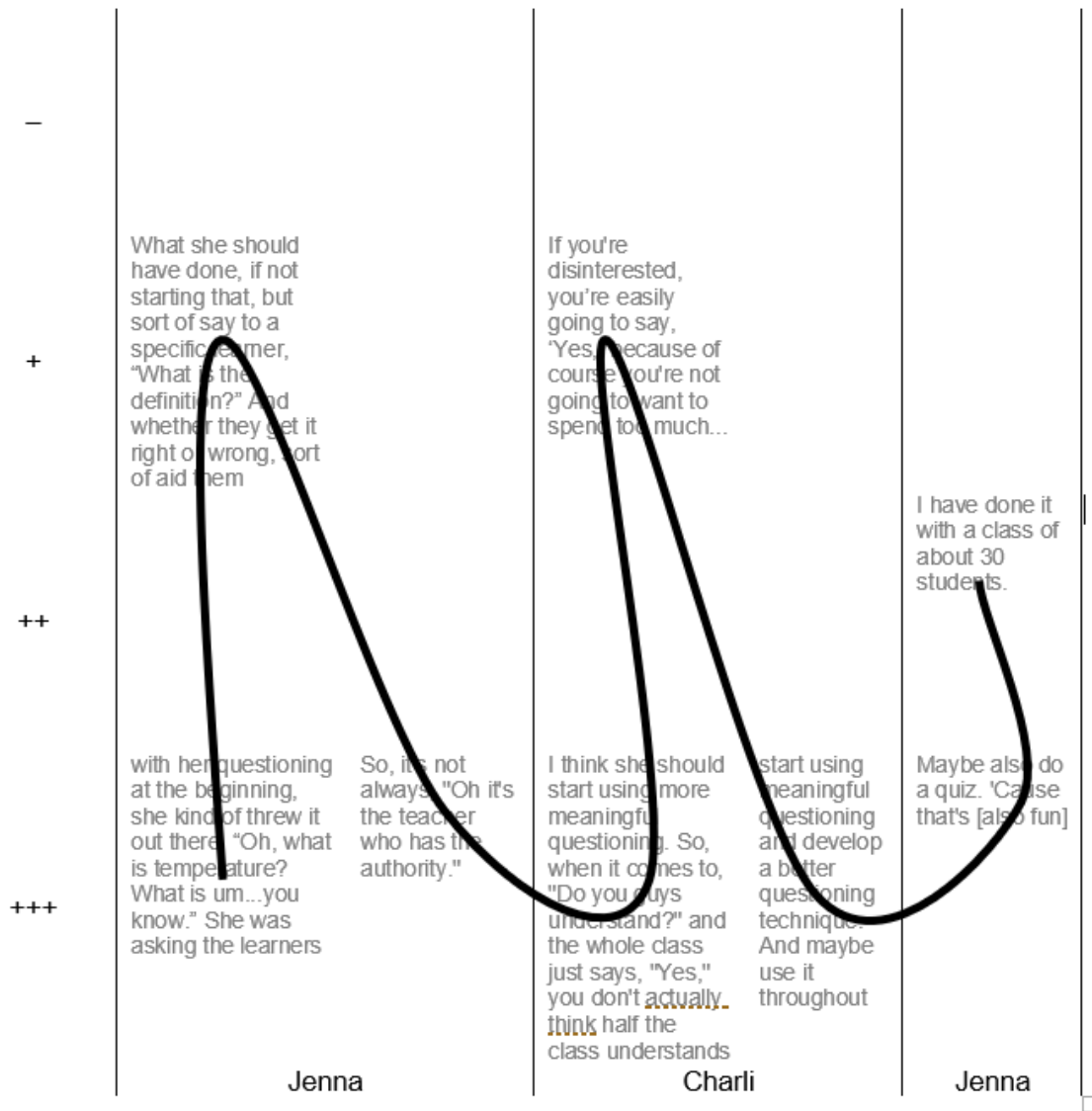
Figure 7.6-4: Semantic profile of EPR P5

PGCE participants generally grounded their judgements in the context of the lesson in the artefact of practice, sometimes abstracting it to a hypothetical context, and sometimes then strengthening the semantic gravity back to the context of the lesson in the video. I found it particularly interesting that they grounded their judgements in hypotheticals in their focus group interviews as this is not a shared context and relies on logical deductions which may not be accessible to others in the conversation. The presentation of data now moves to a description of the grounds for legitimation of the PGCE participants' EPRs, that is, the basis on which their EPRs rest: the places, interactions, or things that give their judgements legitimacy.

7.7 PGCE participants generally draw criteria for good teaching from their own reflections on their own practice, thereby using themselves as models of good practice

In general, PGCE participants tended to legitimise their EPRs using reflections on their own teaching (47% of the individual interview data, and 40% in the focus group discussion). Theory and feedback on their own teaching by a significant other accounted for 19% and 16% of their responses respectively in the individual interviews, and 20% and 0% of their responses respectively in the focus group interview. Their observations of knowledgeable others' practices were the basis for 13% of the EPRs in the individual interviews and 20% of the focus group EPRs. They drew on their Apprenticeships of Observations in 6% of their EPRs in the individual interviews, and 20% of the focus group EPRs. Like the Learnership participants, the PGCE participants didn't naturally voice their grounds for legitimation unless I asked them where they learned that something was important. As a result, only 5 of the 21 EPRs in the focus group were justified using a basis for legitimation because I did not interrupt the flow of the discussion to ask the participants where they had learned that what they were talking about was important.

PGCE participants draw on their reflections on their own teaching as bases for the legitimacy of their judgements in EPRs P1, P2, P3, and P4. In all of these EPRs, the PGCE participants gather together the criteria for good teaching from the 'pictures' of good teaching that they have developed through metacognition. The PGCE participants, however, do this in a variety of ways. Sometimes the participants reflected on a *general trend* that they picked up during their own teaching. Jenna, for example, bases her axiological claim that important work needs to be done in the classroom because learners do not take homework seriously on her reflections on "trial-and-error" experiences during their school-based practicum sessions (EPR P3). Jenna also legitimises her axiological claim that a good teacher dresses smartly and is presented in a professional manner in her reflections on her own experiences of teaching (EPR P2).

Sometimes, PGCE participants presented a *comparison* of experiences in which their reflections on the similarities and differences between those experiences give them the criteria for good teaching. In EPR P2, Jenna legitimises her axiological claim using comparative reflections on practice. She reflects on the outcomes of two contrasting experiences to conclude that a teacher needs to present herself professionally to maintain authority. It is through this comparison of outcomes, namely that whether or not she wore high heels to teach, she was able to maintain a professional way of being around the learners, and not "run around and freak out" as she put it.

Sometimes, the PGCE participants reflect on a *single experience* to legitimise their judgements. Sarah legitimises her judgement using her reflections on a specific experience where she was required to use the lesson preparation that was mandated by the school. She legitimises her axiological claim that a good teacher takes the initiative to develop her own resources using her reflections on the outcome of this lesson: her lesson was, in her eyes, a disaster because she could not develop and use her own teaching and learning support materials. Similarly, Jenna suggests that Miss Mdluli "[does] a quiz. 'Cause that's [also fun]" (EPR P5). Jenna legitimises her judgement that Miss Mdluli needs to ask more pointed questions and not position herself as the authority over all knowledge in the classroom by drawing on her reflections on a time where she assessed the learners' knowledge using a quiz. Jenna legitimises her judgement and her suggestion by describing the success of the intervention: "It went completely mad and was really loud. But the kids learned... what was going on" (EPR P5), and so Jenna has come to the conclusion that a quiz would work in Miss Mdluli's classroom because her reflections have helped her to develop a criteria for good teaching: a good teacher asks learners questions to assess their knowledge of the topic. Jenna had to interpret that criteria for good teaching from her perceptions of this particular experience, which is why this basis for legitimation is coded as having strong interactional relations. The criteria for good teaching are not as explicit was when she receives direct feedback on her teaching from a knowledgeable other, nor when she observes another teacher teaching, but the criteria are more explicit than when she learns a theory which informs teaching.

7.8 Pulling it all together: the ways in which pedagogical reasoning and judgements are communicated by PGCE participants

Throughout this chapter, the same EPRs have been presented, and it has been shown how the trends that were presented were gleaned from the EPRs. The data that has been presented builds a picture of the typical EPR of a PGCE participant. The PGCE participants' responses typically:

- Were critical of Miss Mdluli as a person, indicated by the foregrounding of how a teacher should be and the backgrounding of what a teacher should know and be able to do. They therefore made more axiological claims about teaching than they made knowledge claims, but both types of claims were relatively implicit.

- Began with a judgement before giving the criteria for good teaching, thereby weakening the SG of the EPR. They tended to ground their EPRs in the context of the lesson in the video (SG +++), but they could imagine a hypothetical alternative context in which things could (and often should) be done differently (SG +). They did not abstract the grounds on which they based their judgement to a context-free rule or principle.

- Used very everyday language and terminology to express their judgements and justifications of those judgements (SD -).

- Drew criteria for good teaching from their own reflections on their own practice (SubR -, IR ++), using themselves as implicit models of what Ms Mdluli should rather have done. This requires a significant amount of interpretation in order to extract the criteria for good teaching.

The typical PGCE EPR's 'profile' could then look something like:

Table 7.8-1: PGCE 'profile'

Dimension	Code	Interpretation	Strength
Specialization	Epistemic relations	Degree to which knowledge and skills are foregrounded	Backgrounded
	Social relations	Degree to which personal attributes are foregrounded	Foregrounded
Social	Subjective relations	Degree of access	-
	Interactional relations	Degree of explicitness of criteria for good teaching	++
Semantic	Semantic gravity	Degree of abstraction	+++ → +
	Semantic density	Degree of condensation of meaning	-

This chapter has systematically shown how the profile of a PGCE EPR was developed. The next chapter will discuss the findings of the BEd data analysis.

CHAPTER 8: PEDAGOGICAL REASONING OF BEd PARTICIPANTS

8.1 Introduction

This chapter presents the data analysis for the BEd participants. Like in Chapters 6 and 7 for the Learnership and PGCE participants' data, present the data analysis using five significant EPRs from the interviews with the BEd participants. These five EPRs can be found in Appendix F3, but will be referred to, with sections quoted from them, throughout this chapter.

The data analysis will pull out six features of the data, which help the reader to understand how I came to the conclusions about the BEd participants' pedagogical reasoning and judgements on practice. The first feature of the BEd's EPRs is that they were more critical of Miss Mdluli than they were positive, but that frequently their EPRs were more analytical than charged. Evidence for this claim from the key EPRs will be presented. Following on from that, the next feature of the BEd's EPRs that is presented is how they tended to begin their EPRs with a judgement, and then gave principles or criteria for good teaching to substantiate their judgement. Third, I present evidence to support my claim that the BEd participants' axiological and knowledge claims were relatively implicit, but that they made quite a number of knowledge and axiological claims in their EPRs. The fourth feature of the BEd's EPRs that I present data about is that the participants often used specialised, formal terminology and language to make, explain, and justify their judgements, and networked their ideas to form constellations of meaning. Fifth, I present evidence to support my claim that BEd participants ground their judgements mainly in the context of the lesson in the artefact of practice, but that they did also ground their judgements in their own experiences of teaching, hypothetical contexts, and in principles or rules of teaching. The sixth feature of the BEd's EPRs that will be substantiated is that the BEd participants tend to legitimise their EPRs using theory and their own reflections on their own practice. Finally, I present a 'profile' of a typical BEd EPR based on the findings of this study.

8.2 BEd participants were generally more critical than they were complimentary, but were also analytical in their judgements

BEd participants tended to be more critical of Miss Mdluli's teaching than they were complimentary. 66% of the EPRs in the individual interviews, and 75% of the EPRs in the focus group interview were negatively charged, with 29% and 22% of the EPRs being positively charged in the individual interview and focus group discussion, respectively. The kind of language that the BEd participants used to express the charge of their judgements is now presented and discussed.

As did many other participants in this study, the BEd participants negatively charged their judgements by expressing a deficiency in Miss Mdluli's practice. Karabo (EPR B1), for example, says: "What she was saying was very brief and just came from the textbook. She did not use much analogy or kind of look at how she can use the learners' prior knowledge to extend what she is trying to teach. It felt like it was very limited to just the textbook." Here, Karabo uses words like "just," "much," and "limited" to express that there was something missing from Miss Mdluli's lesson. In this case, it was her knowledge of the content. Similarly, in the focus group discussion (EPR B5), Shanae indicates a deficiency by saying: "… it felt like she only knew what was in the textbook, and I think that's why she relied on it so much." The word "only" shows that Shanae feels like Miss Mdluli's knowledge was limited and needed to be deepened in order to teach effectively.

When highlighting something that Miss Mdluli did incorrectly, BEd participants said things like: "… the notes are handed out and she mentioned the headings on each of the worksheets or hand-outs and then said 'so that's what we are going to do today'. There was no clear introduction: 'Today we're doing climate. We are going to be looking at temperature and rainfall which forms part of climate'" (EPR B2). Shanae uses the word "no" to indicate that she feels that what Miss Mdluli did – handing out notes and going through the headings on them – was insufficient and did not help the learners understand the conceptual structure of the knowledge. She also expresses

the negative charge by indicating a deficiency, but this example tends to rather highlight an incorrect approach than a deficiency in the approach. After I asked Shanae whether the main idea of the lesson was clear to her, she replied with, "No, not clear what the main point was." Again, her words show that there was a fault with Miss Mdluli's explanation. Tarryn (EPR B3) also highlights a problem with Miss Mdluli's actions: "She didn't explain; she just told." Tarryn does two things here. She first presents a criteria for good teaching (a good teacher explains), negatively charges it to indicate that Miss Mdluli did not adhere to that criteria (through the use of the word "didn't", and then negatively charges her actions: "she just told", indicating that 'telling' is insufficient

The BEd participants' analysis of Miss Mdluli's teaching was often less charged, and more analytical. What this means is that they did not say how they felt about her teaching. They went straight into an analysis of the contextual cues that led them to score her as they did using the assessment rubric (Appendix C2). They presented descriptions that are then unpacked without the level of praise/critique that is seen in other participant groups' responses. Shanae, for example, does not charge her response to Miss Mdluli's teaching: "Due to her intro – the notes are handed out and she mentioned the headings on each of the worksheets or hand-outs and then said 'so that's what we are going to do today'. There was no clear introduction: 'Today we're doing climate. We are going to be looking at temperature and rainfall which forms part of climate.' Just like a simple sentence because that would…" (EPR B2). Shanae makes her judgement that Miss Mdluli did not conceptualise the content of the lesson adequately but did not charge it at all. She immediately unpacks Miss Mdluli's actions in the lesson and analyses them for their suitability to communicate the conceptual structure of the content to the learners. Similarly, in EPR B3, Tarryn foregrounds the analysis of Miss Mdluli's teaching and backgrounds her feelings about it. She begins by saying that if she were a learner in the classroom in the video she would be confused, and then unpacks why this was so. She unpacks why 'telling' instead of 'explaining' is required and gives suggestions for Miss Mdluli to improve her practice.

Overall, the BEd participants used negative language, or language to indicate a deficiency to negatively charge their EPRs. They also used negatively charged language to highlight a problem with Miss Mdluli's practice. Finally, their EPRs were frequently more analytical than they were charged.

8.3 BEd participants generally started their EPRs with a judgement, and then gave criteria or principles for good teaching

As did the other participants in this study, the BEd participants tended to begin their EPRs with a judgement about Miss Mdluli's practice before unpacking their judgement by giving criteria for good teaching. As has been seen in Section 8.2, their judgements were usually negatively charged, and followed with a suggestion of what Miss Mdluli should have done, thereby giving their criteria for good teaching in that particular instance. I will argue that the BEd participants make their judgement but move on quickly to the criteria for good teaching without dwelling on the explanation for their judgement for too long.

A clear example of this swift movement into the criteria for good teaching is seen in EPR B2, where Shanae begins with the explanation of her judgement, then her judgement: "There was no clear introduction" (EPR B2), and then moves into the criteria for good teaching. Her unpacking reveals that her criteria for good teaching involves introducing the big ideas and sub-ideas to illustrate the conceptual structure of the knowledge. Similarly, Tarryn begins her contribution to the conversation with a judgement which is a single sentence: "… for me it just didn't seem like she knew what she was teaching" (EPR B5), Tarryn then immediately begins the process of describing the consequences of a teacher being unfamiliar with the content being taught in the lesson, thereby revealing her criteria for good teaching: "if you don't know what you're teaching, you're not able to teach it, and then the learners can pick it up, and they're not able to learn. And you can't answer questions…" (EPR B5). Tarryn is revealing that for her, a good teacher knows and understands the content of the lesson in order to enable the learners to learn. But what Tarryn also does, is network her criteria for good content knowledge to other criteria for good teaching. She connects it to confidence, pedagogy, and questioning. Tarryn, like the other participants do in

this part of the focus group discussion, makes her judgement, but then networks it to other ideas, presenting the knowledge of the practice of teaching as a coherent whole. However, she does this by moving away from the judgement into knowledge claims. I will unpack the knowledge claims and networking of ideas later in this chapter, but I am bringing it in here to illustrate how Tarryn moves on from the judgement very quickly. She does it in a rational way – it is not that she shifts focus in her discussion. She makes the links between different ideas through a process of reasoning.

In EPR B3, Tarryn makes the judgement that Miss Mdluli's communication abilities were not, in her eyes, at a level that they should be. Tarryn begins with her judgement: "She didn't explain; she just told. 'A desert climate has high temperatures and low rainfall.'" Tarryn makes her judgement that Miss Mdluli was unable to explain and briefly explains herself by giving an example from the video. Tarryn immediately moves into what she thinks Miss Mdluli should have done by negatively charging her lack of particular actions: "There wasn't 'because' or 'why,' or 'this is how it happens,' or other examples. There weren't many examples like, 'Look at the desert here, look at this region, tell me about it.' There wasn't any of that interactive… it was just, 'This is what it is.' It wasn't, 'What do you think?', 'Do you understand?', 'Tell me your understanding of it.' There was no feedback" (EPR B3). Tarryn, in saying what Miss Mdluli did not do, reveals her criteria for good communication. For Tarryn, good communication with learners' answers questions such as 'why' and 'how' and involves questioning to monitor learner understanding. Tarryn then moves back into an example from the lesson in the video which substantiates her judgement that Miss Mdluli did not give adequate feedback to learners when they answered questions. This is similar to in the PGCE data where we saw the participants 'book-ending' their EPRs with related but different judgements. Tarryn's EPR begins with a judgement on Miss Mdluli's communication abilities, but the final judgement is about how she did not entertain answers which deviated too far from the textbook from the learners.

We see another example of 'book-ending' of the EPRs in EPR B4. Tracy begins her EPR with a positively charged judgement that Miss Mdluli could elaborate on learners' incorrect answers, and she ends it with another judgement that Miss Mdluli "she was

asking questions and giving answers at the same time" (EPR B4). Notice how Tracy's two judgements are somewhat related: both are about Miss Mdluli's engagement with learners around their questions, but through speaking about how Miss Mdluli elaborates on learners' answers, Tracy comes to a new conclusion that she sometimes asked and answered her own questions.

This section has looked at how the BEd participants structure their EPRs. It has presented data to support the claim that BEd participants initiate their EPR with a judgement of Miss Mdluli's practice, but very quickly move into describing their criteria for good teaching. They also tend to 'book-end' their EPRs with related but different judgements on practice.

8.4 BEd participants' made knowledge and axiological claims, and both were relatively implicit, and they often used specialised, formal terminology and language to make, explain, and justify their judgements, and networked their ideas to form constellations of meaning

BEd participants in this study made a number of knowledge claims in their EPRs. They tended to make knowledge claims (foregrounding the epistemic relation) as well as axiological claims (foregrounding the social relations) about teaching. They tended to foreground the knowledge of teaching, and the knower. All of their knowledge or axiological claims, however, were relatively implicit. Furthermore, in order to make these claims, the BEd participants used specialised, formal language and terminology. They were therefore able to network their ideas into condensed networks of meaning.

There are a number of examples in the data that show how the BEd participants made knowledge claims. In EPR B1, Karabo makes a knowledge claim when she says, "She did not use much analogy or kind of look at how she can use the learners' prior knowledge to extend what she is trying to teach." While Karabo is referring to Miss

Mdluli through the use of the word "she," the claim that Karabo is making is about the knowledge that the teacher should have, thereby foregrounding the epistemic relation. She is making the claim that a teacher needs to consider the learners' prior knowledge when preparing a lesson. Similarly, in EPR B2, Shanae makes the knowledge claim that knowledge needs to be structured for learners to understand when she says, "There was no clear introduction: 'Today we're doing climate. We are going to be looking at temperature and rainfall which forms part of climate.' Just like a simple sentence because that would… I don't think the learners knew whether they were concentrating on temperature, climate or rainfall and then there were the different types of climate." Shanae, in making the judgement that Miss Mdluli did not communicate the conceptual structure of the knowledge effectively to the learners, makes the claim that a teacher needs to know and explain the conceptual structure of the knowledge to the learners.

Tarryn, in EPR B3, makes a more explicit knowledge claim when she says," because it's good that they do come up with their own interpretations because then they understand, if they just mimic the textbook then they haven't understood." Tarryn is explicitly saying that a mark of understanding is being able to interpret knowledge, and it is on this knowledge claim that she bases her judgement that the learners did not understand the knowledge that they were being taught because "She didn't explain; she just told" (EPR B3). Tracy also makes a relatively explicit knowledge claim about the role of learners' everyday knowledge in a lesson: "[start] with their everyday knowledge, asking them about present weather conditions, just to maybe lead to their understanding of temperature and climate" (EPR B4). In all of these examples, the BEd participants foreground the epistemic relation, and background the social relation. In other words, they focus on what the ideal teacher should know and be able to do, as opposed to how the ideal teacher should be.

BEd participants also made axiological claims about teachers in the EPRs. For example, in EPR B1, Karabo makes the axiological claim that a teacher should not be unclear as to what she is communicating to the learners when she says: "When you

are a teacher you don't say, 'Something like that.' It's either 'that' or 'not'." This claim is not about what a teacher should know or be able to do – it is about how a teacher should be, thereby foregrounding the SR and backgrounding the epistemic relation. Karabo is saying that a teacher should *be* clear when teaching and not 'sit on the fence' when answering the learners' questions. Tracy also makes an axiological claim when she says, "I saw that she did her research, and she also gave example of equator, some countries close to equator, experience rain and all those things" (EPR B4). Tracy is making the axiological claim that the teacher should be knowledgeable to answer the learners' questions and foregrounds the SR of this EPR as she is speaking about how Miss Mdluli *is*. In conversation with her peers, Karabo also made an axiological claim about how Miss Mdluli should be when she said that a teacher must make the learners feel comfortable (EPR B5). This is not a claim about what a teacher should know or do, it is about how the teacher should be and how the teacher needs to create a feeling or atmosphere in the classroom. Interestingly, though, both of Karabo's axiological claims are explicitly oriented towards making the knowledge more accessible to the learners. Karabo explains that if you do not know your content and have not planned how you are going to explain it, "it might end in disaster" (EPR B1). She speaks about how if the teacher knows the content, the learners are able to be more active in the lesson, and are "free to just ask a question" (EPR B5), which will open up access to the knowledge.

This section of the chapter has presented data around the axiological and knowledge claims of BEd participants. I have shown that BEd participants make a number of knowledge claims, and that their axiological claims are explicitly oriented towards improving teaching and learning. BEd participants' EPRs tend to foreground both the epistemic relation and the social relation in their EPRs. With the fact that BEd participants foreground the epistemic relation, making knowledge claims, I now present the way in which they expressed the claims, and how they linked the claims to one another.

8.5 BEd participants used formal, specialised language and terminology to make, explain, and justify their judgements, networking their ideas in conversation

The BEd participants tended to use more formalised, teaching-specific language when making their judgements and unpacking the criteria for good teaching. Karabo speaks about how Miss Mdluli did not "use the learners' prior knowledge to extend what she is trying to teach" (EPR B1). Karabo uses words that condense particular meaning in the field of education, which are more specialised than if she were to say something like "use what the learners already know to start the lesson." The latter essentially means the same thing, but is not expressed using the formal, nuanced language that Karabo uses to describe her observation. In EPR B2, Shanae speaks about the "big ideas" and "sub-ideas" in knowledge[86]. This is once again more specialised, more semantically dense (SD +) concepts that she is using to unpack the criteria for good teaching, and make the knowledge claim that the conceptual structure of knowledge needs to be communicated to learners in a lesson.

The most telling example of the use of specialised terminology and language, leading to the networking of ideas is in EPR B5. This is an excerpt from the BEd participants' focus group discussion. I will give a brief summary of the conversation before drawing out the salient points: Tarryn begins by making the judgement that Miss Mdluli did not understand the content that she was teaching. Shanae picks up this point and agrees with Tarryn and adds that Miss Mdluli's lack of content knowledge meant that she was unable to entertain learner answers that were not quite aligned to her envisioned answers. Tarryn responds positively, bringing the aspect of learner interpretation and meaning making to the conversation. Karabo joins the discussion at this point, agreeing with Shanae and Tarryn, but she adds that the learners did not feel comfortable to ask and answer questions in the classroom because Miss Mdluli was looking for specific answers. Tarryn responds, making the link that "if she felt

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[86] Shanae advises Ms Mdluli to show the learners the "main topic and there is a whole lot that falls under that". Thereafter, I give her more formal terminology for her idea – "big ideas and sub-concepts", which Shanae took up in her subsequent rationale. While I gave her the formal terminology for her idea, her idea still has a relatively strong semantic density.

comfortable teaching then she'd feel comfortable with the learners discussing it" (EPR B5). Tracy now enters the conversation, agreeing with her colleagues' points. Tracy adds that a lack of content knowledge also makes it difficult to select relevant examples for the learners, which is followed by Shanae's response. Shanae kind of pulls the conversation together by formalising the points that the participants have made. She takes the conversation to the topic of lesson preparation, and then brings in all of the points that the other ladies have made. I quote Shanae here, because I feel that if I were to try to paraphrase what she said, I would be doing her a disservice:

> … there was absolutely nothing in her lesson plan about learner prior knowledge, or learner misconceptions. And knowing that beforehand would have helped her in teaching her lesson. 'Cause then she'd know which examples to use, that would be relevant to the learners. She'd pick up on where they might have difficulty in the lesson (Shanae, EPR B5).

I will first consider the kind of language and terminology that the BEd participants used in this conversation. The conversation was quite informal in general, with the use of contractions, such as 'cause' instead of 'because,' and referring to their colleagues as 'you guys.' For the most part, the participants used rather everyday language to make their points. Tarryn, for example, speaks about learners being able to "pick up" what the teacher is saying, and Shanae speaks about "getting to know the content." At the end of the conversation, however, Shanae picks up the points that her colleagues make and abstracts them to formal concepts – Shanae and her colleagues knew what each of them were speaking about because they have a shared language for it. Shanae formalises concepts like learner misconceptions, prior knowledge, and relevant examples, all of which were brought up in more everyday language by her colleagues in the discussion.

I now turn to the networking of the ideas in this conversation. The conversation was centred around the BEd participants' perception that Miss Mdluli did not fully understand the content knowledge that she was teaching in the lesson in the artefact of practice. Instead of just making the judgement that Miss Mdluli did not understand

the content, Tarryn briefly links it to how it could be a problem when asking and answering learners' questions, confidence in the classroom, classroom discipline, and monitoring of learning. Shanae then links the knowledge of the content back to the asking and answering of questions in a bit more depth than Tarryn did. Tarryn responds, networking the knowledge of content to the monitoring of understanding a bit more clearly than she did initially. Karabo then networks the importance of having a deep content knowledge to opportunities for active learning and participation, which Tarryn echoes in her response. Tracy networks it to the selection of relevant examples to enable learners' access to the knowledge. Shanae then implicitly networks all of these points to the concept of pedagogical content knowledge (without saying it in so many words). She draws these ideas together to speak about how knowledge of content together with knowledge of the learners enables the teacher to select relevant examples and teaching strategies to allow learners to access the knowledge. The BEd participants, then, in their conversation, develop a constellation of ideas around the topic of a teacher's content knowledge which is illustrated in Figure 8.5-1:
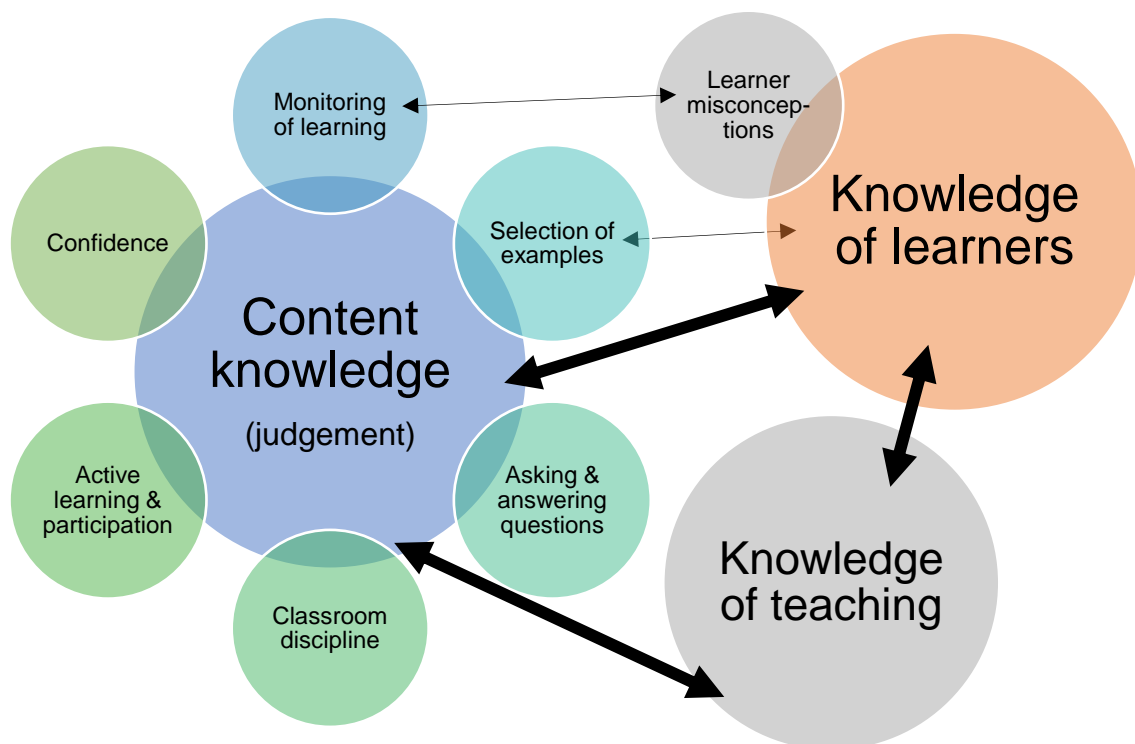
Figure 8.5-1: Networking of BEd participants' conversation

This section has discussed how the BEd participants used formal, specialised language in their EPRs, and how they network ideas to condense a constellation of

meaning. This indicates a relatively strong semantic density (SD+). The next section builds on the evidence presented in this section by arguing that the BEd participants abstract their ideas to hypothetical contexts and principles of practice (thereby weakening the semantic gravity), while strengthening the semantic density of their EPRs.

8.6 BEd participants ground their judgements in response to the artefact of practice, and abstract their rationale to hypothetical contexts, and principles or rules of teaching

BEd participants, like the other participants in this study, tended to ground their judgements in the context of the video (SG +++). 73% of the EPRs in the individual interviews, and 68% of the EPRs in the focus group interview were grounded in the context of the video itself. The BEds, however, tended to abstract their rationale out of the context of the video, thereby extending the semantic range of their EPR. Figure 8.6-1 shows the distribution of the EPRs on the Semantic plane. It shows how the BEd participants' EPRs generally used more specialised language and terminology to express their EPRs, and that their language condensed significant meaning. It also shows how their EPRs were predominantly in response to the context of the lesson in the video. It will be shown later how the BEd participants' rationales for their judgements were abstracted to hypothetical contexts and principles or rules of teaching.
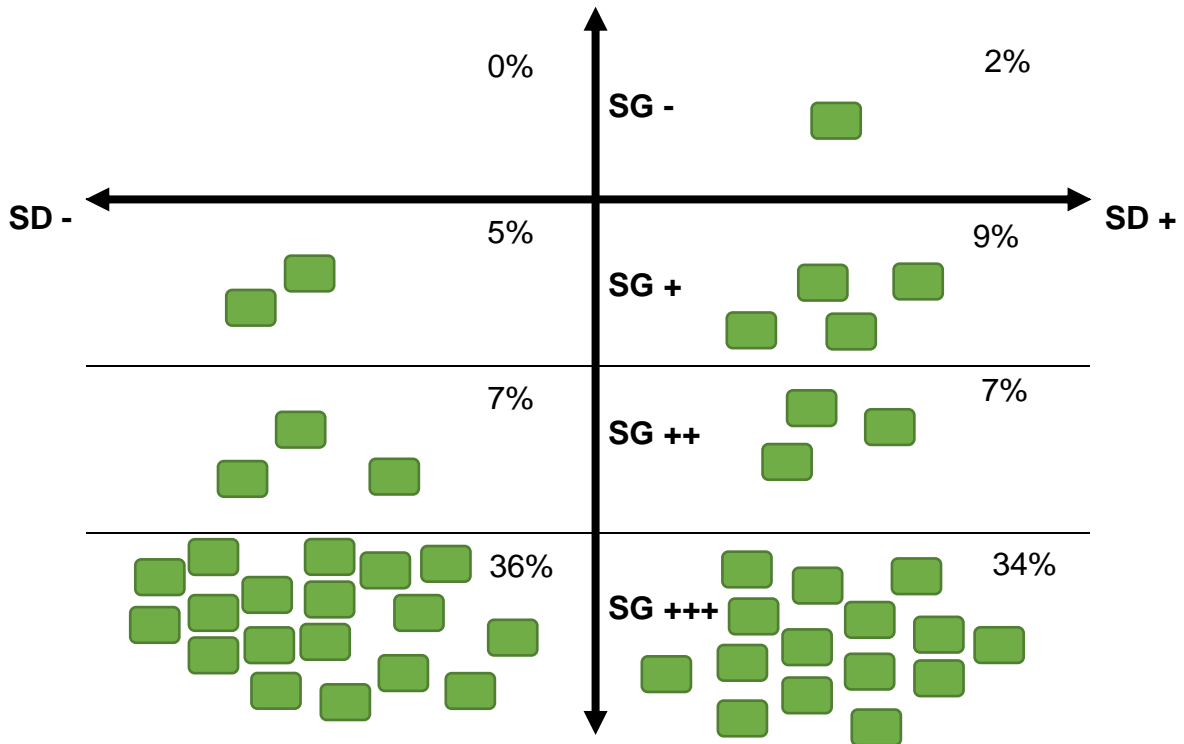
Figure 8.6-1: Semantics scatter plot of BEd data

Every one of the key EPRs has an initial judgement in response to the context of the video (SG +++). In EPR B1, for example, Karabo grounds her judgement that Miss Mdluli did not understand the content of the lesson by saying: "What she was saying was very brief and just came from the textbook. She did not use much analogy or kind of look at how she can use the learners' prior knowledge to extend what she is trying to teach." Similarly, Shanae, in EPR B2, grounds her judgement in what she saw in the video: "the notes are handed out and she mentioned the headings on each of the worksheets or hand-outs and then said 'so that's what we are going to do today'. There was no clear introduction." These participants, after making their judgement that was in response to the context of the lesson in the video, abstracted the criteria for good teaching from the context.

In EPR B1, Karabo transfers her attention to an alternate hypothetical context. She elaborates, "she might know the lot but then just the preparation and planning might have been very little such that when she got into the classroom because she had not prepared she could not really access all those things that she might have known. That's why planning is very important." Karabo weakens the SG of her EPR to a hypothetical context, which is evidenced by her use of the word "might." She begins

to explain the importance of planning in a lesson by giving a hypothetical scenario, but then abstracts further to a principle of practice when she explains how important it is to plan how you are going to explain an idea to the learners: "Even in explanations, you need to know your content, you need to plan" (EPR B1). Karabo widens the semantic range of her EPR by abstracting from the context of the video to a principle of practice. The semantic range of her EPR can thus be mapped as per Figure 8.6-2:
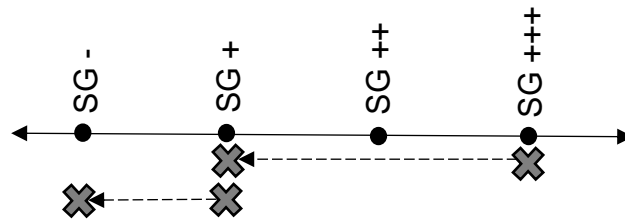
Figure 8.6-2: Semantic range of EPR B1

Shanae (EPR B2), also abstracts her rationale but does not first abstract to a hypothetical context, and then to a principle. She makes her judgement that Miss Mdluli did not conceptualise her lesson well, and then immediately begins to abstract her rationale to a principle of practice: "This is our main topic and there is a whole lot that falls under that" (EPR B2). Although Shanae presents her abstraction as an "even if" statement, she is proposing a solution which is a principle of practice, namely that knowledge has conceptual structure and to teach that knowledge is to reveal its conceptual structure to the learners. The SG of Shanae's EPR can therefore be mapped as per Figure 8.6-3:
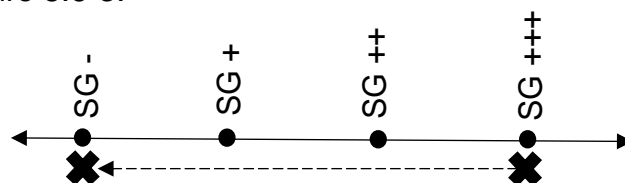
Figure 8.6-3: Semantic range of EPR B2

We see the same pattern, where Tarryn makes a judgement about Miss Mdluli's questioning approach in EPR B3. She abstracts to a principle or rule that learners' repetition of information does not mean that the knowledge has been understood. Tarryn makes the knowledge claim that understanding is evidenced by a learner's ability to *interpret* the information in new ways. Tracy also abstracts her judgement to a principle of practice in EPR B4, saying that the teacher needs to start with the

learners' prior knowledge and experiences (what she calls their 'everyday knowledge') before extending their understanding in the lesson.

In the focus group discussion in EPR B5, the participants engage in semantic waving, between the context of the lesson and the hypothetical, before abstracting to networked principles at the end of the excerpt. The semantic profile of the conversation can be mapped in Figure 8.6-4:
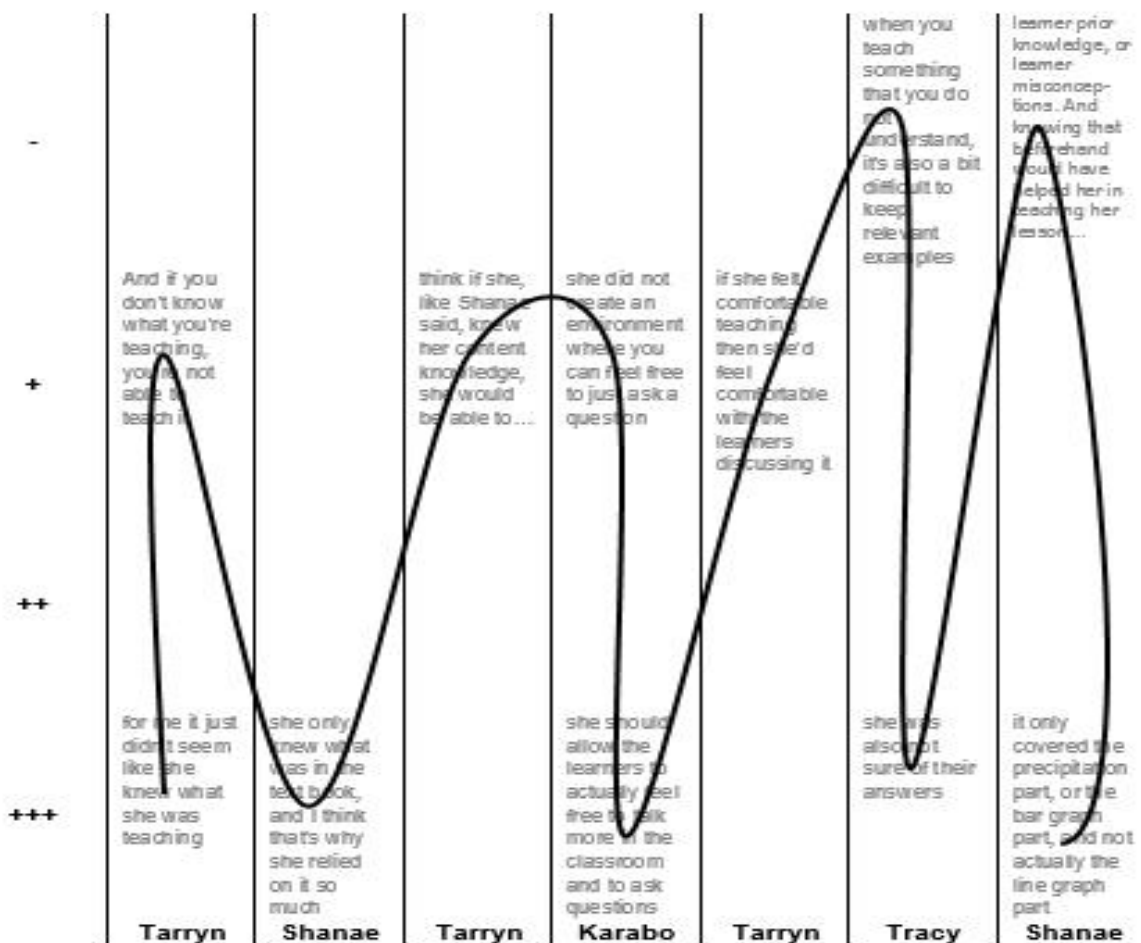
Figure 8.6-4: Semantic profile of EPR B5

The semantic range of the BEd participants' conversation is relatively wide as it moves from the context of the video to the hypothetical, to the theoretical, and back again. This shows how the BEd participants are able to pick out salient features from the lesson in the video, and express possible consequences of them (or not doing them), as well as justifying and grounding their judgements in theoretical principles of teaching. This reveals that the BEd participants are able to see the teaching beyond

the artefact of practice. They have a wider view of teaching in which to ground their judgements. Their responses demonstrate teaching as a theoretically principled practice and are able to network real-life experiences with theoretical principles, and vice versa.

This section of the analysis has presented data around the SG of the BEds participants' EPRs. It has shown how the BEd participants grounded their judgements in the lesson in the video, but that they quickly abstract their judgements to a hypothetical context, and/or a principle or rule of practice. It has also presented the sematic range of the BEds' conversation in the focus group discussion.

8.7 BEd participants legitimise their EPRs using theoretical concepts as well as their own reflections on their own practice

Up to now, this chapter has presented data around what the BEd participants said about Miss Mdluli's teaching, arguing that they were generally more critical than they were complimentary, and has shown evidence of this by analysing the kind of language that they used to make their judgements. It has also argued that the participants began their EPRs with a judgment, before unpacking the criteria for good teaching, and sometimes 'book-ended' their judgements. Then, I argued that the BEd participants made knowledge and axiological claims on practice in their EPRs, and then looked at how they used formalised language to do so. Finally, the chapter has presented data around the SG of the BEd participants' EPRs. Now, I turn to a presentation of the findings around how the BEd participants legitimised their judgements.

At times, BEd participants legitimised their judgements in theoretical ideas, coded as IR -, in 52% of the EPRs in the individual interviews, and in one of the two vocalisations of a basis for legitimation in the focus group interview. They legitimised their judgments in their own reflections on their teaching in 27% of the EPRs in the individual interviews, and not at all in the focus group; in their observations of experienced

practitioners during their ITE programmes in 11% of their EPRs in the individual interviews; in specific feedback that they received on their own teaching in 6% of their EPRs; and in their apprenticeships of observation (Lortie, 1975) in 2% of the EPRs in the individual interviews, and the other vocalisations of a basis for legitimation in the focus group interview. The BEd participants only vocalised their grounds for legitimation when I prompted them to in the individual interviews. In the focus group discussion, however, which saw me retreat from the conversation somewhat, they did not vocalise their grounds for their judgements, and, as a result, only two EPRs had bases for legitimation expressed. I find this interesting because the BEd participants in this study had been required to give their bases for legitimation when planning lessons, for example. Perhaps these processes of justification had become tacit by the time they participated in this study and were only vocalised when requested. They were, however, able to clearly express where they learned that something was important when asked.

The BEd participants drew much legitimation for their judgements from theoretical ideas or principles, which was coded as IR -. The interactional relations are relatively weak as the pre-service teacher has to do a certain amount of recontextualisation and interpretation to extract the criteria for good teaching. Tracy (EPR B4) explicitly locates her judgement in a principle of practice, and even cites the academic author and a very close paraphrasing of his words: "I think it was Lee Shulman – 'you cannot teach what you don't understand[87]' … Doing the research does not mean just doing it but making sure that you understand." Tracy says that she has always kept this principle in mind when planning and teaching lessons, and even says that she thinks about her content knowledge when reflecting on her lessons[88].

Shanae does not mention a specific theory or theorist as Tracy does, but she does legitimise her judgement that Miss Mdluli did not conceptualise her lesson appropriately. Shanae draws on her knowledge of the conceptual structure of 'school

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[87] A paraphrasing of "To teach is first to understand" (Maton, 2016, p. 14).
[88] The university at which Tracy completed her BEd programme requires all pre-service teachers to reflect on their own teaching in a reflection journal.

knowledge': that formal knowledge has organising structures. She explains this principle: "We've done the big ideas and then sub-ideas and seen how your key questions that you are going to ask and the key ideas that they should know should be your big ideas and then you get sub-ideas that would assist and they form a big part of your big ideas and then you get just extra information that fills the gaps" (EPR B2). Both Tracy and Shanae's bases of legitimation have a relatively weak IR because they have had to recontextualise the theoretical ideas into a teaching and learning context. Tracy has had to recontextualise from a theoretical article, which was not exclusively written about teaching in a school, particularly a South African inner-city school. Shanae has drawn on knowledge that has been recontextualised from writers on epistemology and the structuring frameworks of knowledge in general, in order to make sense of the concerns that she observed in the video.

At other times, BEd participants drew on their own reflections on practice to legitimise their judgements (coded as IR ++). In EPR B3, for example, Tarryn firmly legitimises her judgement in her reflections on her own practice: "Trial and error. You find out in prac when you teach, you talk to children and you get results back and nothing is there and you change your practice and over the years you realise that this is how it should be done." Tarryn's words actually explain why her basis for legitimation has a stronger IR than Shanae or Tracy's (in EPRs B2 and B4). Tarryn says, "you talk to children and you get <u>results</u> back … and you change your practice…" The interactional relations are stronger in Tarryn's EPR because of the feedback from the lesson that you reflect on after the lesson. Tarryn received feedback from the learners' in-class questions and answers, her impressions of their understanding when marking books or activities, and so on. The interactional relations are not very strong though, because she had to deduce or interpret what the course of action based on this feedback would be, or in other words, what the criteria for good teaching would be. There were more interactions, though, than if she were recontextualising these criteria from theoretical ideas. BEd participants also legitimised their judgements in their observations of other expert practitioners (IR +++) and specific feedback on their practice from an expert practitioner (IR ++++).

This section has presented the data about the BEd participants' bases for legitimation of their EPRs. It has shown how the interactional relations are stronger and weaker in the various examples. I now pull all of the data that has been presented in this chapter together.

8.8 Pulling it all together: the ways in which pedagogical reasoning and judgements are communicated by BEd participants

Throughout this chapter, the same EPRs have been presented, and it has been shown how the trends that were presented were gleaned from the EPRs. The data that has been presented builds a picture of the typical EPR of a BEd participant. The BEd participants' responses typically:

- Were critical of Miss Mdluli's knowledge and skills, indicated by the foregrounding of what a teacher should know and be able to do (ER +) and the foregrounding of how a teacher should be (SR +). They therefore made knowledge claims about teaching as well as axiological claims, but both types of claims were relatively implicit.

- Began with a judgement before giving the criteria for good teaching, thereby weakening the semantic gravity of the EPR. They tended to ground their EPRs in the context of the lesson in the video (SG +++). They tended to abstract their EPRs to a hypothetical context (SG +), and then abstracting it to a principle or rule of teaching (SG -), especially in conversation with one another.

- Used more formal, specialised language and terminology to express their judgements and justifications of those judgements (SD +).

- Drew on *both* personal experiences as a pre-service teacher and theoretical ideas (SubR -, IR ++ & -). Theoretical ideas as a basis for legitimation requires a very significant amount of interpretation in order to extract the criteria for good teaching. They also legitimised their judgements in their own reflections on teaching, observations of expert practitioners, and feedback from expert practitioners (IR ++, +++, and ++++, respectively).

The typical BEd EPR's 'profile' could then look something like Table 8.8-1:

Table 8.8-1: BEd 'profile'

Dimension	Code	Interpretation	Strength
Specialization	Epistemic relations	Degree to which knowledge and skills are foregrounded	Foregrounded
	Social relations	Degree to which personal attributes are foregrounded	Foregrounded
Social	Subjective relations	Degree of access	-
	Interactional relations	Degree of explicitness of criteria for good teaching	- / ++
Semantic	Semantic gravity	Degree of abstraction	+++ → + / -
	Semantic density	Degree of condensation of meaning	+

This chapter has systematically shown how the profile of a BEd EPR was developed. The next chapter will discuss similarities and differences between the three participant groups' data and draw interpretations therefrom.

SECTION D:

DISCUSSION AND CONCLUSION

CHAPTER 9: DISCUSSION OF FINDINGS

The previous three chapters have presented the findings of the three participant groups separately. They have presented an analysis of the data using five selected EPRs from each group. I now look across each of the participant groups to present a comparison of the features of their EPRs, and begin to address the question raised by this research: To what extent do different pathways of initial teacher education result in newly-qualified teachers who share the same set of practices? As argued previously, I have not investigated all aspects of their practice, but rather focused on their pedagogical reasoning in response to a recorded lesson they observed, analysed and evaluated

9.1 Introduction

At the end of each of the findings chapters, I presented a 'profile' of the typical EPR for each participant group. These 'profiles' will guide my discussion, and so I have drawn together an amalgamated table of the three 'profiles':

Table 9.1-1: 'Profiles' of all three participant groups

Dimension	Code	*Learnership*	*PGCE*	*BEd*
Specialization	*Epistemic Relations*	Backgrounded	Backgrounded	Foregrounded
	Social Relations	Foregrounded	Foregrounded	Foregrounded
Social	*Subjective Relations*[89]	-	-	-
	Interactional Relations	++	++	- / ++
Semantic	*Semantic Gravity*	+++ → +	+++ → +	+++ → -
	Semantic Density	-	-	+

In general, the Learnership and PGCE participants presented very similar types of EPRs, while the BEd participants presented different types of EPRs to the PGCE and

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[89] The SubR row is greyed out because it was argued in the Conceptual Framework chapter that the subjective relations are necessarily weak in this study as there are no admission requirements based on personality criteria in order to gain access to ITE programmes that were undertaken by participants in this study. It is therefore included in order to give a complete code for the social dimension but has no bearing on the findings of this study, which is why I have chosen to grey it out in the table.

Learnership participants. Briefly, the responses of BEd participants to Ms Mdluli's lesson had different Specialization, Semantic, and Social profiles to the responses from PGCE and Learnership participants. I now turn to an in-depth discussion of the various features of the participant groups' EPRs.

9.2 Epistemic relations and social relations[90]
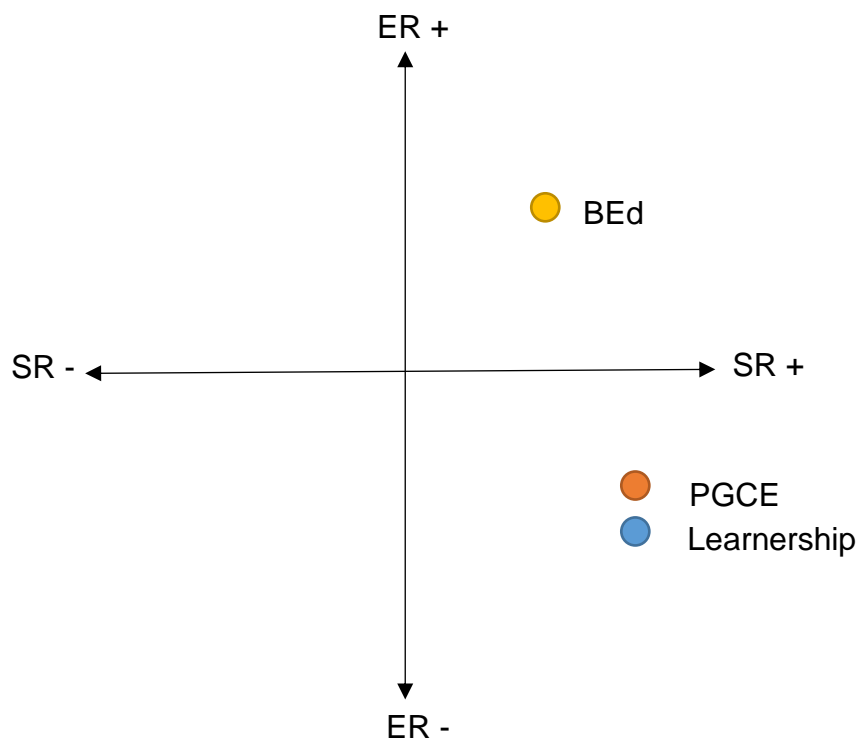
Figure 9.2-1: Epistemic relations and social relations of BEd, PGCE, and Learnership participants

The findings show that the BEd participants tended to foreground both the epistemic relations and the social relations in their response to Ms Mdluli's lesson. They tended to make comments about what Ms Mdluli or the ideal teacher should know and be able to do, as well as comments about how the ideal teacher should be. They therefore tended to foreground the *knowledge* and the *knower* in teaching. By doing this, their responses to Ms Mdluli's teaching had a stronger epistemic relation (within the knower code) than the PGCE and Learnership EPRs because in the BEd EPRs, the "…

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[90] Note that the epistemic relations axis in Figure 9.2-1 is intentionally labelled as ER - to ER - - because I have argued that teaching tends towards a knower code, which is characterised by weaker epistemic relations and stronger social relations.

possession of specialised knowledge of specific objects of study [were relatively] emphasised as the basis of achievement, and the attributes of actors [were relatively] downplayed" (Maton, 2014f, p. 30). They therefore tended to make more knowledge claims (that is, claims about what a teacher should know and be able to do) than the Learnership or PGCE participants do. The Learnership and PGCE participants, however, tended to foreground the social relations and background the epistemic relations. They tended to make comments about how Miss Mdluli or the ideal teacher should be. They therefore tended to foreground the relationship between Ms Mdluli as a *knower* and background the relationship between her *knowledge* and the practice of teaching. By doing this, their responses placed teaching in a knower code, whereby the "… specialised knowledge and objects [were] less significant and instead the attributes of actors [were] emphasised as measures of achievement" (*ibid.*, pp. 30-31). They therefore made more axiological claims (that is, claims about who a teacher should be) than the BEd participants did.

The analysis of the BEd participants' responses indicates that for them, teaching and learning to teach is a both cognitive process that can be learned and a social process of developing requisite dispositions and attitudes. In making both knowledge claims and axiological claims, and by the their tendency to foreground the epistemic relations and the social relations in their EPRs, the analysis of their BEd participants' data suggests that for them, being a good teacher is to do with *knowing* and *being*. What makes the BEd participants' data different to the PGCE and Learnership participants', then, is that for the BEds, "… highly skilled teachers have deep knowledge of their content areas and of the most effective teaching strategies for creating learning opportunities for [learners]" (Cochran-Smith & Lytle, 1999, pp. 254-255).

The Learnership and PGCE participants' data indicates that for them, teaching and learning to teach may be more of a personal quest. In making more axiological claims than knowledge claims, and by foregrounding the social relations and backgrounding the epistemic relations in their EPRs, the Learnership and PGCE participants' data suggests that for them, being a good teacher is more to do with *being* than *knowing*. The axiological claims, wherein the participants focused on who and how a teacher

should be, seem to indicate that these participants see a good teacher as someone who behaves in a certain way and *is* a certain way. For the PGCE and Learnership participants, then, teaching may be more of an art (Hoban, 2005), because the knowledge that a teacher requires to practice is downplayed and the personal attributes of the teacher are emphasised.

9.3 Semantic gravity and semantic density

Together, the semantic gravity and semantic density of the participants' data helps us to understand in what context the participants engaged in pedagogical reasoning (semantic gravity), the extent to which their EPRs abstract the rationale of their responses (semantic gravity), and the ways in which they used specialist language and concepts to respond to the lesson (semantic density). Figure 9.3-1 presents the spread of the various participant groups' data on a Semantic Plane.
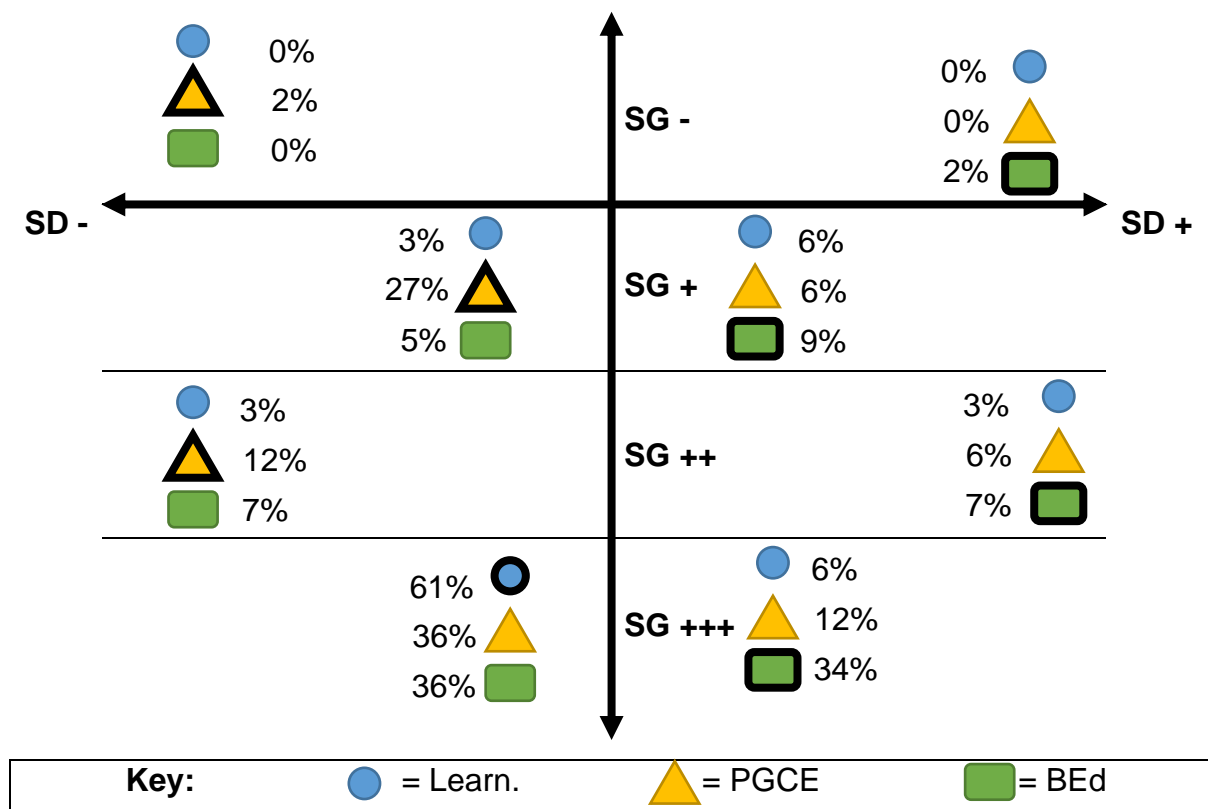
Figure 9.3-1: Semantics scatter plot of Learnership, PGCE, and BEd data

The figure above shows how all of the participant groups tended to locate their pedagogical reasoning in the context of the video in the artefact of practice. This is to

be expected as I asked them to reflect on their thoughts on that specific lesson in the video. I would expect them to draw on their 'situational appreciation' of the specific context on which they are reflecting, in order to react to specific cues that they observed during the exercise (this was coded as SG +++). As is evidenced in Figure 9.3-2 below, where the three cohorts differed was in the nature of the language that they used to justify their judgements and pedagogical reasoning (given by the semantic density of the EPRs). The BEd participants' EPRs used language and terminology that was relatively more semantically dense and specialised. The Learnership and PGCE participants, on the other hand, tended to rationalise their judgements using simple, unspecialised language and terminology which condensed relatively less meaning that that of the BEds. What this means is that the BEds in this study had access to a specialised language of description for their pedagogical reasoning and rationales, while the other participants did not (or did not draw on it to vocalise their reasoning). This finding is in keeping with the next finding, which is that the BEd participants were more likely to abstract their rationales to a principle or rule of teaching, while the PGCE and Learnership participants' rationales remained in the context of the lesson in the video or abstracted to a hypothetical context. The BEd participants used their specialised language *in order to* abstract their rationales out of the context of the lesson. They were able to relate a principle of practice to what they observed. In this way, they used rules or principles to understand a particular situation: they used it as a lens on practice. As the Figure 9.3-2 shows, if the PGCE and Learnership participants abstracted their rationales from the context of the video, it was to a hypothetical context.
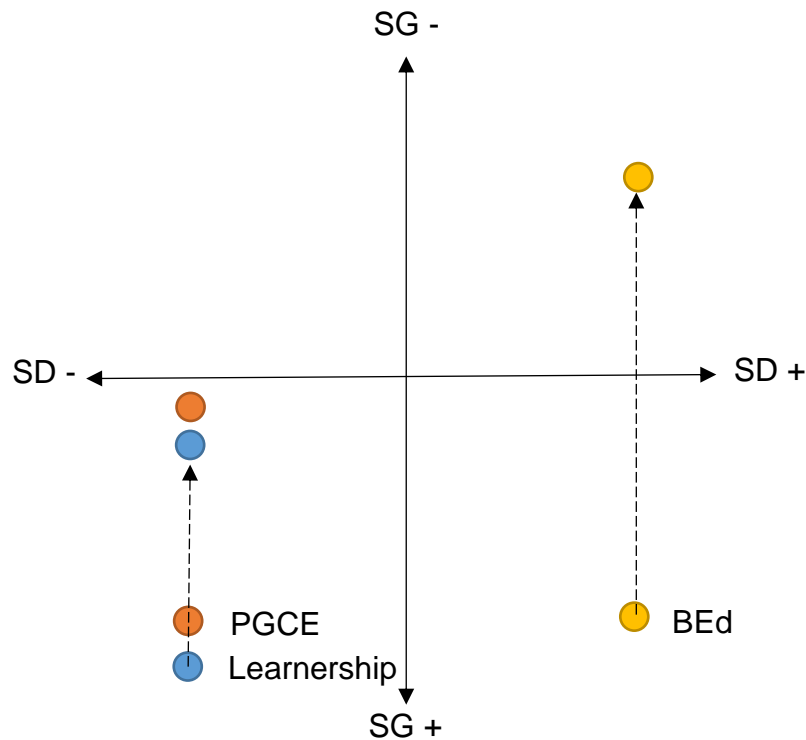
Figure 9.3-2: Semantic gravity and semantic density of BEd, PGCE, and Learnership participants

The BEd participants' data is in keeping with the role of educational theory and principles that the likes of Shalem (2014), Winch (2012), Hirst (in Hirst & Carr, 2005), Morrow (2005), Day (1999), and Shulman (1987a) argue plays in professional teacher practice. By abstracting their thoughts from the context of the lesson in the video (extremely strong semantic gravity) to an abstract, context-free principle of practice (weak semantic gravity), they are not engaging in the technicist practice of applying normative judgements to their practice (Rusznyak, 2015), but showing high levels of situational appreciation to marshal theory in terms of the practice. It is this semantic range that makes the BEd participants' EPRs distinctive from the PGCE and Learnership participants'. I do not find this outcome to be surprising, though. The BEd programme that the BEd participants in this study had completed works very specifically to ground practice in theory, and theory in practice. The institution at which the BEd participants studied has a very strong focus on preparing teachers to be practitioners who are able to cope in any context through the teaching of relevant, foundational theories and principles of teaching and learning.

The PGCE and Learnership participants tended to either remain in the context of the lesson in the artefact of practice, or abstract to a hypothetical context, using

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cause/effect reasoning. They rarely used an explicit theoretical lens to make sense of the practices that they were observing. This is in keeping with the role of contextual knowledge that the likes of Korthagen (2017) and Carr (in Hirst & Carr, 2005) argue plays in professional teacher practice. By remaining relatively close to the context of the lesson in the video, they are not applying principles or rules in a normative way to their practice, but they are also not employing theory to make sense of the practice either. They seemed to make sense of practice through the practice itself, in less systematised ways than they could if they used theory to understand practice. It makes sense, then, that they would value the personal attributes[91] of the teacher over their knowledge and skills. For them, a good teacher responds to the specificities of the classroom based on their personal propensity to be a good teacher.

I do not find it unsurprising that the Learnership participants showed very high levels of situational appreciation (Morrow, 1996), and grounded their pedagogical reasoning very strongly in the context of the video in the artefact of practice. Pre-service teachers who are involved in a learnership programme spend considerable amounts of time in the classroom, and so for them, it would only be natural that contextual knowledge would be highly influential in their pedagogical reasoning and judgements. For them, by the very nature of the apprenticeship or learnership model, the role of context-free principles and theory is downplayed, with the benefits of situated learning being emphasised. The 'draw' of a learnership programme is that the pre-service teacher gains valuable practical and contextual knowledge and experiences. It is to be expected, then, that they learn the majority about teaching from their navigation of the context of the classroom. What I do find unexpected, however, is that the PGCE participants also tended to remain in the contextual when engaging in pedagogical reasoning about the artefact of practice. PGCE participants have necessarily come from a theoretical undergraduate programme (as opposed to a BEd, which is also an undergraduate programme, but is professionally oriented). Their undergraduate programmes were made up of modules where the object of study was the content of the module itself. If they studied geography, for example, geography was the object of study, not how to teach geography to Grade 7, 8, and 9 learners. Perhaps it is because

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[91] As discussed in Section 9.2.

of the one-year PGCE programme which has a very heavy emphasis on the pedagogical knowledge that the pre-service teachers need to learn which has led to the PGCE participants in this study valuing the contextual knowledge in the artefact of practice.

9.4 Interactional relations, gazes, and the possibilities for professional judgement

Interactional relations provided a tool of analysis to reveal the bases of legitimation for the participants' pedagogical reasoning about practice. The findings of this study indicated that the Learnership and PGCE participants mainly learned the criteria for good teaching, and therefore legitimised their pedagogical reasoning using primarily reflections on their own practice as pre-service teachers. BEd participants, however, legitimised about half of their EPRs in theoretical ideas and principles and the other half in reflection, observation, and feedback from an experienced practitioner. These findings are captured in Figure 9.4-1:
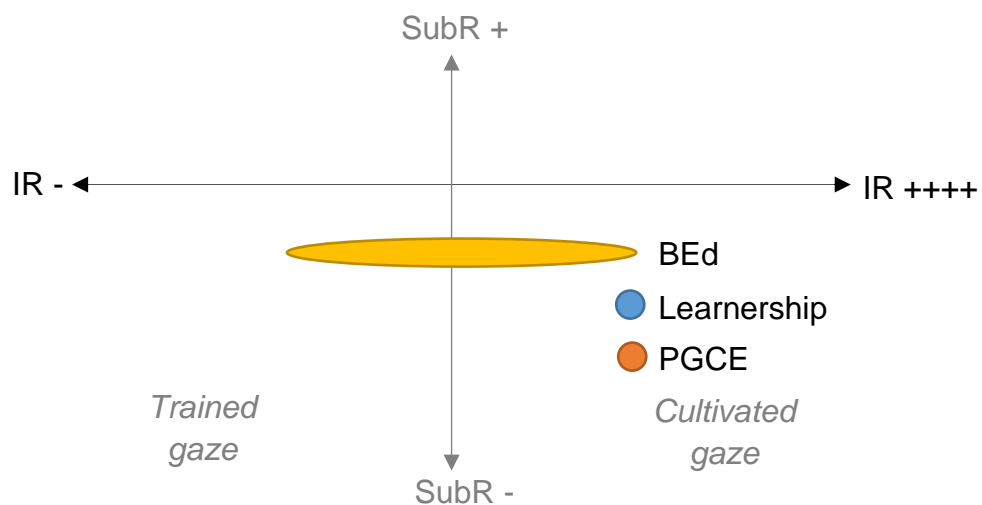
Figure 9.4-1: Subjective relations and interactional relations of BEd, PGCE, and Learnership participants

While the fact that PGCE and Learnership participants found their own reflections on practice to be most generative for the criteria for good teaching and BEds do not, in itself, is interesting, what is of greater importance is the implication of these findings for the development of the various groups' gazes on practice. I present the empirical

findings in relation to the gazes in the following pie charts (Figure 9.4-2, Figure 9.4-3 and Figure 9.4-4):

Learnership	PGCE	BEd
13% Trained / 87% Cultivated	19% Trained / 81% Cultivated	52% Trained / 48% Cultivated
Figure 9.4-2: Pie chart showing proportion of Gazes in Learn. participants' responses (II)	*Figure 9.4-3: Pie chart showing proportion of Gazes in PGCE participants' responses (II)*	*Figure 9.4-4: Pie chart showing proportion of Gazes in BEd participants' responses (II)*
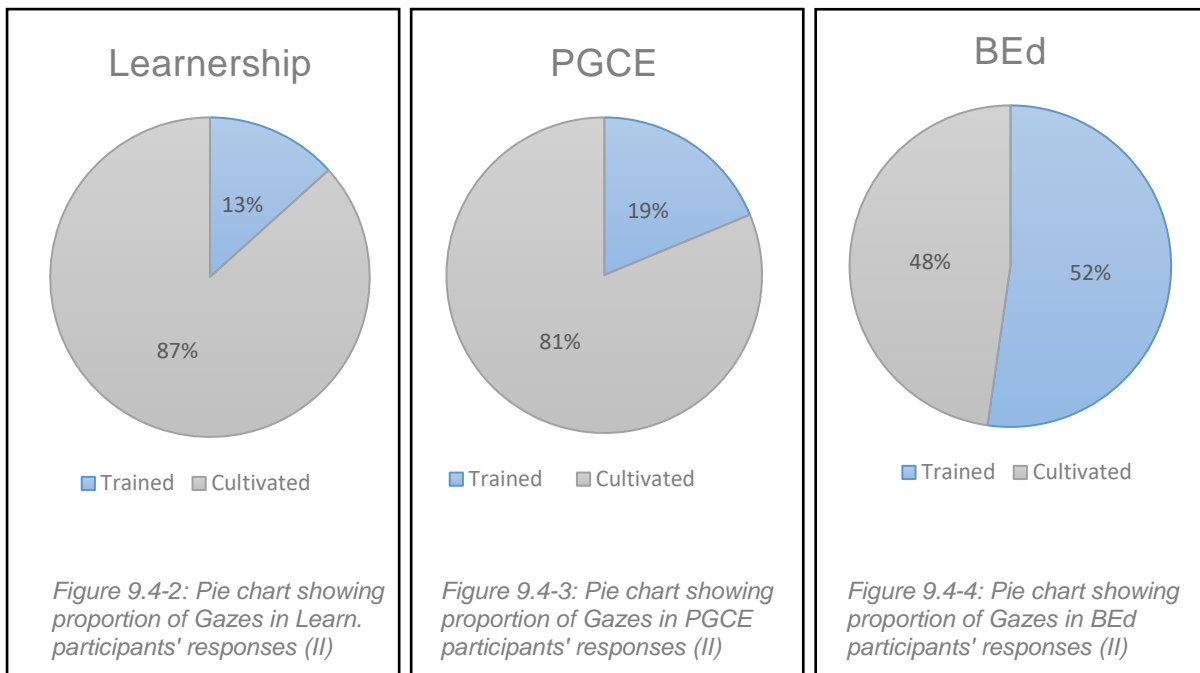
The reader is reminded that in the Conceptual Framework chapter, I argued that the different strengths of interactional relations gave particular gazes on practice. This argument is summarised in Table 9.4-1 below:

Table 9.4-1: Brief overview of gazes in relation to various strengths of IR

Strength of IR	Description	Gaze	Description
++++	Feedback from expert practitioner on own teaching	Cultivated	"… often involve acquiring a 'feel' for practices through … extended participation in 'communities of practice' … sustained exposure to exemplary models … and prolonged apprenticeship under an acknowledged master" (Maton, 2014b, p. 186)
+++	Observation of an expert practitioner		
++	Reflections on own teaching		
+	Apprenticeship of Observation		
-	Theoretical ideas or principles	Trained	"… [emphasise] the possession of specialist knowledge and skills" (*ibid.*)

The PGCE and Learnership participants, in locating the majority of their criteria for good teaching as emanating from their own reflections on practice, observation of experienced practitioners, and feedback from expert practitioners, show the

development of a *cultivated gaze.* The BEd participants' data indicates an almost equal split between their own reflections on practice, observation of experienced practitioners, and feedback from expert practitioners, and theoretical ideas, showing the development of both a *cultivated* and a *trained gaze.* The implication of this for the participants' practice as professional teachers is that the BEd graduates draw equally on two 'perspectives' on practice, while the Learnerships and PGCE graduates are drawing predominantly on one at the start of their teaching careers. The BEds are therefore likely to have a wider field of criteria from which to draw when engaging in pedagogical reasoning as they can view their practice in two different ways: from the perspective of theory, and from the perspective of their own experiences where the criteria for good teaching are more explicit. I think that it is important to make the following clear: even though the BEds have developed two gazes on practice and the Learnerships and PGCEs have developed one, it does not mean that the cultivated gaze of the Learnership and PGCE participants is not very rich and that it does not give them a legitimate gaze on practice. I am not saying that one gaze is better than another. I am saying that one group has two gazes, and the others have one. I am making the argument, though, that the development of two gazes may privilege the BEd graduates when it comes to their pedagogical reasoning and professional judgement, because they have a wider pool from which to select criteria for good teaching.

At this point, I turn back to Shulman's (1998, p. 516) work on what it means to be a professional. The reader is reminded that he identifies six hallmarks of a profession, which he derives from the work of John Dewey (1904):

1. The obligations of service to others, as in a "calling";
2. Understanding of a scholarly or theoretical kind;
3. A domain of skilled performance or practice;
4. The exercise of judgment under conditions of unavoidable uncertainty;
5. The need for learning from experience as theory and practice interact; and
6. A professional community to monitor quality and aggregate knowledge.[92]

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[92] 1 to 6 are a direct quote from Shulman's (1996, p. 516) article.

Given the important role of pedagogical reasoning to enable judgements in situ that the likes of Hoban (2005), Day (1999), Morrow (1996), Shulman (1987a) argue exists, we can see the role that judgements take in professional practice particularly in points two, four, five, and six. The PGCE and Learnership participants, in having developed a cultivated gaze, satisfy part of the criteria in point five, whereby they learn from experience in practice, and in point six, whereby they are part of a professional learning community (Maton, 2014b). The BEd participants, in having developed both a cultivated and trained gaze, satisfy the criteria in the same points as the Learnership and PGCE participants do, but that they also satisfy the criteria in points two and five, which is "understanding of a … theoretical kind" and "learning from experience as theory and practice interact" (Shulman, 1998, p. 516). I would therefore argue that the BEds' pedagogical reasoning on practice tends to be more 'professional' than those made by PGCE or Learnership participants, because the BEds' EPRs satisfy more of the criteria for professional judgements than the PGCE and Learnership participants' do. My case is strengthened by Shalem's (2014) assertion that it is *theoretical* understanding that binds judgement.

9.5 Conclusion

This discussion chapter has presented a number of arguments, which I summarise briefly below:

1. PGCE and Learnership participants tend to see good teaching as more to do with *being*, while BEd participants tend to see good teaching as more to do with *knowing and being able to do* as well as *being*;

2. BEd participants tend to understand practice from a theoretical perspective as they abstract their thinking from a given context to a principle or rule of practice, while the PGCE and Learnership participants remain in the contextual; and

3. PGCE and Learnership participants have developed a cultivated gaze on practice, while BEd participants have developed both a cultivated and trained gaze, thereby making the BEds' pedagogical reasoning demonstrate characteristics that are more professionally orientated in nature.

I now discuss these arguments in relation to a number of issues. First, what do the findings imply for the various groups' abilities to cope with changing contexts? A

theoretical, slightly more removed, perspective on practice enables teachers to "…have developed a theoretical lens through which to understand the ways in which structural and classroom practices may constrain as well as enhance learning" (Rusznyak, 2015, p. 20). Rusznyak also argues that "…insights obtained from educational theory are crucial for informing the professional knowledge-based decisions that teachers make in their practice," (*ibid.*, p. 21). The BEd participants, in having developed this theoretical lens with which to understand practice, are likely to have developed recognition rules to understand teaching and learning situations from a theoretical perspective. The PGCE and Learnership participants, having developed a cultivated gaze on practice, "are [likely to be] 'reflective practitioners', ... learn through trial-and-error, and … depend on their personal practical knowledge to learn to make wise judgements in practice" (*ibid.*, p. 18). They may not necessarily have the conceptual tools to cope with changing contexts, as "[p]ersonalised practical knowledge is by its nature contingent (and therefore not systematic), and contextually bound (and therefore not generally transferable)" (*ibid.*).

Second, I consider the implications of the findings for the participant groups' abilities to think systematically about their practice. Theoretical knowledge is necessarily systematised and gives frameworks for how ideas are networked and work together. This is why LCT characterises theoretical knowledge as having weaker semantic gravity and stronger semantic density. In having developed both a cultivated and trained gaze, BEd participants have access to the organising frameworks to systematically think about their practice. Ruszynak (2015), for example, says that having a conceptual framework to understand practice enables pre-service teachers to distinguish between what Morrow (1996) calls the 'formal' and 'material' elements of teaching, while Shalem (2014) argues that theoretical knowledge binds professional judgements, and Winch (2012) says that it provides a conceptual toolkit to understand practice. By not having developed a trained gaze, PGCE and Learnership participants may potentially be at a disadvantage, and are likely to think about their practice in unsystematised ways, relying solely on contextual cues to guide and shape their pedagogical reasoning and judgements in situ. Rusznyak (2015) argues that in this case, the unsystematised knowledge from which teachers draw to reason about their

practice, "provide[s] a weak epistemological basis for teachers to make rational professional judgements in practice" (p. 18).

Third, I consider the findings of the study in relation to the policy imperatives of the MRTEQ (Department of Higher Education and Training, 2015). Specifically, I wish to address the assertion by the MRTEQ that all pathways to professional teacher qualification are equal. In prescribing a set of 'competences' that all newly qualified teachers should display (Appendix C of the policy), the MRTEQ makes the assumption that the same kind of teacher is produced by all routes. The findings of this research, while not having explored all competences of professional teachers as laid out in Appendix C of the MRTEQ, present a different story when it comes to the pedagogical reasoning of differently newly qualified teachers. The MRTEQ policy makes the claim that it sees teaching as a professional practice which sees teaching as more than a technical endeavour. It critiques previous ITE policies for focusing too heavily on technical skills of teachers (e.g. p. 7 and p. 11). This research, however, has found that differently qualified pre-service teachers seem not to reason pedagogically in the same ways, and may actually consider 'good teaching' to be different from one another. While the MRTEQ policy implicitly requires all graduates to be able to engage in theoretically, practically informed pedagogical reasoning, the findings of this study indicate that they do not seem to do so. The assumption that all graduates will display the same set of competences is therefore doubtful, considering that such a fundamental facet of professional practice (as pedagogical reasoning is) seems to be realised differently in differently qualified graduates.

While this study has provided empirical evidence to support the hypothesis that different routes to ITE enable different types of pedagogical reasoning, it is also important to conjecture why the Learnership and BEd groups, for example, engage in such different pedagogical reasoning. Given the nature of qualitative research, the data that I had to work with was the *responses* of the participants. I did not have access to what they were thinking – only to what they *told me* that they were thinking. It appears, then, that the Learnership participants have not actually got access to the conceptual tools required to reason pedagogically in the same ways as the BEd

participants, for example. While this may well be the case, the Learnership participants may have or be developing a trained gaze, but it is latent, and they did not draw on it when responding the lesson in the video. As Shulman (1987a) points out, the "wisdom of practice" that is required to teach means that "[p]ractitioners simply know a great deal that they have never even tried to articulate" (*ibid.*, p. 12). I could posit that, due to the Learnership participants' prolonged immersion in a site of practice, they may suffer from this "collective amnesia" (*ibid.*) of which Shulman speaks. Alternatively, I propose that perhaps the Learnership participants have not developed a shared language with which to discuss their observations of the lesson. Unlike the PGCE or BEd participants, they have had very different classroom experiences during their internships, and this may result in a deep knowledge of teaching in situ, but not of a shared theoretical language of teaching. I believe that this may be a potential concern when Learnership-qualified teachers engage in professional development activities. Their apparent lack of a codified language means that they are likely to struggle to learn and integrate new strategies, thinking, and approaches into their classrooms. I propose that distance learning does have the ability to give pre-service teachers a shared language of description, but that the distance models would need to take their approach to ITE well beyond a 'tips for teachers' approach.

Finally, I consider the findings of the study in relation to the constellation clash that is presented in the Literature Review. To remind the reader, I presented a constellation clash between the idea that teaching is a personal quest, which emphasises the personal attributes and downplays the knowledge and skills of a professional teacher; and teaching as a cognitive process, which foregrounds the knowledge and skills of a teacher, and backgrounds the personal attributes of the teacher. The PGCE and Learnership participants' data shows that they align more with the 'teaching as a personal quest' conception of teaching. Through the foregrounding of the social relation and backgrounding of the epistemic relation, thereby placing the practice of teaching in a knower code, they tend to see good teaching as more to do with who you are than what you know or can do (Korthagen, 2017). For them, the criteria for good teaching tends to come from reflection on practice (Schön, 1983a). The PGCE and Learnership participants' data evidences this claim through their assessment of Miss Mdluli as a *person*, based on what they would have personally done, given their

experiences. They were therefore more inclined to evaluate of teaching as an intensely personal and individualised practice.

The BEd participants' data indicates that for them, teaching and learning to teach is a cognitive process that can be learned. The BEd participants in this study reasoned about the artefact of practice by using both knowledge and skills that were learned formally (e.g. Winch, 2012) and in practice (e.g. Gravett, Henning, & Eiselen, 2011). They also tended to describe the kinds of ways of being that a good teacher should espouse. They therefore took a less personalised stance, looking at teaching as a common and shared practice in which teachers' work is informed by broader principles, concepts, and the possibilities of contexts. Their EPRs were less focused on the initial traits of Ms Mdluli, and more focused on the extent to which her practice demonstrates principles of practice.

In conclusion, this empirical study has found a number of things about a small sample of differently qualified pre-service teachers. The participants in this research responded to an artefact of practice, drawing on their professionally developing knowledge in very different ways. What this means is that the participants seemed to apply differently constructed evaluative criteria and logics about what is valued and what counts as legitimate teacher knowledge within the reproduction field (Maton, 2014g). As a result, the differently qualified pre-service teachers in this study engaged in pedagogical reasoning and justification that looked quite different from one another's. These findings are therefore inconsistent with the MRTEQ's (DHET, 2015) assumption that all ITE graduates, regardless of their route to becoming a teacher, are able to display the same set of competences and think in the same manner. The findings have also enabled me to contribute to the conversation around the conceptions of teaching and the views of teaching as a professional practice or individualised pursuit. The following chapter will conclude the study and present the implications for further research.

CHAPTER 10: CONCLUSION & CONTRIBUTION OF THE STUDY

This chapter concludes the study by providing a discussion of how the research has attempted to answer each research question. It considers the contribution that this study makes to ITE and suggests areas of further research that emanate from this study. This thesis has used seminal work of Lee Shulman and Wally Morrow, as well as other pertinent literature, to argue that pedagogical reasoning is at the heart of teacher professional practice. It employed the conceptual tools offered by LCT (Maton, 2007) to identify a 'constellation clash' exists between what teaching is and how it is learned. Although it is crucial for pre-service teachers to develop the ability to think about their teaching in a meaningful and grounded manner, pedagogical reasoning cannot be 'taught'. Its development has to be facilitated through carefully scaffolded teaching, application, and opportunities to engage in knowledge-building (bringing different parts of learning to teach together). The ability to think about teaching in a professional manner is central to professional teacher practice, however, current research and literature remains relatively silent on the pedagogical reasoning abilities of beginning teachers. This research analysed the responses of ten differently qualified beginning teachers who were variously qualified through BEd, PGCE and learnership pathways. Their individual and group responses to an artefact of practice formed the dataset for this study. This analysis enabled me to describe the nature of the pedagogical reasoning and judgements that the research participants vocalised. Using LCT's Specialization, Social, and Semantics dimensions, I was able to analytically unpack each EPR, revealing the participants' criteria for good teaching, and their gazes on practice. I found that BEd participants' responses moved around the Specialization plane more than the Learnership and PGCE participants, by foregrounding both the knowledge and skills of teachers, as well as the teacher as a knower in their EPRs. The BEd participants' responses indicate that they had recruited both a trained as well as a cultivated gaze in order to respond to another's teaching of a lesson. The PGCE and Learnership participants foregrounded the teacher as a knower in their EPRs and had recruited a cultivated gaze in order to respond to the lesson that they observed. The findings indicate that BEd participants' EPRs

exemplified a conception of a professional response to teaching using a knowledge base to justify evaluative criteria, rather than personalised experience. The PGCE and Learnership participants' findings indicated that at this stage of their professional development, they responded to the artefact with more experiential positions than conceptual ones.

10.1 How do final year pre-service teachers engage in pedagogical reasoning and judgements when analysing an artefact of practice?

The conceptual framework that was chosen and developed for this study enabled me to analyse *how* a small group of differently qualified pre-service teachers at the end of their ITE responded to the same lesson. This gave a way of analysing the kinds of pedagogical reasoning they engage in in relation to their developing teaching practices. The problem with pedagogical reasoning, however, is that it is invisible and cannot be directly observed. Additionally, it cannot be accessed outside of a practice-based context or artefact of practice because it can only be demonstrated in relation to something else. Pedagogical reasoning rests on the ability of the demonstrator to provide a specialised justification that is informed by some sort of knowledge base, be it conceptual or practical. The conceptual framework enabled me to 'lift the lid' on the participants' EPRs, and despite pedagogical reasoning being invisible, analyse *how* they were reasoning.

What aspects of teaching do they foreground and background?

The Specialization dimension of LCT allowed me to analytically determine whether participants foregrounded the epistemic relation and/or the social relation in their EPR, which is an indicator of whether they value the knowledge and skills of a teacher, or the personal attributes, or both, or neither. The findings showed the BEd participants, through making both knowledge and axiological claims, valued both the knowledge and skills of the teacher, as well as the personal attributes, while the PGCE and Learnership participants tended to value the personal attributes of a teacher by making primarily axiological claims. These conclusions were drawn from an analysis of what the participants were critiquing or praising in the lesson in the artefact of practice: whether they were commenting on the person, or on the knowledge and skills.

On what basis are their judgements legitimised?

The Semantic dimension of LCT allowed me to analyse the extent to which participants, in responding to a recorded lesson, abstracted their rationales in their EPRs to a principle of practice. Using the tool of semantic gravity, I was able to unpack the semantic range of the participants' EPRs. All of the participants began their EPRs by grounding their judgements in the lesson in the artefact of practice, but I found that the BEd participants abstracted their rationales to a principle of practice more than the PGCE or Learnership participants, who tended to abstract to a hypothetical context. Furthermore, the BEd participants used formal, teaching-specific language and terminology to explain and justify their judgements on practice, while PGCE and Learnership participants used more everyday language. As a result, in their focus group discussion, the BEds networked their ideas more readily, as they had a shared language with which to work to make meaning of the lesson.

10.2 What gaze(s) on practice have differently qualified pre-service teachers developed?

In the Conceptual Framework chapter of this thesis, I argued that when participants draw the criteria for good teaching from more personal experiences, where the criteria for good teaching are more explicitly communicated to them, they are developing a *cultivated gaze* on practice. When they draw the criteria for good teaching from theoretical ideas, they are developing a *trained gaze* on practice, because they need to recontextualise the ideas into a context of practice. Criteria for good teaching, I argued, are therefore less clear when drawing on theoretical ideas.

The Learnership and PGCE participants, according to the findings, recruited a cultivated gaze to respond to the lesson they observed, because they drew the criteria for good teaching mainly from their own reflections on their own practice. The BEd participants, however, recruited *both* a trained and a cultivated gaze. In evaluating and responding to the observed lesson, they drew the criteria for good teaching from both theoretical ideas, as well as reflection on their own teaching, observation of, and

feedback from an experienced teacher. Subsequently, the BEd participants have access to *two* fields from which to draw criteria for good teaching, while the PGCE and Learnership participants in this study draw on one. This is not to say that the PGCE and Learnership participants in this study do not have two fields from which to draw criteria: indeed, they may be experiencing the problem of "intertia," where knowledge has been acquired, but the pre-service teacher is unable to enact it as yet (Shulman, 1997, p. 556).

What do the participants identify as the grounds for legitimation of their pedagogical reasoning?

The Social dimension allowed me to analytically elucidate the basis for legitimation for the participants' EPRs. It allowed me to understand from where the authority to make the judgements on practice that the participants made, came from. In other words, it communicated to me the sources of the criteria for good teaching for the participants in the study. I found that the Learnership and PGCE participants drew the criteria for good teaching from their own reflections on their own practice, while the BEd participants drew the criteria for good teaching from, and thus legitimated their EPRs using theoretical principles, as well as more personal experiences such as reflection on their own teaching and observation of expert teachers.

To what extent do ITE programmes result in homogeneity in the ways in which its graduates engage in pedagogical reasoning?

This question was designed to address the assumption of the MRTEQ (Department of Higher Education and Training, 2015) that all ITE graduates, irrespective of their pathway to qualification, will be able to demonstrate the same set of competences (Appendix C of the MRTEQ: see Appendix A of this thesis). The findings of this study indicate that the nature of the ITE programme has, in fact, had an influence on the pedagogical reasoning of the graduate: that even if the differently qualified participants in this study had similar knowledge from which to draw criteria for good teaching, some of it may be inert for some participants, and active for others (Shulman, 1997). Given that pedagogical reasoning lies at the heart of most of the eleven competences of a beginning teacher outlined in the MRTEQ, it is possible to doubt that all of the graduates will fulfil those competences in the same way due to their differently active

and inert knowledge and pedagogical reasoning abilities. My argument is that if from the outset of their career, they engage in pedagogical reasoning in different ways, foregrounding and backgrounding different aspects of teaching, valuing and not valuing different knowledge, and drawing the criteria for good teaching from different places, it is unlikely that they will be the same 'kind of teacher' as one another, and display the same competences. I cannot make claims about their teacher professional practice – their depth of content knowledge, their knowledge of the curriculum, their acquaintance with school procedures, their own classroom practices – but I feel that because of the important role that pedagogical reasoning plays in many aspects of teacher practice, I can conjecture that the ways in which they reason now may have an effect on their practice.

Despite my overall argument that participants from different ITE programmes recruited experiential and theoretical knowledge differently in this study, logic says that the PGCE and Learnership ITE programmes are likely to result in graduates who are able to demonstrate similar competences because their data was quite similar. This is something that I agreed with until I came to writing this chapter. However, upon reflection, I feel that this claim is a Trojan horse. The reader will recall that the PGCE and Learnership participants' data indicated that they tended to see teaching as an individualised pursuit, and that they emphasised the attributes of the teacher as a persona as important for good teaching. By the very nature of this view of teaching as a personal endeavour, I would surmise that the two cohorts may not display the same competences in practice. Indeed, various other knowledge bases may be inert for individual participants in this study, so it is difficult to say how different participants' competences in practice may differ. The data from this study only shows that the Learnership and PGCE participants agree that the personal attributes of the teacher are important for good teaching, not that they will teach in the same way. If they value only the personal attributes of a good teacher, their own teaching could be relativist in nature, with the criteria coming from their own reflections on their own practice. They may not demonstrate the same competences in reality as their competences are contingent on their individual personality attributes as teachers, or on inert knowledge bases and competences. I can therefore conclude that given the nature of their pedagogical reasoning on practice in this data set, ITE programmes do not result in

homogeneity of pedagogical reasoning, and they may not necessarily result in graduates who are able to demonstrate the same competences in the same ways.

10.3 Contribution to ITE in South Africa

This study has contributed to the ongoing conversations in ITE in South Africa in three ways. The first way in which it has made a contribution is at the level of ITE policy. The second is at the conceptual level, by developing and proposing analytical tools to study and understand professional teacher reasoning and judgement. The third is at is at the level of ITE programmes.

Currently, the MRTEQ says very little about the development of pedagogical reasoning, focusing largely on the visible competences of beginning teachers (e.g. Appendix C of MRTEQ, 2015). It is hoped that this research has foregrounded the centrality of pedagogical reasoning in the development of professional practice and will encourage teacher educators and policymakers to consider the inclusion of provision for the development of professionally based pedagogical reasoning. It also highlights that differently qualified beginning teachers in this study drew on different knowledge bases to engage in pedagogical reasoning. It thus contributes empirically justified evidence that the expectation that differently qualified teachers (where ITE programmes differ in terms of their sequencing and pacing) is unfounded and needs to be reconsidered. The claim that the MRTEQ is a theoretically-oriented policy that avoids a "skills-based approach, which relies almost exclusively on evidence of demonstrable outcomes as measures of success, without paying attention to how knowledge should underpin these skills for them to impact effectively on learning" (Department of Higher Education and Training, 2015, p. 9) is undermined by the inclusion of a set of demonstrable outcomes in The Basic Competences of Beginning Teachers. It is also undermined by the evidence presented in this study, which has found that differently qualified graduates have developed different recognition rules for good teaching. Despite being a theoretically oriented policy, PGCE and Learnership participants in this study did not vocalise theoretically informed recognition rules in the interviews.

Furthermore, the position that advocates of alternative pathways to teacher education, such as Hofmeyer (2016) take, which is that alternative pathways should be valued as much as traditional pathways because they produce more teachers to meet South African schools' demands, is concerning. The findings of this study are that differently prepared graduates engage in pedagogical reasoning in significantly different ways. By not understanding the way in which pre-service teachers are differently prepared and what they can do from the outset, the kind of support that is required during the induction of these teachers is undermined. Although this research has not considered aspects of professional teacher practice such as the participants' content knowledge and skills, to underestimate the significance of the ways in which differently qualified teachers reason is to misunderstand their needs, especially as beginning teachers.

This study has also contributed a set of conceptual tools and a language, developed in the Conceptual Framework, to enable the study of pedagogical reasoning and professional judgement. It has developed these tools to 'lift the lid' on the 'black box' that is pedagogical reasoning. By showing how differently-qualified graduates reason pedagogically, it helps us to understand why they reason as they do, and, consequently, these tools of analysis may be developed further to help to inform ITE programme design (the third contribution of this study). By overcoming the 'knowledge myopia' (Maton, 2014f) of PCK and pedagogical reasoning and professional judgement, this study could begin to help ITE programme designers to design a programme targeted at the development of pedagogical reasoning, giving direction on how to promote the recruiting of theory to inform reasoning in practice in learnership and PGCE pre-service teachers. Additionally, it has contributed a 'profile' of the kind of pedagogical reasoning that differently qualified graduates engage in, which is also useful in the planning and design of ITE curricula, as it provides a kind of 'outcome' of the various 'inputs' (e.g. emphasis on practical teaching vs. emphasis on theoretical knowledge with practical teaching, and so on) in ITE programmes.

The way forward: Suggestions for future research

Although I reflected in some depth on the conceptual, methodological, and logistical limitations and challenges of this study, it is important at the end of the study to highlight its 'blind spots' which present opportunities for further research in the field of pedagogical reasoning. As has been an ever-present challenge throughout this study, the data set was drawn from a relatively small sample reflecting on one artefact of practice. It would therefore be generative to study the pedagogical reasoning of differently newly qualified teachers as articulated in response to their own teaching or in response to another artefact of practice and compare the findings to those of this study. Other areas which need some more exploration include the relationship between pedagogical reasoning and effective pedagogical practice, as well as the impact of supportive teacher communities of practice on the development of articulated pedagogical reasoning. While this study has compared the nature of the pedagogical reasoning of differently newly qualified teachers and made conjectures about the implications of this on their professional practice, it would be fascinating to study the pedagogical reasoning of expert teachers who have qualified through these same routes, and see whether similar trends exist or not. Furthermore, exploration of the validity of the assumption that expressed pedagogical reasoning links with better pedagogic practice would be a generative avenue of study, as it would extend this study by linking pedagogical reasoning with desirable pedagogical practice.

10.4 Conclusion

The first recommendation for further research is to explore the reasoning of experienced teachers who have come through the PGCE, BEd and Learnership routes, investigating the ability of teachers who have the formal conceptual knowledge to then integrate it with experience in practice. Another possible course for further research could be the investigation of different kinds of induction programmes for newly qualified teachers. Drawing on the findings of this research could open up the possibility of specialised induction programmes for BEd, PGCE and learnership graduates. Further investigation would be required to identify what differences and similarities should exist within the different induction programmes, to develop equally-competent teachers, as the MRTEQ (2015) demands, and whether the trained gaze is latent in PGCE- and Learnership-educated teachers. Further to this, an area for

further research is also to explore the extent to which differently degreed beginning teachers' teaching has the potential to be transformative or maintains the status quo is opened by this research.

This study has endeavoured to take up Shulman's (1987a) challenge that we need to have "a proper understanding of the knowledge base of teaching, the sources for that knowledge, and the complexities of the pedagogical processes" (p. 243). Its findings have attempted to begin to unearth the complex nature of pedagogical reasoning, an underlying enabler of professional practice. It is my hope that this study has begun to enable teacher educators to understand that how pre-service teachers reason about their teaching and the teaching of others is important, and that the design of ITE courses may influence their development of professional pedagogical reasoning capabilities. This study also takes up Maton's (2014) challenge regarding seeing both knowledge *and* knowers in social practices. It has framed pedagogical reasoning as being about a specialised way of thinking *and* about a knowledge base on which to make reasoned judgements. It has also worked to elucidate the knowledge base for pedagogical reasoning that is drawn upon by differently qualified pre-service teachers.

The last word: The title of this thesis
In his 1903 play, *Man and Superman*, George Bernard Shaw penned the proverb, "those who can, do; those who can't, teach". This proverb has become popular in modern culture, often used as an attack of the teaching profession and those who enter into it. Teaching is often seen as a second-rate career choice, reserved for 'those who couldn't succeed at anything else'. I myself was discouraged from pursuing a teaching qualification because 'there were better options' for me. Luckily, passion trumped popular culture in this case…

Lee Shulman ended his essay, *Those who understand – knowledge growth in teaching* (1986), with an adaptation of Shaw's proverb, saying that "[t]hose who can, do; those who *understand*, teach". Drawing on the work of Aristotle, Shulman made a case that the ultimate form of understanding is being able to teach what you understand. This thesis (after swimming through a plethora of other titles), became named "those who

can *think*, teach" after my explorations of the literature of pedagogical reasoning revealed to me that at the core of professional teachers' work is the ability to reason, engage in meta-cognition, or, put simply, *think*. Effective teaching is *not* just acting like a teacher. It is having a confident command of the knowledge bases of teaching and a sophisticated way of thinking about and blending them in order to organise systematic learning and provide all learners with epistemological access to knowledge (Morrow, 2007).

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APPENDIX A: MRTEQ (2015) Appendix C

Appendix C: Basic Competences of a Beginner Teacher

The following are the minimum set of competences required of newly qualified teachers:

1. Newly qualified teachers must have sound subject knowledge.

2. Newly qualified teachers must know how to teach their subject(s) and how to select, determine the sequence and pace of content in accordance with both subject and learner needs.

3. Newly qualified teachers must know who their learners are and how they learn; they must understand their individual needs and tailor their teaching accordingly.

4. Newly qualified teachers must know how to communicate effectively in general, as well as in relation to their subject(s), in order to mediate learning.

5. Newly qualified teachers must have highly developed literacy, numeracy and Information Technology (IT) skills.

6. Newly qualified teachers must be knowledgeable about the school curriculum and be able to unpack its specialised content, as well as being able to use available resources appropriately, so as to plan and design suitable learning programmes.

7. Newly qualified teachers must understand diversity in the South African context in order to teach in a manner that includes all learners. They must also be able to identify learning or social problems and work in partnership with professional service providers to address these.

8. Newly qualified teachers must be able to manage classrooms effectively across diverse contexts in order to ensure a conducive learning environment.

9. Newly qualified teachers must be able to assess learners in reliable and varied ways, as well as being able to use the results of assessment to improve teaching and learning.

10. Newly qualified teachers must have a positive work ethic, display appropriate values and conduct themselves in a manner that befits, enhances and develops the teaching profession.

11. Newly qualified teachers must be able to reflect critically on their own practice, in theoretically informed ways and in conjunction with their professional community of colleagues in order to constantly improve and adapt to evolving circumstances.

APPENDIX B: Biographical information of participants

Table B-1: Summary of the participant details

	Name[93]	Gender	Race	ITE programme of study	Nature of study	University
1.	Taryn	Female	White	BEd (4th)	Full-Time	University of the Witwatersrand
2.	Karabo	Female	Black	BEd (4th)	Full-Time	University of the Witwatersrand
3.	Tracy	Female	Black	BEd (4th)	Full-Time	University of the Witwatersrand
4.	Shanae	Female	White	BEd (4th)	Full-Time	University of the Witwatersrand
5.	Jenna	Female	White	PGCE	Full-Time	University of the Witwatersrand
6.	Charli	Female	White	PGCE	Full-Time	University of the Witwatersrand
7.	Sarah	Female	White	PGCE	Full-Time	University of the Witwatersrand
8.	Ashley	Male	Black	PGCE	Full-Time: learnership	University of Johannesburg
9.	Tshepo	Male	Black	BEd (4th)	Part-Time: learnership	University of South Africa
10.	Laeticia	Female	Black	PGCE	Part-Time: learnership	University of South Africa

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[93] Not their real names. As far as possible, each participant and I agreed on a pseudonym that reflected their ethnicity and was in some way similar to their real names. Four of the participants chose pseudonyms that were completely different from their real names, because they really liked that name.

APPENDIX C: Interview Schedules

APPENDIX C1: Participant brief

November 2014

Dear _____

Thank you very much for being willing to participate in my research. Your contribution to this research will be invaluable. I hope that you enjoy the research process.

This is the first step in the three-step research process which asks you to watch a video of a third-year student teacher, Miss Rebecca Mdluli, teaching Geography to a Grade 8 class in an urban school. Please watch this video by yourself and write notes on anything that you find interesting. Please include as much detail as possible, explaining your thinking and reasoning. I have given you some loose guidelines in order to guide your thinking, but feel free to stray from the guidelines and write whatever you want to reflect on.

1. Look at Miss Mdluli's lesson preparation:
   a. What general comments would you give the student teacher based on her lesson plan?
   b. What aspects of the lesson planning and preparation do you think she did well?
      i. Why?
      ii. Where did you learn that this is a good way to plan lessons?
   c. What specifically should she do to improve her lesson planning and preparation?
      i. Why do you make these recommendations?

      ii. Where did you learn what is needed for quality lesson planning?

2. Watch the video of Miss Mdluli's teaching:

   a. What aspects of the lesson/teaching do you think she did well?

      i. Why?

      ii. Where did you learn that this is a good way to teach?

   b. What aspects of the lesson/teaching do you think she could improve on?

      i. Why?

      ii. Where did you learn that this is not such a good way to teach?

   c. What general comments would you give the student teacher based on her teaching?

Thank you very much. Please hand me your notes or scan and email them to me (xxxxxxxx@gmail.com) as soon as possible. Please don't edit them or change them in any way – I'd like to see your reflections as they are. This helps to preserve the validity of my data.

I will be in contact with you to set up another time in which to complete Step 2 of the research process.

APPENDIX C2: Assessment rubric

CRITERIA	Not yet coping	Emerging teaching competence	Developing skilled teaching competence	Thoughtful, insightful teaching competence	Comments
Knowledge & understanding of content	Inaccurate content or misunderstands concepts frequently	Knowledge often limited to what learners need to know.	Research evident, demonstrates sound understanding of topics beyond what learners need to know	Comprehensive, well organised knowledge of topics; foregrounds main ideas; networked examples	
Formulation of purpose	Limited consideration or understanding of lessons' purpose	Purpose of the lesson is unclear or vaguely formulated	Clear purpose in terms of key questions; skills; attitudes and values	Purpose is subject specific, reflecting the knowledge, skills and dispositions of the subject discipline	
Conceptualisation of lessons	Incoherent lesson steps not aligned with purpose	Lesson steps often disjointed without links between steps	Lesson steps coherent but not always thoughtfully scaffolded	Thoughtfully conceptualised and scaffolded lesson steps	
Lesson plans	Vaguely written or generic write up of lesson steps	Lesson plan is detailed but lacks evidence of rationale for choices	Thoughtful and thorough, coherent planning of lesson	Lesson plan is clearly a rationale for choices, weighing up option and justifying situation-appropriate teaching	
Teaching & learning support materials	Lesson lacks support materials	Mainly uses support materials provided	Selects appropriate support materials, uses them effectively	Develops / modifies materials appropriate to level of learners; uses resources innovatively	
Ability to communicate	Struggles to communicate with learners in language of instruction	Explanations, questions and instructions are not always clearly conveyed to learners	Uses the language of instruction to question, explain and instruct; language appropriate to level of the learners	Uses appropriate language to explain, instruct and question learners clearly; actively develops learners' subject literacy in lessons	
Teaching & learning strategies	Teaches mainly by transmitting content to learners; learning strategies not evident	Uses a few teaching & learning strategies with little variation	Experiments with a variety of teaching & learning strategies	Thoughtfully selects and effectively uses a variety of teaching & learning strategies appropriate to content and learners	

APPENDIX C3: Individual interview schedule

Thank you for your reflections and thoughts on the video of Miss Mdluli. Now I am going to ask you some questions about your reflections*.

NOTE: These questions are very general because I will need to tailor them to the responses of each participant. However, all participants will be talking about the knowledge bases upon which they made their judgements on the practice in the video.

1. In general, what did you think of the teaching that happened in the video? Talk about your thoughts on the teaching.
2. Here is a rubric which has been devised to assess teaching. Could you please fill it in?

Go through each item in the rubric:

a. Why did you rate Miss Mdluli like this?
b. Where did you learn that this is important to consider in teaching?

Thank you so much for sharing this with me. The next step is the focus group. Please watch the video again before the focus group session in order to refresh your memory on the teaching in the video.

APPENDIX C4: Focus group interview schedule

Thank you, everyone, for your willingness to share your thoughts in relation to Miss Mdluli's teaching. This is the final step in the research process. Today, you will be sharing with your colleagues your thoughts about the teaching in the video. Feel free to talk about what you have spoken about with me or to bring in new ideas. I will give you some guiding questions but essentially, today is a discussion with your colleagues – talk to *them*.

1. Let's begin by talking about our overall perceptions of Miss Mdluli's teaching. What did you think of her teaching generally?
2. We're going to do a 'STOP – START – CONTINUE' evaluation of Miss Mdluli's teaching. Here, you need to state what you think Miss Mdluli needs to stop doing in her teaching, what she should start doing, and what she should continue doing that she is already doing. Discuss it. Can you come to a consensus?
3. Okay, so now you're giving peer feedback to Miss Mdluli. Can you think of five pieces of advice that you'd give her?
4. Which is the most important and the least important of these bits of advice that you are giving her? Can you rank them?

Thank you so much for sharing with me and your colleagues. Please do not speak to anyone else about what your friends said in this focus group. Thank you again.

APPENDIX D: Letters of permission and consent

APPENDIX D1.1: Letter to Head of School, Wits School of Education

Wits School of Education

27 St. Andrews Road

Parktown

Johannesburg

2193

1 October 2014

Dear Professor Baxen and Professor Brodie,

RE: Permission to conduct research at the Wits School of Education

My name is Dale Taylor, and I am a student registered for a Master of Education by research only, with a particular area of interest in teacher education. My supervisor for this dissertation is Dr Lee Rusznyak.

I wish to conduct research within the Wits School of Education. The title of the proposed research is *Professional judgements on practice: Do different initial teacher qualifications enable students to make similar judgements on practice?* I wish to interview nine students at the School of Education (three Fourth Year B.Ed students, three final year PGCE students and three First Year B.Ed students) about the kinds of professional judgments that they make in response to a videoed lesson, as well as the knowledge bases upon which they draw in order to make these professional judgments.

Please note that the participants will be alerted to their rights as research participants. They will be informed that participation in this research is entirely voluntary, that there are no ill-effects for refusal to participate in the study, and if they do consent to participate in the study and wish to withdraw at any time, they are free to do so and there are no repercussions for that either. Furthermore, their information would be kept confidential, and a pseudonym would be used in the final research report. Any raw data (interview transcripts, etc) will be locked in my supervisor's office and destroyed within five years of the completion of the report. Participants may access the final report once it is completed.

The interviews will consist of three sections: an individual reflection on the video, a guided reflection with myself, and a focus group interview with the other participants from the same cohort. Each interview session is scheduled to last between an hour and an hour and a half, and will be conducted at a convenient time for each of the participants. Please see the proposed interview schedule attached. Ethical clearance has been applied for and is pending.

Your permission to conduct this research within the School would be appreciated. Please do not hesitate to contact me or my supervisor if you should have any queries.

Sincerely,

Dale Taylor (Researcher)

Tel: 000 000 0000

Email: xxxxxxxx@gmail.com

Supervisor:

Dr. Lee Rusznyak (on sabbatical)

Tel: 000 000 0000

Email: Lee.Rusznyak@wits.ac.za

APPENDIX D1.2: Letter to Chief Executive Officer, The Independent Schools Association of South Africa

Wits School of Education

27 St. Andrews Road

Parktown

Johannesburg

2193

1 October 2014

To whom it may concern,

RE: Permission to conduct research at ISASA

My name is Dale Taylor, and I am a student registered for a Master of Education by research only at the Wits School of Education, University of the Witwatersrand, with a particular area of interest in teacher education. My supervisor for this dissertation is Dr Lee Rusznyak.

I wish to conduct research student teachers currently doing learnerships in schools. The title of the proposed research is *Professional judgements on practice: Do different initial teacher qualifications enable students to make similar judgements on practice?* I wish to interview three student teachers who are in their final year of their initial teacher education qualifications about the kinds of professional judgments that they make in response to a videoed lesson, as well as the knowledge bases upon which they draw in order to make these professional judgments.

Please note that the participants will be alerted to their rights as research participants. They will be informed that participation in this research is entirely voluntary, that there are no ill-effects for refusal to participate in the study, and if they do consent to participate in the study and wish to withdraw at any time, they are free to do so and there are no repercussions for that either. Furthermore, their information would be kept

confidential, and a pseudonym would be used in the final research report. Any raw data (interview transcripts, etc) will be locked in my supervisor's office and destroyed within five years of the completion of the report. Participants may access the final report once it is completed.

The interviews will consist of three sections: an individual reflection on the video, a guided reflection with myself, and a focus group interview with the other participants who are engaged in a learnership. Each interview session is scheduled to last between an hour and an hour and a half and will be conducted at a convenient time for each of the participants. Please see the proposed interview schedule attached. Ethical clearance has been applied for and is pending.

Your permission to conduct this research with student teachers registered with ISASA would be appreciated. Please do not hesitate to contact me or my supervisor if you should have any queries.

Sincerely,

Dale Taylor (Researcher)

Tel: 000 000 0000

Email: xxxxxxxx@gmail.com

Supervisor:

Dr. Lee Rusznyak (on sabbatical)

Tel: 000 000 0000

Email: Lee.Rusznyak@wits.ac.za

APPENDIX D2.1: Video request – Miss Rebecca Mdluli

11 May 2014

Dear Miss Rebecca Mdluli,

I, Dale Taylor, am a Master of Education student registered at the Wits School of Education. For my research, I am conducting a study provisionally entitled *Do different initial teacher qualifications enable students to make similar judgements on practice?* I am interested to find out what kinds of conceptual differences in the professional judgments of student teachers exist, among first year Bachelor of Education, final year Bachelor of Education, Postgraduate Certificate in Education and student teachers who complete their initial teacher education while working at a school.

As a research tool, I require a video of a student teacher teaching a lesson during the current session of Teaching Experience (6 May – 24 May 2014). These would be filmed on Teaching Experience by a professional videographer, who is highly experienced in classroom filming.

As a Social Science student teacher, if you consent to me filming you, I would ask that the lesson that we film of you are conceptual lessons (in other words, not practical lessons, but lessons where you actually teach a concept to the learners).

The video will be used by me to study the professional judgments that are made by first and final year B.Ed, PGCE and learnership student teachers. That means that the video of you won't be analysed by me, but by about twelve other student teachers (I would like to have three student teachers from each cohort). They would not know your name or the school that you are teaching at, or even that you are a Wits student. I intend to interview the students that are not in your year at university so they will not know who you are. I will ask them to talk about what they think of the lesson *as a whole* (what they think went well, what they think needed improvement, what they think they

would say to you). I will then analyse what *they* say in order to judge the kinds of professional judgments that they make in analysing the video.

In addition to the video of your lesson, I would also kindly request a copy of your lesson plan, as well as an interview with you after you have watched the video. If you are uncomfortable with the interview, you may rather submit a reflection to me. But an interview would be best. Of course, your answers would remain totally confidential.

I will most likely give a brief explanation of the content of the video in my research paper, but I will not mention your real name, the name of the school, or anything that could in any way reveal your identity. I would describe things like the grade, the type of school, the subject, and the topic that you taught and how you decided to teach it (for example, inductively, using groupwork tasks , etc.).

I will not film the learners' faces at any time. If you do agree to allow me to video you, please do not change your teaching in any way for the filming of this video. I really just want an authentic, typical South African lesson to show to my participants.

If you are willing to allow me to film your lesson, kindly complete and sign the attached consent form. If you should have any queries regarding this research, please do not hesitate to contact me or my supervising lecturer.

Kind regards,

Dale Taylor

Email: xxxxxxxx @gmail.com   Research supervisor: Dr. Lee Rusznyak

Cell: 000 000 0000   Email: Lee.Rusznyak@wits.ac.za

APPENDIX D2.2: Video consent – Miss Rebecca Mdluli

Please fill and return the reply slip below and indicate your willingness to allow me to film your lesson as a research tool for my research project called:

Do different initial teacher qualifications enable students to make similar judgements on practice?

Permission for lesson to be videotaped

I, _____ (Student number: _____)

[ ] **give my consent** to let Dale Taylor film my Grade 8 Social Science lesson, as well as use my lesson preparation in her research.

| Please tick your choice. |

OR

[ ] **do not give my consent** to let Dale Taylor film my Grade 8 Social Science lesson and use my lesson preparation in her research.

Please tick:

[ ] I know that I may withdraw from the videotaping at any time and that I and my learners will not be advantaged or disadvantaged in any way by the videotaping of my lesson.

[ ] I know that the videotapes will be used for this study only.

[ ] I know that the tapes will be destroyed between 3-5 years after completion of this project.

[ ] I know that the video will be used for research purposes only and that the participants who are seeing this video will not know my identity at all.

Student Signature: _____   Date: _____

APPENDIX D3.1: Video request – School Principal

11 May 2014

Dear Principal and Management Committee,

I, Dale Taylor, am a Master of Education student registered at the Wits School of Education. For my research, I am conducting a study entitled *Do different initial teacher qualifications enable students to make similar judgements on practice?* I am interested to find out what kinds of conceptual differences in the professional judgments of student teachers exist, among first year Bachelor of Education, final year Bachelor of Education, Postgraduate Certificate in Education and student teachers who complete their initial teacher education while working at a school.

As a research tool, I require a video of Ms Rebecca Mdluli's (Student number 000000)[94] Social Science lessons. Ms Mdluli has been allocated to your school during the current session of Teaching Experience (6 May – 24 May 2014). These would be filmed on Teaching Experience by a professional videographer, who is highly experienced in classroom filming.

Being a host to a Social Science student, I would like to kindly request your permission to film some of the student's lessons in a classroom at your school. I would ideally like to film some conceptual lessons (in other words, not practical lessons) to the Grade 8 learners she is allocated to teach.

The purpose of the video is for other students to respond to the quality of teaching in the lesson, in order for me to look at the quality of the professional judgments that the responding students are making. Please be assured that the learners' faces would not

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[94] Changed in the thesis to protect the student teacher's identity.

be videoed, although their voices may be recorded if they are answering questions, and that the school's name nor any learners' name will be made public. The video will only be shown to the research participants and not disseminated publically in any way. After my research is completed, the video will be locked in a secure office and destroyed after 3 – 5 years.

If you are willing to allow me to undertake filming at your school, kindly complete and sign the attached consent form. If you should have any queries regarding this research, please do not hesitate to contact me or my supervising lecturer.

Kind regards,

Dale Taylor

Email: xxxxxxxx@gmail.com

Tel: 000 000 0000

Research supervisor: Dr. Lee Rusznyak

Email: Lee.Rusznyak@wits.ac.za

Tel: 000 000 0000

APPENDIX D3.2: Video consent – School Principal

Please fill and return the reply slips below and indicate your willingness to allow learners in your school to take part in my voluntary research project called:

Do different initial teacher qualifications enable students to make similar judgements on practice?

Permission for learners to be videotaped

I, _____ the principal of _____

[ ] **give my consent** to let Grade 8 Social Science learners in my school be video recorded in class.

| **Please tick your choice.** |

OR

[ ] **do not give my consent** to let Grade 8 Social Science learners in my school be video recorded in class.

Please tick:

[ ] I know that my learners may withdraw from the videotaping at any time and that my learners will not be advantaged or disadvantaged in any way by the videotaping of their student teacher.

[ ] I know that the videotapes will be used for this study only.

[ ] I know that the tapes will be destroyed between 3-5 years after completion of this project.

Principal Signature: _____   Date: _____

Contact person: Dale Taylor

Address: 27 St Andrews Road, Parktown

Tel: 000 000 0000

APPENDIX D4.1: Video request – Parents and learners

11 May 2014

Dear Parent and Learner,

I, Dale Taylor, am a Master of Education student registered at the Wits School of Education. For my research, I am conducting a study provisionally entitled *Do different initial teacher qualifications enable students to make similar judgements on practice?* I am interested to find out what kinds of conceptual differences in the professional judgments of student teachers exist, among first year Bachelor of Education, final year Bachelor of Education, Postgraduate Certificate in Education and student teachers who complete their initial teacher education while working at a school.

In order to conduct the research, I would like to use videotape lessons taught by a student teacher during their Teaching Practical. These lessons would be filmed on Teaching Experience by a professional videographer, who is experienced in classroom filming.

I would like to video tape the student teacher who is teaching your child Social Science during the current Teaching Experience session (6 May 2014 – 24 May 2014), and as such, I request your consent to videotape a lesson that will be taught to your child's class. Please note that the video will focus on the *student teacher*, and not any of the learners in the Social Science classroom. The videographer will do his utmost to avoid the face of any learner in the video, but the teaching and interaction with learners that is undertaken by the student teacher.

There are no ill-effects for refusal to participate in the video, and if you do not wish for your child to be a part of the video, please indicate as such on the consent form

attached, and your child will be seated behind the videographer at the time of the filming. The video will be used exclusively for the above research project and will only be shown in a private viewing to the participants in this study. There will therefore be no negative consequences arising from the videotaping of the lesson to any learners in the class. The video will be destroyed within five years of the completing of the research project.

If you give permission for me to videotape a Social Science lesson taught to your child's class by the student teacher, kindly complete and sign the attached consent form. Please also ask your child to fill out and sign the last page of this document. If you should have any queries regarding this research, please do not hesitate to contact me or my supervisor.

Kind regards,

Dale Taylor

Email: xxxxxxxx@gmail.com

Cell: 000 000 0000

Research supervisor: Dr. Lee Rusznyak

Email: Lee.Rusznyak@wits.ac.za

APPENDIX D4.2: Video consent – Parents

Please fill and return the reply slips below and indicate your willingness to allow your child to take part in my voluntary research project called:

Do different initial teacher qualifications enable students to make similar judgements on practice?

Permission for my child to be to be videotaped

I, _____ the parent of _____

[ ] **give my consent** to let my child be video recorded in the Social Science class.

<u>OR</u> | **Please tick your choice.** |

[ ] **give my consent** to let my child be video recorded in the Social Science class but **would like my child to be seated behind the videographer at all times.**

Please tick:

[ ] I know that I may withdraw from the videotaping at any time and that my child will not be advantaged or disadvantaged in any way by the videotaping of his/her student teacher.

[ ] I know that the videotapes will be used for this study only.

[ ] I know that the tapes will be destroyed between 3-5 years after completion of this project.

Parent Signature: _____   Date: _____

Contact person: Dale Taylor

Address: 27 St Andrews Road, Parktown

Tel: 000 000 0000

APPENDIX D4.3: Video consent – Learners

Please fill and return the reply slips below so that Dale Taylor knows that you are willing to be a part of the filming of Ms. Mdluli's lessons. Remember that the filming is a part of a study called:

Do different initial teacher qualifications enable students to make similar judgements on practice?

Permission to be videotaped

I, _____

> *Write your own name here.*

[ ] **agree to be in class and in front of the camera when my student teacher is videotaped** in the Social Science class. I know that only the back of my head will be on camera, and no one will ever know who I am or what school I go to

> *Please tick your choice.*

<p align="center"><u>***OR***</u></p>

[ ] **agree to be in class and in front of the camera when my student teacher is videotaped** in the Social Science class but ask that **I sit behind the camera man so that the camera can't see me at all**.

Please tick:

[ ] I know that if I ask not to be filmed, nothing bad will happen to me and I will still learn in the classroom as normal.

[ ] I know that the videotapes will be used for this study only, and that no one besides Dale Taylor and the people she is interviewing for the study will see this video.

[ ] I know that the tapes will be destroyed between 3-5 years after completion of this project so that no one else will ever see this video of my class.

Learner Signature: _____   Date: _____

APPENDIX D5.1: Participation invitation – Participants

Dear Student,

I, Dale Taylor, am a Master of Education student registered at the Wits School of Education. For my Masters research project, I am conducting a study entitled *Do different initial teacher qualifications enable students to make similar judgements on practice?* I am interested to find out what kinds of conceptual differences in the professional judgements of student teachers exist, among first year Bachelor of Education, final year Bachelor of Education, Postgraduate Certificate in Education and student teachers who complete their initial teacher education while working at a school.

Being a final year student, I would like to invite you to participate in my research. By participating in the study, you would be requested to:

1. Watch a video of a student teacher teaching a Geography lesson *by yourself* and write down your thoughts about the teaching. You will be given the video as well as some guidelines on what to think about while watching.

(These notes from your initial, individual viewing will be emailed or handed to me before the next step in the process.)

2. Attend a one-on-one *interview* with me, where I ask you to reflect on your responses to the video. This will take about an hour.

3. Attend a *focus group* interview with the rest of the participants from your programme of study that have consented to be a part of my research, where you will discuss the video and your thoughts about it in a community. This should take no longer than an hour-and-a-half.

The interview and the focus group will be audio-taped, in order for the interview data that I gather to be as accurate as possible.

Participation in this research is entirely voluntary. There are no ill-effects for refusal to participate in the study, and if you do consent to participate in the study and wish to withdraw at any time, you are free to do so and there are no repercussions for that either. Furthermore, your information would be kept confidential, and if necessary, a pseudonym would be used in the final research report. You and your information, as well as any responses that you give in your individual reflections and interview situation will remain completely anonymous Confidentiality in the focus group on my part is guaranteed, however, this cannot be guaranteed on behalf of the focus group members, although I will strongly request and encourage your peers not to share any discussions arising from the focus group with anyone else. Any raw data (interview transcripts, etc.) will be locked in my supervisor's office and destroyed within five years of the completion of the report. You are more than welcome to access the final report once it is completed. The results of this research may be published in an educational journal and presented at an academic conference.

If you are willing to participate in this research project, kindly complete and sign the attached consent form. If you should have any queries regarding this research, please do not hesitate to contact me.

Kind regards,

Dale Taylor

email: xxxxxxxx@gmail.com

APPENDIX D5.2: Participation consent – Participants

I, _____(*participant's full name*), student number _____

consent / do not consent | Please circle your choice. |

to participate in this research, which would allow the researcher, Dale Taylor, to:

- Ask me to watch a video of another student teacher's teaching and make notes about my thoughts and reflections on the teaching in the video
- Interview me on my thoughts and reflections about the video of another student teacher's teaching
- Interview me with my peers in a focus group about my thoughts on the teaching in the video
- Use the conversations, reflections (written or verbal) and views that arise from the aforementioned reflections and interviews for her Master of Education research

I acknowledge that

- I have read and understand the participant information sheet
- I understand that my privacy will be maintained at all times and I will not be identified in any research report or publication
- I participate voluntarily, knowing that I may withdraw from the study at any time with no negative consequences
- Any discussions arising from the focus group discussion with my peers in confidential, and I will not share them with anyone outside of the focus group

Signature: _____

Date: _____/_____/_____

Email Address*: _____

Contact Number*: _____

* Please note that these contact details will <u>only</u> be used in order to contact you to set up the interviews if you consent to participate in the study.

APPENDIX D5.3: Audio recording consent – Participants

I, _____(*participant's full name*), student number _____

consent / do not consent

> *Please circle your choice.*

to the interview and focus group with the researcher, Dale Taylor, being audio-recorded using an MP3 audio-recording device.

I acknowledge that

- I have read and understand the participant information sheet
- I understand that my privacy will be maintained at all times and I will not be identified in any research report or publication
- I participate voluntarily, knowing that I may withdraw from the study at any time with no negative consequences
- Any discussions arising from the focus group discussion with my peers in confidential, and I will not share them with anyone outside of the focus group

Signature: _____

Date: _____/_____/_____

Email Address*: _____

Contact Number*: _____

* Please note that these contact details will <u>only</u> be used in order to contact you to set up the interviews if you consent to participate in the study.

APPENDIX E: Ethical Clearance Certificate

Wits School of Education

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28 October 2014

Student Number: 377076

Protocol Number: 2014ECE53M

Dear Dale Heidi Taylor

Application for Ethics Clearance: Master of Education by Dissertation

Thank you very much for your ethics application. The Ethics Committee in Education of the Faculty of Humanities, acting on behalf of the Senate has considered your application for ethics clearance for your proposal entitled:

Professional judgments on practice: Do different initial teacher qualifications enable students to make similar judgments on practice?

The committee recently met and I am pleased to inform you that **clearance was granted.** However, there were a few small issues which the committee would appreciate you attending to before embarking on your research.

The following comments were made:

- In the participant information sheet:
- Please indicate where the interview and focus group is expected to take place.
- You cannot ensure confidentiality but rather anonymity as the participants might know one another. Please exchange the use of these terms.
- Include all of the different forms of participation onto one consent form for that the participants can either accept or decline.
- For the second phase of the process, there is not necessarily an interview schedule provided. It is more about mediating the process as participants work through the rubric. Please clarify your intent here.

Please use the above protocol number in all correspondence to the relevant research parties (schools, parents, learners etc.) and include it in your research report or project on the title page.

The Protocol Number above should be submitted to the Graduate Studies in Education Committee upon submission of your final research report.

All the best with your research project.

Yours sincerely,

MMabetz

Wits School of Education

011 717-3416

Cc Supervisor: Dr L Rusznyak

APPENDIX F: Key EPRs

APPENDIX F1: Learnership Key EPRs

EPR L1: Tshepo (in the individual interview)

Interviewer:	*In terms of her knowledge of understanding and content, you scored her at level 2. Why?*
Tshepo:	She used the textbook more and she used only the definitions and the words and whatever appeared from the textbook. What is in the textbook is what learners just need to know. Although she made printouts, they were from the textbook so that learners can progress with her through the lesson. There wasn't anything extra that could spice up the lesson and the knowledge and understanding of content was limited to what the learners should know.
Interviewer:	*Can you think of a specific place or experience that made you realise as a teacher that you need to know more than the learners need to know?*
Tshepo:	In financial maths learners just need to know compound and simple interest – they need to know all those formulae, but the question why is very important to be answered. It speaks to why we are teaching in the first place, are we teaching for results or for learners to know something that will help them in the future. As a teacher I felt that they needed to know more about what I'm teaching – I need to know more about how is it applicable in real life, in the world of business how is it used and why is it used so it keeps the lesson interesting. In this case I didn't find the lesson had meaning except for what it was supposed to achieve, what it was supposed to achieve was just for the learners to know a certain part of work.

EPR L2: Tshepo (in the individual interview)	
Interviewer:	*In terms of her conceptualisation of the lesson, you scored her at level 1. Why?*
Tshepo:	During the lesson she was like… she looked at the page, she was not prepared she was not used to the textbook that she was using. As a result, she found a situation where she was moving to this page and then saw, "Oh my goodness, maybe I don't understand or I can't explain this," and then she jumped to another page. For me because she wasn't prepared, "Let's jump to this page; we are going back to this next time." It is easier to say to learners, "Page this and that and that talks about this, but we are going to move to this and then come back to it because of this and that." It gives confidence to learners that you know what you are doing but if you are going to jump a page and jump in between it's not going to be very coherent, the lesson is not going to progress very smoothly. The other problem that I noticed was from the introduction to the new content that was going to be taught, I didn't find a link. What I'm saying about a link is this: in the introduction you also check the learners' prior knowledge, what the learners know and don't know, and you can add on to that. She asked questions, she doesn't follow on from then on she gave definition of what a climate is, and I don't fully agree with her definition of what a climate is, and then she talked about temperature as a degree of something. I felt that there should have been a difference between what we call climate and weather. I felt that there should have been a definition of weather: what do we mean by weather, what do we mean by climate and go to temperature.
Interviewer:	*She should differentiate between them?*
Tshepo:	Yes. Because now learners will just start thinking that climate is weather, and they are two totally different things.
Interviewer:	*Where did you learn that it's important that your lesson steps match up with the purpose of the lesson?*
Tshepo:	In my teaching prac most of the time as you were talking to my principal now I have been working at the school SSB for a very long

	time, my mentor is saying that there should be a correlation, the lesson should just flow you shouldn't be having a problem where the lesson is incoherent because then you start having problems with the learners. They should see that you know what you are doing.
Interviewer:	*Can you think of a specific experience or something you've developed over time?*
Tshepo:	In my lessons – not to say that I am putting myself in the good side – but in all honest facts my lessons have always been coherent what I've maybe had a problem with was to prepare for a lesson. Sometimes I will go to class maybe not prepared and then some question hits me, hits the whole class, learners lose concentration, lose their trust in me but in terms of coherence and how I go about my lesson I have never had a problem.

EPR L3: Laeticia (in the individual interview)

Interviewer:	*For her learner participation and development, you said level 2: learners are given tasks that develop recall.*
Laeticia:	I noticed that she gave them an activity from the textbook and referred them to the hand-outs. In between the lesson she does ask questions but at the end she doesn't give them activities to see how much they understood during this lesson. She doesn't let them explain how they found it, why they find it, why they are saying that: she just gives them tasks.
Interviewer:	*Where did you learn that just developing recall isn't enough?*
Laeticia:	In my classroom. I once had a bad experience in my classroom. I went there, I told my learners, it was a teacher-centred task I just fed them information. I didn't give them tasks or anything. The next day I said, "Okay let's continue from what we did yesterday," and they said, "What are you talking about?" Because I didn't give them a chance to ask me questions, I didn't give them tasks and see if they understand they were all surprised, and I said, "We did this yesterday," and they kept quiet and looked at me. That's when I knew when formulating lessons, I must give learners tasks, then they have

to answer, and they have to ask me something. I did not allow my learners to get out without asking me a question, I told them, "If you don't ask me a question you are not getting out. You will remain with me for the rest of the day." Whenever I am teaching, I created a classroom environment, we had a circular thing, the tables were circular, and I would stay in the middle, I would teach them. If you don't have a question, I do have one and if you can't answer it then I can see I was just talking to myself and the learners do not recall what I was talking about.

EPR L4: Laeticia (in the individual interview)
Interviewer: *Her classroom management, you said level 3: she maintains discipline through most parts of the lesson.* **Laeticia:** Yes, she does. Looking at the video, there was a certain learner at the back, I didn't see the learner very well. You could see her calling out to him. Her discipline style at some point, I didn't like it. She left the whole classroom and went to the learner at the back. The class was well-disciplined, just one learner who wasn't. Rather use body language. With learners making noise, you don't need to disturb the whole class, you just look at the learner, talk to the learner with your eyes and continue. She called out to the learner, and when you call out to a learner, all the learners stop, and when you come back now learners don't know what you were talking about, you have to restart, in that case you won't restart, you continue, you think they will still remember, but there was a little bit of disruption. On the whole her class was disciplined. **Interviewer:** *Where did you learn that you need to, you spoke about using body language as a strategy and not creating this break by shouting out.* **Laeticia:** My mentor. She once told me that she went out of a class crying. Her learners were making noise, she went out, went to the staffroom and drank coffee. She left them. She told me never leave your learners. She told me if there is a learner making a noise, stand in front and

keep quiet, concentrate on the learner, once you are quiet, the whole class is quiet, people are wondering why you are quiet. You are still at the front; they still can see you. When the learner faces you, [he or she realises], "Okay I am the one in the wrong," then talk to him or her with your eyes, use your body language somehow, stop doing this. Then the learner will stop. I notice that calling out mostly in public schools, it seems like disrespecting the learner, if you listen to the girl in the video, she calls out, "Hey wena!" In our language that is so disrespectful. When you say that the learner won't listen to you anymore. She's like, "This person doesn't respect me." So firstly, maintain the respect, just keep quiet, look at the learner and the learner will be like, "Okay, now she's talking to me," then you continue with it. No need to disturb the whole class to maintain discipline in the classroom.

EPR L5: Ashley (in the individual interview)

Interviewer:	*For monitoring, learning, understanding, you said level 2. Why?*
Ashley:	Monitoring and learning not well done. She could just ask questions and pointing to specific people to answer to see if they are grasping the content.
Interviewer:	*What do you think of her always asking, "Do you understand?"*
Ashley:	That doesn't work. It also depends on the class. Some learners are free, they will stop you but when you always nag them sometimes, they just say, "Yes," because it's a group. Also, the number of the class counts. Smaller groups are easier to teach them and children feel more comfortable to ask.
Interviewer:	*Where did you learn that you can't just rely on the children to ask you for help, you have to go and see if they need help?*
Ashley:	I learned this first time during my high school when I was in class myself. I was in a big class and wasn't easy to ask questions, so most of the time you go home without understanding. That was a problem.

	Even in varsity. But while I was teaching now it was clearer the difference between a bigger and a smaller class.
Interviewer:	*Even if it is a big class you have to find a strategy to make sure everyone is still with you?*
Ashley:	Yes, you have to find a way, there must be a way.

APPENDIX F2: PGCE Key EPRs

EPR P1: Charli (in the individual interview)	
Interviewer:	*For conceptualisation of lessons, you scored her at a level 2 Why?*
Charli:	I'm looking more at the actual lesson. She started off in sequence, but she got stuck on the graphs and it went on and on. Kids weren't responsive enough, so she didn't move on quickly enough. She got a bit side-tracked with the learner rapport.
Interviewer:	*You thought that the planning was there, but something went amiss during the lesson?*
Charli:	I suppose I could also fault the time planning a bit because of the time sequence between the different steps. I would expect her to spend a bit more time, I don't think with the definition but with her wanting to do the graphs, the characteristics. Graph work generally for grade 8s will take a bit longer initially depending on their prior knowledge. She just stuck on that and it seemed to hop around for the different temperature regions with the graphs still but there wasn't a clear understanding behind them. Hopping around and reading temperature and rainfall off graphs and didn't link it too much to the temperature regions – it was just about the graph skills.
Interviewer:	*Where did you learn that you need to have a coherent link between your steps; that your lesson must flow nicely? There is an actual concept that guides your lesson?*
Charli:	I also picked that up on my first teaching prac where I didn't have a clear-cut lesson plan and learners get lost on the way. As soon as you see they are falling off the bus you realise that something is not right in your lesson. If you have a clear aim you can control it a bit better and you can keep most students aware and attentive.

EPR P2: Jenna (in the individual interview)	
Interviewer:	*For her classroom management, you scored her at a level 3.*

Jenna:	There were a few kids at the back who weren't videoed…
Interviewer:	*They did not return the consent forms so we could not include them in the video recording.*
Jenna:	They seemed to cause a few issues. I picked up the one learner was just fooling around. The others were quite good, but whether that's because they knew they were being filmed and watched, I couldn't really tell.
Interviewer:	*It's one of the pitfalls of videoing.*
Jenna:	Unless you have a tiny thing on the wall that they don't notice, you don't really give a real idea of that. I felt that they were a good class, they weren't rowdy. I've had rowdy classes where it is just noise for an entire 40 minutes. So, I thought she did… she has a very good presence.
Interviewer:	*What do you mean by that?*
Jenna:	She seemed to be short or middle height person. Sometimes even grade 8s can be taller than you. Her mannerisms, her establishment that she is the authority, not in all knowledge, she is the authority, I am the teacher here. You must listen to me when I speak to you. And the way she also dealt with the learner at the back who was [mainly] the issue. She spoke to him once and then she went up to him and I thought she did it in a good manner. It wasn't, "Hey you over there you are disrupting the class, get out of my class." She was very professional.
Interviewer:	*Where did you learn that you need to have this air of authority to cope?*
Jenna:	When you step into any grade beyond grade 9 and everyone is way taller than you, you have to realise that you need to be bigger in a sense than them. Also, as a female teaching male students, they need to realise that you are the authority: it's different. In my first teaching prac I would dress extremely smartly. I wore heels all the time. I didn't engage with the learners in a fun manner, it was all strictly professional. I wasn't buddy with them. In my second teaching experience, I was running around all the time, so heels were out of

the question; I still dressed professionally. I took an active interest in their academics, their sport but I still kept it professional. You only see them in teaching prac for 6 weeks, so you don't develop a relationship, but you try not to break down during classes or lose it. You kind of go with the flow but you are still professional. If you have no power one day you say, let's carry on because I knew what I was teaching anyway. You don't run around and freak out.

EPR P3: Jenna (in the individual interview)	
Interviewer:	*For time management she strives to get through work in the available time. She uses mostly suitable pacing.*
Jenna:	We didn't see the entire lesson because most of it was them doing their own work. I think she could have done more explanations, used more examples. That would have occurred if she had done a little more research than she did, and maybe compared South African climate to another southern hemisphere climate or even done a bit of northern hemisphere. You don't want to confuse learners too much. I'm not sure where she was in the syllabus. I know that they do specifically South African and I know that they split it up to give learners more of a world view. I find that homework doesn't get done, so it is important that they learn that work happens in class as well but not too much: you have to have a balance.
Interviewer:	*Where did you learn this?*
Jenna:	Also, through trial and error. I would teach on my teaching pracs and they would have to do a lot of in-house work to minimise your marking. If you had 10 classes, you had to mark all that work, you would be marking every single day. In-class work is important because then you can have a memo, write a note and then you can peer mark it or whatever. When I asked for homework for the next day, it would never come. There would be excuses, or it would be half-heartedly done. As soon as I said it was for marks for the end of year exams, it would be, "Okay, quickly, let's do it." Homework is

	important but it doesn't really happen, learners seem like they don't care.

EPR P4: Sarah (in the individual interview)	
Interviewer:	*For her teaching and learning support material, you scored her at level 2. Why?*
Sarah:	I'm one of those teachers that I like to develop resources so for me just using the worksheet like she did is not good enough. She only gave them hand-outs which is a photocopy of her textbook and she used the board. She did make some attempt, but she didn't really go beyond that, she didn't give them other sources. She didn't develop her own.
Interviewer:	*Where did you learn this was important?*
Sarah:	From my own teaching. The one lesson I stuck to what the school wanted me to stick to and thought this was going really bad because I am not going beyond what the kids want and what they need. I am giving them a basic definition but what if they ask me a question related to that, I've had that before and I've had to say "I have no idea" and then I would go home, look at Google or another textbook and it's there. It is important to use other sources.

EPR P5: Jenna and Charli (in the focus group interview)	
Jenna:	Ja, and with her questioning at the beginning, she kind of threw it out there, "Oh, what is temperature? What is um...you know." She was asking the learners. What she should have done, if not starting that, but sort of say to a specific learner, "What is the definition?" And whether they get it right or wrong, sort of aid them in saying… well if it was wrong, say, "Well no, it was wrong," but ask another learner what is it. You know. So, it's not always, "Oh it's the teacher who has the authority."
Charli:	To build onto that point I think she should start using more meaningful questioning. So, when it comes to, "Do you guys understand?" and

| | the whole class just says, "Yes," you don't actually think half the class understands. So, if she can ask pointed questions that actually gauge what learners know, 'cause it's quite important when you come down to assessment later in the line. And just it's a better gauge of what learners know. 'Cause if you're disinterested, you're easily going to say, 'Yes,' because of course you're not going to want to spend too much... So, I think start using meaningful questioning, and ja, develop a better questioning technique. And maybe use it throughout. |
| **Jenna:** | Maybe also do a quiz. 'Cause that's [also fun]. Um, I have done it with a class of about 30 students. It went completely mad and was really loud. But the kids learned... what was going on. |

APPENDIX F3: BEd Key EPRs

EPR B1: Karabo (in the individual interview)	
Interviewer:	*Knowledge and understanding of content, you scored her at level 2. Why?*
Karabo:	What she was saying was very brief and just came from the textbook. She did not use much analogy or kind of look at how she can use the learners' prior knowledge to extend what she is trying to teach. It felt like it was very limited to just the textbook.
Interviewer:	*Do you think from where you were sitting, she didn't know very much more than what was in the textbook?*
Karabo:	You can never really know, she might know the lot but then just the preparation and planning might have been very little such that when she got into the classroom because she had not prepared she could not really access all those things that she might have known. That's why planning is very important. The knowledge and understanding was limited because she would say – something like that guys – when you are a teacher you don't say something like that – it's either 'that' or 'not.
Interviewer:	*Where did you learn that it is important to learn the content beyond what learners need to know?*
Karabo:	First year Becoming a Teacher. That course was really helpful. Even in explanations, you need to know your content, you need to plan. You might know it, you might be able to do it but if you haven't planned it out and how you are going to convey it, it might end in disaster. Becoming a Teacher was very helpful, as well as methodology. We got to do micro teaching, make lesson plans. So, as you do it more you kind of learn what you need to do and what you should not do. You realise your weaknesses and you learn from that.

EPR B2: Shanae (in the individual interview)

Interviewer:	*Formulation of purpose, you scored her at level 2. Why?*
Shanae:	Due to her intro – the notes are handed out and she mentioned the headings on each of the worksheets or hand-outs and then said, 'so that's what we are going to do today'. There was no clear introduction: "Today we're doing climate. We are going to be looking at temperature and rainfall which forms part of climate." Just like a simple sentence because that would… I don't think the learners knew whether they were concentrating on temperature, climate or rainfall and then there were the different types of climate.
Interviewer:	*Wasn't clear to you?*
Shanae:	No, not clear what the main point was. Even if just simple heading on the board so that drew their focus and they knew this is our main topic and there is a whole lot that falls under that.
Interviewer:	*Not clearly articulated the big ideas and the sub-ideas? Where did you learn that it is important?*
Shanae:	We've done it in our life sciences methodology. So we've done the big ideas and then sub-ideas and seen how your key questions that you are going to ask and the key ideas that they should know should be your big ideas and then you get sub-ideas that would assist and they form a big part of your big ideas and then you get just extra information that fills the gaps. So that would be stuff that you might use in your examples that will assist in learning but not necessarily something that you would test them on. Just in terms of what they should know by the end of the lesson, things that will assist them in knowing.

EPR B3: Tarryn (in the individual interview)

Interviewer:	*For ability to communicate, you scored her at a level 2. Why?*
Tarryn:	If I put myself as a learner and I tried to learn from the lesson I felt I just couldn't. She didn't explain; she just told. "A desert climate has high temperatures and low rainfall." There wasn't "because" or "why," or "this is how it happens," or other examples. There weren't many

	examples like, "Look at the desert here, look at this region, tell me about it." There wasn't any of that interactive… it was just, "This is what it is." It wasn't, "What do you think?", "Do you understand?", "Tell me your understanding of it." There was no feedback. One time she asked someone about their understanding, the child gave her understanding and she shut the child down because it wasn't exactly from the textbook even though it was [the child's] own interpretation of it.
Interviewer:	*You felt that was a problem?*
Tarryn:	Ja, because it's good that they do come up with their own interpretations because then they understand, if they just mimic the textbook then they haven't understood.
Interviewer:	*Where did you learn that this is important to make sure that what you are saying is clear?*
Tarryn:	Trial and error. You find out in prac when you teach, you talk to children and you get results back and nothing is there and you change your practice and over the years you realise that this is how it should be done.

EPR B4: Tracy (in the individual interview)

Interviewer:	*You said in terms of her knowledge of understanding content - developing skills, sound understanding of topics beyond what learners need to know. Why did you say that?*
Tracy:	Because when she's asking them questions, she asks questions and if the learners give a different answer or a wrong answer and then she elaborates and that is when I saw that she did her research, and she also gave example of equator, some countries close to equator, experience rain and all those things. She did not want that answer specifically but she elaborated on that and told the learner the question that could fit that answer.
Interviewer:	*Tell me what do you think she could do to get to the top category?*

Tracy:	At some point I felt like she could have done more research not just on the content itself but also on how watching different videos on climate and how she could explain the topic. I felt that at some point she was asking questions and giving answers at the same time, maybe she was not aware of that.
Interviewer:	*She was answering her own questions?*
Tracy:	Yes, she would say 'right', and learners would say 'yes' but not knowing whether they understood. Maybe using other resources to explain. I liked that she went to the chalkboard and explained – maybe finding other ways of explaining instead of just using learners' everyday examples in terms of explaining temperature maybe by starting with their everyday knowledge, asking them about present weather conditions, just to maybe lead to their understanding of temperature and climate.
Interviewer:	*You've now told me what you would do - where did you learn that that's important - doing research, linking to current context?*
Tracy:	Definitely Becoming a Teacher. I would say that my first year of university I learnt lots of things about teaching, most of the things I know about teaching are from Becoming a Teacher, everything I have learnt from lesson planning, to how to manage a classroom, to decisions that we make and everything, it's from Becoming a Teacher. I think it was Lee Shulman – 'you cannot teach what you don't understand' and I always kept that in mind because we have to reflect on every lesson that we teach. At some point I would realise that there are some lessons that went well, and some did not. Doing the research does not mean just doing it but making sure that you understand and then is easy to reteach it. When you don't understand it is difficult to use different methods to explain because you probably use the same method to explain because you probably don't understand.

EPR B5: Tarryn, Shanae, Karabo, and Tracy (in the focus group interview)	
Tarryn:	Um, well for me it just didn't seem like she knew what she was teaching. And if you don't know what you're teaching, you're not able to teach it, and then the learners can pick it up, and they're not able to learn. And you can't answer questions, and she didn't know where she was, or like definitions, I don't... So if she just took the time to learn about what she was supposedly teaching, then she would have been able to teach it a lot more confidently as well, and be able to handle discipline matters better, and you know, let the children answer the question. She wouldn't have to figure it out for herself. Then she'd be able to know when the fact that the children aren't reading graphs, and that they don't… like they don't know that stuff. Just by knowing what she wants to teach them.
Shanae:	I agree with Tarryn. Um, it felt like she only knew what was in the textbook, and I think that's why she relied on it so much. So, there was no deeper knowledge - um - into that. And then, um, even right at the beginning of the lesson, when she asked the learners "what is climate?" um one of the learners actually responded with the exact same definition she gave them later on. Um, but she had said to the learner that they were incorrect. So, it just - I think she was searching for one - she was searching for one answer, and maybe it was slightly out in terms of the way they phrased it, and then she just discarded it. Um, so ja it was very evident that her, she needs to start reading deeper - getting to know content before she actually teaches it.
Tarryn:	I agree. I think if she, like Shanae said, knew her content knowledge, she would be able to pick up that the children have made their own understanding, and that they actually do understand and...stuff...ja.
Karabo:	I agree with what you guys are saying - uh Tarryn and Shanae, that uh she should have indeed like prepared the content thoroughly, and I also feel like she should allow the learners to actually feel free to talk more in the classroom and to ask questions. Because I felt like

	that was - she did not create an environment where you can feel free to just ask a question.
Tarryn:	I think that would come with; you know if she felt comfortable teaching then she'd feel comfortable with the learners discussing it.
Tracy:	I also agree. Because when you teach something that you do not understand, it's also a bit difficult to keep uh relevant examples. So I also feel that even though she was asking those questions, at some point she was also not sure of their answers, because learners get different answers, and she would say "Oh, twenty-five degrees, maybe twenty-six."
Shanae:	I agree with what you're saying, Tracy. Um, and I think it also comes down to her lesson preparation. Um, there was absolutely nothing in her lesson plan about learner um prior knowledge, or learner misconceptions. And knowing that beforehand would have helped her in teaching her lesson. Cause then she'd know which examples to use, um, that would be relevant to the learners. She'd pick up on where they might have difficulty in the lesson. Um, so I think only as the lesson went on, then she picked up, "Oh they actually don't know how to read off a graph," and then the explanation after that I don't think was good enough. 'Cause it only covered the precipitation part, or the bar graph part, and not actually the line graph part. Um, so ja maybe start looking into - or start putting more focus on - what the learners may know or what the learners may have as misconceptions. Um, and ja just bettering her lesson plans as a whole. Um, she actually needs to start looking at every aspect of the lesson plan. And know that there is a purpose to each part of it.