FOUNDATION PHASE TEACHER PROFESSIONAL LEARNING OUTSIDE THE FORMAL PROGRAMMES AND ITS INFLUENCE ON CLASSROOM PRACTICE IN KWAZULU-NATAL PROVINCE

Submitted in fulfilment of the requirements of the degree of Doctor of Education in the Faculty of Arts and Design at the Durban University of Technology

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DECLARATION

The work presented in this thesis is my original work, and all the sources consulted have been acknowledged. This thesis has not been submitted for any degree or examination at any other university.

This study was mandated by an Ethical Clearance issued by the Durban University of Technology Institutional Research Ethics Committee.

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ABSTRACT

The Foundation Phase (FP) of schooling is a period when children's learning readiness is uppermost, given that this is when they grow and thrive – physically, mentally, emotionally, spiritually, morally, and socially. The need to capitalise on this readiness thus becomes critical, as this is the period when conditions are most conducive to a strong foundation being laid, on which all later learning will rest.

However, it has been documented that initial teacher education courses do not address the specifics of classroom/school realities to equip teachers to work optimally in the education sector (Mukeredzi and Samuel 2020; Nasimiyu 2017). Thus, job-embedded on-going professional learning for teachers, including FP teachers, which extends beyond teacher education is an indispensable aspect of the development and enhancement of teachers' professional knowledge, skills and practice, if meaningful teaching and learning is to take place.

Compared to the large amounts of research in other education sectors, there is, and continues to be a dire need for research, and responsiveness to FP, apart from its contribution to children's early learning. Thus, questions regarding how FP teachers professionally learn and develop beyond formal teacher preparation programmes have not been adequately answered. An understanding of these issues is crucial.

This study explored FP teacher professional learning outside formal programmes, the kinds of professional knowledge that the teachers gain and how this learning influences their classroom practice. Through a multiple-site case study situated within an interpretive paradigm, subjective data were generated from 24 FP teachers employed at selected rural, township and urban schools in KwaZulu-Natal Province, South Africa, through focus group discussions, individual face-to-face interviews, and photo elicitation interviews. Manual data analysis adopted an eight-step coding process.

Two theories: Biggs' (2003) deep and surface learning theory and Illeris' (2009) types of learning, complemented by domains of teacher knowledge by Shulman (1987) and Cogill (2008) enabled unpacking, understanding, and explaining study findings. These show that the FP teachers experienced professional learning through both deep and surface learning strategies in non-formal and informal interaction and collaboration, within two sites: restricted (the school) – through grade, phase and school meetings – and wider professional sites (outside the

school) – through district, and cluster workshops and social meetings. The teachers experienced assimilative, and accommodative learning within the school, and cumulative learning in wider professional sites.

Findings also revealed that FP teachers gained pedagogical knowledge, pedagogical content knowledge, knowledge of context, and knowledge of curriculum through their professional learning. The study found that professional learning influenced teachers' classroom pedagogical practices around: teaching strategies, assessment, and classroom interaction. While the FP teachers experienced professional learning, under-resourcing in rural school contexts and a general lack of parental support in all the contexts studied, hampered teachers' learning. This implies a need for more schooling resources as well as support by parents. Professional learning can be supported. Given that some of the teachers work in under resourced and geographically rural contexts where they have 'to make do', this has a bearing on laying solid foundations for many children's later learning within the wider context.

In relation to the theoretical frameworks used in this study (deep and surface learning and types of learning), while these theories have been used in isolation to investigate university students' learning processes, this combination proved effective in studying teacher professional learning. What I found is that deep and surface learning strategies alone cannot adequately help understand teacher professional learning. I needed a theoretical way to understand, describe, and analyse data to establish the actual types of learning within the deep and surface realms. However, this thesis suggests a need for more comprehensive research into FP teacher professional learning outside the formal programmes drawing on this combined framework and developing it further to determine its applicability beyond the context of this particular inquiry.

DEDICATION

I dedicate this study to late parents, Nelson Pasurai and Grace Pasurai (nee Muvunde), who taught me to persevere, my late siblings: brothers Mike and Munashe; and sisters Mercy, Zadziso and Mugove, I know you all would have been very proud. I will remember you always.

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ACRONYMS AND ABBREVIATIONS

ACE	Advanced Certificate in Education
ACT	Advanced Certificate in Teaching
ACT FP	Advanced Certificate in Education Foundation Phase
ANA	Annual National Assessments
CAPS	Curriculum Assessment Policy Statement
CBD	Central Business District
CPTD	Continuing Professional Teacher Development
CRA	Concrete, Representational and Abstract
CWP	Community Works Programme
DBE	Department of Basic Education
DoE	Department of Education
DHET	Department of Higher Education and Training
DUT	Durban University of Technology
EC	Ethical Clearance
ECD	Early Childhood Development
EDE	Early Childhood Education
EFAL	English First Additional Language
EFL	English Foreign Language
ESL	English Second Language
FET	Further Education and Training
FP	Foundation Phase
GET	General Education and Training
GPS	Global Positioning System
HOD	Head of Department
HSRC	Human Sciences Research Council
IECD	Integrated Early Childhood Development

IQMS	Integrated Quality Management System
KZN	KwaZulu-Natal
LiEP	Language in Education Policy
LOLT	Language of Learning and Teaching
LPG	Learning Programme Guidelines
MDGs	Millennium Development Goals
MoE	Ministry of Education
NCLB	No Child Left Behind
NCS	National Curriculum Statement
NGOs	Non-governmental Organisations
NPDE	National Professional Diploma in Education
OBE	Outcomes Based Education
ODL	Open Distance Learning
PCK	Pedagogical Content Knowledge
PE	Physical Education
PGCE	Post-Graduate Certificate in Education
PK	Pedagogical Knowledge
PMB	Pietermaritzburg
PSC	Professional Standards Council
PUPTs	Professionally Unqualified Practising Teachers
QCA	Qualification and Curriculum Authority
RME	Realistic Mathematics Education
RNCS	Revised National Curriculum Statement
SACE	South African Council for Educators
SAFCERT	South African Certification Council
SAG	Subject Assessment Guidelines
SA-SAMS	South African Schools and Administration Management System

SBA	Subject Based Assessment
SDGs	Sustainable Development Goals
SLAS	Subject and Learning Area Statements
TEIs	Teacher Education Institutions
UKZN	University of KwaZulu-Natal
UNESCO	United Nations Educational, Scientific and Cultural Organization
UK	United Kingdom
USA	United States of America

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CHAPTER ONE
INTRODUCTION TO THE STUDY

Introduction

Professional learning has generally been conceptualized as a product of both externally provided and job-embedded, in-school activities which promote teacher knowledge and change teachers' instructional practice in ways that foster student learning (Wei, Darling-Hammond and Adamson 2010). Thus, professional learning may happen through formal, informal, and non-formal activities either within or outside of the school setting. The process may thus take place in a range of places and spaces, non-formally or informally, not only as a consequence of formal professional development activities (Bertram 2014).

While professional development is generally viewed as involving defined activities, time frames, contexts, objectives, and structures, and offered as once-off activities, professional learning may involve both defined and non-defined (informal learning) activities, and contexts, is on-going and processual, often without boundaries or limits (Prestridge 2019). Mukeredzi (2009) states that informal professional learning often sits at the verge of formal and non-formal learning as teachers make use of such opportunities to share information. Foundation Phase (FP) teacher professional learning in the context of this study was viewed as taking three dimensions: non-formal – which may be planned, organized, and structured either internally or externally to the school but without contributing to qualifications; experiential – from classroom practice; and informal – the incidental professional learning which teachers would develop from, for example, collegial interactions (Mukeredzi 2009).

Professional learning has triggered much debate internationally on how teachers learn and develop professional knowledge and skills, to stimulate their thinking and to ensure that their practice is critically informed and remains up to date (Dalby 2021). Teacher engagement in structured professional learning has been shown to foster their 'knowing-in-practice' (Bertram 2011) in order to improve their classroom pedagogies, which may lead to positive student outcomes. Research from various countries shows that on-going professional learning that is classroom-embedded, promotes effective teacher growth which consequently leads to the improvement of teaching quality and substantial gains in student achievement (Bruce *et al.* 2010). In other words, on-going teacher professional learning has been seen to have positive

effects, these being: enhancement of teaching quality; enhancement of student learning; and enhancement of education quality as a whole.

However, the absence of professional learning, Okeke and Mtyuda (2017) argue, has profound negative impacts on students' achievement, teacher well-being and professional growth which gives rise to disengagement and the erosion of teaching quality and student learning. Again, in the absence of teacher professional learning, immeasurable negative impacts on teaching quality and teacher morale emerge (Dalby 2021). It is therefore critical that teachers engage in on-going professional learning as it provides rich opportunities for development and enhancement of their professional knowledge and practice, in order to progress the quality of learning and teaching, and overall school improvement.

Education – especially basic (primary and lower secondary) – contributes to poverty reduction by increasing the productivity of the poor, and improving health, and by equipping people with the skills they need to participate fully in the economy and in society (United Nations Educational Scientific and Cultural Organization [UNESCO] 2015; World Bank 2017). Basic learning needs, in this context, encompass essential learning tools (literacy, oral expression, numeracy, problem solving) and learning content (knowledge, skills, values, attitudes). These are critical for survival and for the development of full capacities for dignified life and work, full participation in development to enhance quality of life, to make informed decisions and engage in life-long learning (Taylor and Mulhall 2001). The UNESCO (2015) report, further laments that the children's rights to high quality education continue to be compromised by untrained, poorly trained, or well-trained teachers who shun on-going professional learning and development.

On-going teacher professional learning outside formal programmes has often been hailed for addressing teacher needs. Nasimiyu (2017) laments that university courses in education are narrow in scope, conservative in nature and provide only theoretical background on the teaching profession without stressing the pedagogical implications. As such, these do not prepare future teachers adequately to meet the needs of the classroom. Mukeredzi and Samuel (2020) also argue that initial teacher preparation programmes do not address the specifics of the classroom/school realities within which teachers work. Further, not only does this aspect of life-long learning in professional learning and practice imply a direct link between teachers as learners, teachers in practice, and teachers in student learning. The inherent situated-ness promotes development of teacher professional learning communities and any challenges met

are viewed as new learning opportunities that are collectively addressed and ploughed back into classroom practice (Mukeredzi 2015).

For the FP teachers, on-going teacher professional learning is most critical given their level of operation, as it is during children's early learning years that a strong foundation for their later learning is built (Fleisch 2008; Mashiya 2014; Verbeek 2014). Foundation Phase, which is also known by the umbrella term Early Childhood Development (ECD) refers to that period in a child's learning and development from birth to approximately nine years, when they grow and thrive on many levels: physically; mentally; emotionally; spiritually; morally; and socially (South Africa, Department of Education [DoE] 2001b). As such, teachers working with learners within this age group need on-going professional learning to capitalize on this crucial child developmental stage.

The ECD South African White Paper 5 (DoE 2001b: 8) states that "by the age of 2½ years, a child's brain has achieved 50% of the [its] adult weight, and by the age of 5 [years], the child's brain has grown to 90% of its adult weight." One could surmise that the increasing weight of a child's brain may be directly linked to its function. For this reason, Kunniah-Ruttu (2020) purports that the FP is critical for laying strong foundation for children's future development and learning. During this period, children are particularly ready for learning (Ormrod 2005; Govender and Hugo 2018; Mashiya 2014). Thus, such opportunities for learning readiness must not be wasted as one of the goals of education is understood, not, as to fill the child with facts from pre-selected course studies, but rather to nurture their own natural desire to learn through the application of various approaches, activities, content, and resources (Montessori 1966). Such skills to make the child understand, to encourage the development of their imagination, and stimulate them to their innermost core, often emanate from professional learning by teachers.

The sample of teachers investigated in this enquiry, were qualified FP teachers practising in selected rural, urban and township schools in the KwaZulu-Natal (KZN) Province of South Africa. Investigating them enabled an exploration of issues that intersected with the bigger debates on on-going teacher professional learning and development. Given that the phenomenon of teacher professional learning has become an international concern, it therefore became imperative to focus local efforts in this direction. While these teachers were not fully representative of all FP teachers due to philosophical orientations and assumptions, and the small sample size, they exemplify teachers working in rural, urban and township contexts.

Findings may thus shed light on issues that are pertinent to the wider context. This study therefore sought to explore professional learning experiences of FP teachers and how the learning influenced their classroom practice.

In this chapter, I begin by discussing the background of the study which covers the policy context and offers a synopsis of the history of teacher education in South Africa. This is followed by the focus and purpose of the study. I then outline my personal context and motivation for this study, which is followed by the rationale behind this work. Thereafter follows the statement of the problem and research questions. Overviews of theoretical frameworks and methodological approaches are then provided, followed by the definition of terms. The chapter summary and the overall organisation of the thesis are then outlined.

Background of the study

This section discusses the policy context of the study and offers a synopsis of the history of teacher education in South Africa.

Policy context of the study

To promote teacher professional learning, the regulatory framework for teacher education programmes was established in 1995, published for discussion in 1998 and gazetted as the Norms and Standards for Educators in 2000 (DoE 2005). The policy outlined the values, knowledge and skills that were viewed as hallmarks of a professional and knowledgeable educator. It drew heavily on the input of the Ministerial Committee on Teacher Education (2005) (Human Sciences Research Council [HSRC] 2005) and provided an overall strategy for effective teacher professional learning and development, teacher retention and student recruitment, to meet social and economic needs. This policy, which catered for all teachers from FP level to Further Education and Training (FET) level, intended to build a community of committed, competent and highly efficient, ethical, and professional teachers critical to the provision of quality education (Mukeredzi 2009). The seven roles for educators as outlined in the Norms and Standards policy called on the teacher to be:

- The specialist in a phase, subject discipline, or practice
- The learning mediator
- An interpreter and designer of learning programmes and materials
- Leader, administrator, and manager

- A scholar, researcher, and life-long learner
- An assessor
- Engaged in community, citizenship, and pastoral roles (South Africa, Department of Higher Education and Training [DHET] 2010: 51-52).

The policy was also intended to provide teacher educators with a guide regarding what to include when designing teacher education programmes. However, Parker (2001) argues that the relationship between policy processes for teacher education, what happens in teacher education programmes and in the classroom (student learning) was not established. Given this argument, understanding whether the FP teachers experience professional learning through performance of such roles needed to be established.

The South African Council for Educators (SACE), as the statutory body for professional educators, implemented a Continuing Professional Teacher Development (CPTD) system (DoE 2006). Through the system all educators (from FP to FET) would earn professional learning and development points by engaging in activities that addressed their own professional learning needs from the endorsed SACE list. Teachers would choose from: "school driven programmes; employer driven programmes; qualification driven programmes; and programmes offered by Non-Governmental Organizations (NGOs), teacher unions, community-based and faith-based organisations or private companies" (DoE 2006: 18). The disciplinary measure that "teachers who did not achieve a minimum number of professional development points over two successive cycles of three years would be accountable to SACE for such failure" (DoE 2007: 20) however, does not reveal evidence of the effectiveness of the system and the consequences of poor performance (Steyn 2017). Hence, this study sought to understand whether, what and how the FP teachers professional learning experiences took place as a result of some of these initiatives.

Further promoting on-going teacher professional learning, the South African Department of Basic Education (South Africa, Department of Education [DBE]) introduced the Integrated Quality Management System (IQMS) in 2003. This formal performance management instrument was part of the unified quality improvement plan which consisted of three programmes:

- Developmental Appraisal: A clear assessment of teachers to determine strengths and weaknesses and to support them with development programmes.

- ❖ Performance measurement: The focus is on assessment of teachers regarding salary progression, grade progression, confirmation of appointments and rewards and incentives.
- ❖ Whole School Evaluation (WSE): This refers to the assessment of the effectiveness of the school as a whole, including the quality of teaching and learning (Education Labour Relations Council [ELRC] 2003).

The IQMS was meant to monitor teacher professional learning and the quality of teaching and learning in all schools in South Africa from FP to FET. One of the objectives of the IQMS was to regulate educators' competence and evaluate their strengths and professional learning and development needs (DoE 2002b). The ELRC (2003: 1) training document states that "the IQMS intends to identify the professional learning needs of teachers and schools to support them and enhance their development and continuous growth". However, Mahlaela (2011: 2) asserts that "most schools' management and teachers believe that the purpose of the IQMS was to determine salary progression and exercise control. They also viewed IQMS as an instrument used by the DBE which had no benefit to schools' internal management." With all these arguments, whether FP teachers gained professional learning through such instruments needed to be recorded and understood.

Another initiative that was launched in South Africa in 2009 and in KZN in 2012 as an intervention to promote teacher professional learning and improve learner performance was subject clusters (Magnaye-Laylo 2020). A cluster is a group of schools within the same geographical location that regularly converge, to promote their own and others' professional learning through sharing ideas, resources, pedagogies, and problems which ultimately may improve education quality and relevance in their respective institutions (Mukeredzi 2016). Thus, all curriculum subjects belonged to their different subject clusters which met regularly to learn from and with each other. Jita and Mokhele (2014) point out that there is no evidence on the effectiveness of this model of teacher professional learning. Against this background, this study sought to understand whether FP teachers experienced professional learning in these wider professional sites.

History of teacher education in South Africa: A synopsis

Much has been recorded about apartheid education in South Africa. Coetzee (2010: 1) states that from "1948–1994 the Department of National Education under the National Party

government created four separate departments of education for each of the designated race groups". These were the Department of Education and Culture in the House of Representatives for coloured schools; the Department for Education and Training for black schools; the Department of Education and Culture in the House of delegates for Indian schools; and the Department of Education and Culture in the House of Assembly for white schools (South Africa.info 2006). The segregation of departments according to race promoted inequality across the South African education landscape. Deacon, Osman and Buchler (2010) assert that South Africa is a country with a legacy of divided social orders based on gender, race, class, and location, which are major challenges and a contributing factor to social inequalities.

With regard to teacher education, teachers were trained in racially and ethnically segregated universities and colleges (Islam 2012). Teacher education for 'whites' was situated in post-matriculation colleges and universities (Cross and Chisholm 1990). Post-matriculation institutions were those institutions attended by students who had passed their matric examinations known as the National Senior Certificate. The entrance requirements in these 'whites only' institutions were high, and the programme duration was four years for a teachers' diploma and three years for a degree (Chisholm 2019). The duration was longer for a teachers' diploma because it involved a practical element which the degree did not.

The South African black students disliked Bantu Education as the majority of them considered it inferior to the alternative offered to their white counterparts, and a symbol of their position in the wider society, further depriving them of more opportunities (Ilorah 2006). However, Chisholm (2019) explains that the aim of the Bantu Teacher Education was to prepare teachers for the rapidly increasing number of primary schools. The responsibility of educating black Africans lay under the Department of Bantu Education and later the homeland governments assumed control of teacher training colleges within their areas, which were basically extensions of the schooling system (Parker 2003; Chisholm 2020) or glorified high schools (HSRC 2005). Huge variations in the provinces and homelands were evident and many shortcomings emerged in this teacher education system, including:

- Numerous varied curricula and qualifications
- The absence of nationally coordinated teacher supply and demand
- Ineffective quality assurance and accountability procedures
- Varied per capita costs and serious distortions in supply

- An abnormally large pool of unemployed primary school teachers (50 000) and a serious shortage of secondary school Science teachers (Parker 2003: 20).

Prior to 1963, each province had different courses/curricula and teachers' qualifications or certificates. There were differences in the nature and structure of curricula and qualifications as each college pursued its own provincial curricula and qualifications (Chisholm 2020; Mukeredzi 2009; Parker 2003). In other words, due to these differences, teacher training in segregated provincial homeland colleges did not allow teachers to teach in other provinces, as the then-prime minister of South Africa, Hendrik Verwoerd clarified, Indian and coloured people were expected to serve their communities in a natural way (HSRC 2005). In other words, Indian teachers were required to teach Indian children and so forth, as it was then (mistakenly) thought that mixing across race groups was unnatural, hence 'separate development'. Apart from segregation, teacher education portrayed a complex system that was unequal and inefficient, fragmented and expensive, characterized by glaring cost discrepancies across institutions (Chisholm 2020; Maistry 2005).

Chisholm (2019) explains that in the 1940s, South African teacher training colleges generally offered diverse programmes:

- Teachers' Lower Certificate and Senior Certificates with entry qualification requirement of Standard X;
- Two-year primary school teachers' lower course after Standard VIII;
- Two-year primary school teachers' course after Standard X; and
- Higher primary school teachers' course specialization for teachers with either one or two of the other certificates above.

The two-year primary school teacher lower course was restricted to women. However, there is apparently no evidence on how teachers engaged in professional learning activities outside these formal training programmes. According to Mukeredzi (2009), in the 1940s, rationalization, reorganization, and redeployment processes in teacher training colleges became even more critical. In addition to rationalization and establishment of provincial government departments (Chisholm 2020; Maistry 2005; Parker 2003), radical structural transformation was instituted which shifted teacher education from provincial governance to national competence in 1996 to rationalize and regularize curricula and qualifications which resulted in a severe decline in enrolments in colleges and university faculties of education (Chisholm 2020;

Mukeredzi 2009; 2016; Ogunniyi and Mushayikwa 2015). These were pointers to the need for the incorporation of these colleges as sub-divisions of the then existing universities as opposed to autonomous colleges (Parker 2003). Thus, the post-1994 democratic government decided to institute incorporation of teacher education colleges into the then existing Higher Education Institutions (HEIs) (Parker 2003) and decided on the closure of all teacher training colleges (Chisholm 2019). However, in the midst of all these changes, it is not clear whether teachers were encouraged to engage in on-going teacher professional learning.

Concomitant to this, Baxen and Botha (2016) indicate that the shift of initial teacher education from colleges to universities compromised FP teacher training and support since many universities had little or no experience or expertise in Early Childhood Education (ECE), and therefore opted not to offer FP programmes. From Baxen and Botha's argument, these gaps and discrepancies suggest ineffective FP teacher provisioning and training in universities. From the 23 universities offering teacher education in 2009, only 13 offered FP teacher education programmes (Green *et al.* 2011). Given this situation, Green *et al.* (2011: 119) remarked that if FP challenges are not addressed, this "… will have a domino effect on learning and achievement at all levels of the system" as the foundations for all later learning are laid in this phase, hence its name. With this apparent neglect of the sector, it was vital to establish whether the FP teachers who graduated from universities, had experienced professional learning outside the formal teacher training programmes.

Focus and purpose of the study

This thesis addresses the professional learning of FP teachers outside formal programmes in rural, township and urban schools in selected districts of KZN Province, South Africa. It investigates how FP teachers professionally learn through their work within restricted sites (within their schools) and wider professional sites (outside their schools). The FP teachers in this study are those teachers who teach from Grade R – Grade 3. In South Africa, school learning is divided into four phases: the FP level (Grade R – Grade 3), Intermediate Phase (Grade 4 – Grade 6), Senior Phase (Grade 7 – Grade 9) and FET Phase (Grade 10 – Grade 12). As can be noted, the Intermediate Phase, Senior Phase and FET Phase build upon the foundation laid, and the learning achieved in the FP. Therefore, against this background, the study focused on FP teachers (Grade R – Grade 3 teachers) because this is where the solid learning foundation for later learning should be laid.

While urban schools are often well-resourced, rural and township schools are generally acutely under-resourced which prompts the teachers to "make-do" (Mukeredzi 2009). Teachers are thus, forced to operate with whatever resources are available within their environment to enable them to deliver effective lessons. Given this situation, the study wanted to establish whether teachers in such contexts experienced professional learning and if so, how they did so. Thereafter the plan was to create comparisons between the professional learning experiences of these teachers in rural or township settings and of teachers in urban settings. However, Mukeredzi (2013a) then argues that since necessity is the mother of invention, as the teachers in marginalized contexts are constrained by the lack of resources, this contradiction may awaken their ingenuity which then feeds into their professional learning. She further contends that this challenges teachers to think creatively, thereby enabling professional learning to occur in spite of the resource constraints. Thus, it is this professional learning of FP teachers outside the formal programmes that this study intended to understand.

Professional learning outside the formal programmes may be viewed as informal or life-long learning which provides a contrast to formal learning as it is unstructured and takes place without any clear goals or set objectives because it is often unplanned and self-directed by the learner (Eraut 2004). Professional learning outside formal programmes as alluded to above, may take many forms: non-formal, informal and experiential; this study set out to understand all three dimensions of the FP teachers' experiences of professional learning. The purpose of this study was therefore to develop an in-depth understanding of what these FP teachers experience. It sought to get behind their "faces and skins" (Bhengu 2005) to understand, through their eyes and stories (Mukeredzi 2009) their professional learning experiences in rural, urban and township schools. Data generation therefore attempted to extract responses indicating whether, and to what extent, some or all of these dimensions benefited the professional learning of these FP teachers. Having taught in the FP myself, I embarked on this study with some axiological assumptions that are discussed in the following sub-section.

Axiological assumptions

Axiology focuses on what one values in research. Axiological assumptions refer to the unexamined, unrecognized, or mistakenly universalized values that influence a researcher's work: personal or disciplinary assumptions about what is right and wrong, good and bad, more or less valuable, desirable, worthy, and beautiful (Peers 2018).

My perceptions of professional learning for these FP teachers were shaped in two ways – by my experiences as a FP teacher, and also as a former university tutor of the study participants. The particular group of FP teachers investigated were part of a large group of the inaugural students who studied for the Advanced Certificate in Education in Foundation Phase (ACT FP) at the University of KwaZulu-Natal (UKZN) in 2013–2015, two years before I registered for doctoral studies. Apart from teaching these participants, being a member of staff on this programme, as colleagues we would discuss students, programme structure, assessments and timetables that suited both staff and students. I would also chat with these adult learners, and when necessary, counsel them regarding various issues that affected their learning. This role fostered understanding which enhanced my awareness, and compassion for the challenges, experiences and issues encountered by other FP teachers. All this assisted me in working with them in this study.

I thus carried knowledge of both the structure of the programme and the experiences of some of the FP teachers. I should state upfront that in this study I paid particular attention to the FP teacher professional learning experiences in their different school contexts. However, given my previous experiences as a FP teacher and also having worked closely with these teachers on the ACT FP programme, I brought certain biases to this study. Notwithstanding my efforts to maintain an open mind during data production, those biases might have influenced my views and perceptions of the generated data and the manner in which I analysed it. I embarked on this doctoral study with the understanding that these FP teachers encounter complex, and different professional learning experiences. Despite the significance of this expectation, I critically interrogated how these FP teachers engaged in professional learning, the kinds of knowledge that they gained, and how the learning influenced their classroom practice. Against this, I explored the values of my participants and analysed them to determine how professional learning experiences influenced their current teaching practice and also their reflections as teachers. Having declared my axiological assumptions upfront, the next section discusses the rationale for the study, starting with my personal context and motivation.

Personal context and motivation

What teachers do or do not do, is in response to their early learning experiences (Mukeredzi and Mandrona 2013). I grew up in a rural area where, in spite of the challenges associated with rurality, I experienced good teaching and learning throughout my primary and secondary education. Throughout my career, I habitually reflected on my learning experiences and

replayed experiences, trying to understand how my teachers managed to teach effectively in marginalized environments and more so, while many were qualified generally, they did not hold high academic qualifications as it was rare to find a teacher with a teaching degree (Tarusikirwa 2016). Often, the teachers would go away for what were then called 'refresher courses' or to attend various types of meetings within the school. Little did I know that teachers needed to continue professional learning after teacher training. A replay of these experiences stimulated me to try to understand how teachers in general – the FP teachers in particular – experience professional learning outside the formal programmes.

After training as a primary school teacher and teaching at FP level for six years, I moved to KZN where I accepted a teaching post at a high school in Pietermaritzburg's urban area. I also took on a part-time position as a tutor at UKZN to teach on the ACT FP programme for three years. Working with FP teachers and teaching a FP curriculum, re-activated my passion for this phase. Throughout my work with these adult students, I always wondered whether after the ACT FP teacher education programme, these FP teachers would continue professional learning in their school contexts.

The opportunities at UKZN kept me close to FP teaching and learning, which I was passionate about. In addition, at that point my own children were also learning in FP. As such, practising what I was learning through work and following my children's development further stirred in me a desire to want to understand how FP teachers experience professional learning outside formal programmes. Further, my masters research investigated FP teacher professional learning in a formal programme. This thus influenced me to transcend formal programmes to understand how FP teachers in rural, township and urban schools in selected KZN districts experience professional learning outside formal programmes, the kinds of knowledge that they gain and how the learning influences their classroom practice. Having outlined my personal context and motivation for the study, in the next section, I discuss the study's rationale.

Rationale for the study

The rationale for this study is underpinned by three considerations around personal, policy, and academic issues. To begin with, at a personal level, as I highlighted above, my teaching experience, masters research and immediate experience as a university tutor were in the area of FP. Given that new ways and ideas implemented often emanate from research, the study

would satisfy this utilitarian significance and as a result, findings would be of utmost benefit to my practice, responsibilities and professional growth.

Second, with regard to policy as highlighted above, teacher engagement in on-going professional learning keeps them abreast of curriculum, and policy changes, developments in teaching and learning processes, as well as in technology. Blease and Condy (2014) comment that teachers need on-going professional learning and development to enable them to effectively teach and remain up to date with educational changes. Von Esch and Kavanagh (2018) also argue that teachers need to engage in professional learning as they continuously encountering new problems and working through them with colleagues and other teacher educators, through social interaction and discourse, can be helpful.

Arguments by Blease and Condy (2014) and Von Esch and Kavanagh (2018) which foreground the value of on-going professional learning, strengthen the need to understand whether FP teachers professionally learn outside formal programmes within the restricted and the wider professional sites. Horn and Little (2010) add that when teachers engage in on-going professional learning, they continue to develop their teaching knowledge by connecting frameworks for teaching to specific contexts and instances of instructional practice. This study was premised on the notion that not much is known about the FP in general, and the professional learning experiences of their teachers specifically (Kimathi 2017). It became vital to learn about professional learning from them – their experiences, what they learn and how the learning impacts their work. These experiences are significant to policy discussions and decisions on teacher professional learning.

Day and Gu (2007: 428) indicate that, "to sustain teachers' commitment to work throughout their careers means that they must engage in life-long learning". Hence, FP teacher engagement in professional learning outside the formal programmes should be an on-going activity through various avenues within and outside their school contexts, to enhance their growth and commitment to teaching and learning processes. Society seeks good teachers and a well-educated population, more so effective student learning and achievement. Therefore, the measurement of acceptable professional learning is always through the quality of education the students receive (Mukeredzi 2013b). Consequently, by investigating professional learning experiences of FP teachers in rural, urban and township contexts, this case study could make a unique contribution to knowledge of professional learning experiences. Cochran-Smith and Lytle (1999: 250) assert that, "knowledge-in-practice is a life-long learning pursuit conducted

by teachers working together across the span of novice and expert, and working alongside students, other teachers and communities". Thus, whether or not this collaborative and situated learning outside formal programmes occurred for the FP teachers, needed to be established and understood theoretically through a comprehensive study.

The United Nations Educational, Scientific and Cultural Organization (2014) noted that there is minimal non-formal education and learning across the target, i.e. the education system. However, Mukeredzi (2009) highlighted that teachers in rural secondary schools professionally experienced learning through four domains of formality and experience: formal, non-formal, informal and experiential. Given the focus of this study being outside formal programmes, it therefore became vital to investigate the professional learning of FP teachers through three realms: non-formal, informal, and experiential.

Notwithstanding the observations by UNESCO (2014) above, there is evidence that powerful professional learning also exists outside the school. Such learning emanates from collaboration, networks, coalitions, and partnerships which offer teachers professional learning opportunities that are dissimilar in quality and kind to those available inside the school or in traditional professional development programmes (Greany and Higham 2018; Ehren and Godfrey 2017; Lepore, Hall and Tandon 2021). Teacher learning through collaboration is central to their effectiveness. To this end, the need for teachers to collaborate and professionally learn becomes critical. Jones and Dexter (2014) further argued that informal groups develop stronger voices to represent teachers' perspectives and help them learn to exercise leadership among their peers, using their first-hand experience and thus, create new opportunities for their students through collaborative work. Hence, obtaining immediate information through the participants' experiences, what they learn and how that affects their work could enhance the debates on professional learning processes.

Again, with regard to policy, there is limited literature available for policy makers about what practising FP teachers have experienced or are experiencing. The challenges and the pressures that they endure, and the professional learning encounters that they undergo in these schools needed to be investigated and documented. These teachers in such situations are expected to devise effective and imaginative strategies for handling learners and school communities as they try to interpret and deliver laid-down curriculum policies and procedures. Through collegial interaction about teacher learning, either in restricted or wider professional sites, in relation to their teaching and professional learning, the FP teachers can influence policy

development, critique and practice. As this study was located within the wider discourses and concerns about teacher learning as alluded to above, it would inform policy designers, institutions as well as teacher education specialists on issues of the professional learning of FP teachers in South African rural, township and urban schools.

Thirdly, related studies have been done in international, regional, and national contexts, however, none of them focused on FP teachers' professional learning outside the formal programmes. For instance, in an international context Edge, Reynolds and O'Toole (2015) examined self-reported professional learning experiences of junior secondary school teachers within a professional development programme. Valiandes and Neophytou (2018) investigated professional learning of fourth grade teachers, while Wang, Ramdeo and McLaughlin (2021) explored professional development experiences of Chinese Grade 1 to 9 teachers in a learning programme. In addition, Goos, Bennison and Proffitt-White (2018) investigated teacher professional learning on large-scale project in Australia.

Regionally, Mtetwa *et al.* (2019) investigated professional learning opportunities accessible to Mathematics teachers in Zimbabwe and Macharia (2020) in Kenya explored the professional learning of chemistry secondary school teacher trainers from a professional learning and development programme. In South Africa, Mukeredzi, Bertram and Christiansen (2018) investigated FP teacher learning from a university programme, while Kimathi and Bertram (2019) examined how FP teachers changed their practice during a formal programme. Further, Christiansen, Bertram and Mukeredzi (2018) interrogated the learning tasks in six learning modules in a formal FP teacher programme. Makwara (2015) also studied the 'what' and 'how' of FP teacher professional learning through the construction and use of teaching resources within a formal programme. None of these researchers focused on the FP teacher professional learning outside formal programmes. Hence, the limited research on this phenomenon in South Africa created a gap and might be an indication of the neglect of FP teacher professional learning. By investigating the 'how' and 'what' of urban, township and rural FP teacher professional learning outside formal programmes in selected KZN schools, this research sought to contribute to that gap. The next section discusses the statement of the problem and the research questions.

Statement of the problem and research questions

That FP is a critical period in all children's learning has been documented (see for example DoE 2001a; Fleisch 2008; Govender and Hugo 2018; Green *et al.* 2011; Kunniah-Ruttu 2020; Montessori 1966; Verbeek 2014). However, not much is known about how teachers generally, and FP teachers particularly, professionally learn outside formal programmes in rural, township and urban schools. Limited research on FP teacher professional learning has been reported (Hugo 2010; Kimathi 2017; Makwara 2015). Further, in this study, the literature search did not yield any studies on FP teacher professional learning outside formal programmes in schools in KZN Province. Thus, an in-depth understanding of how FP teachers experience professional learning outside formal programmes, the knowledge that they gain and how the learning influences their teaching was vital to contribute to the gap, if on-going professional learning of teachers for this phase was to be enhanced.

This study focused on one key question: How do FP teachers engage in professional learning outside the formal programmes? This key question was addressed through the following sub-questions:

1. What is the nature of professional learning practices that FP teachers engage in outside formal programmes?
2. What domains of professional knowledge do the teachers gain?
3. In what ways does the professional learning influence their teaching practice?

Overview of the theoretical framework

The study was informed by Biggs' (2003) and Illeris' (2009) theoretical frameworks, discussed in Chapter Three. These were complemented by conceptual frameworks from Shulman (1987), Cogill (2008) and Banks, Leach and Moon (1999). The concepts from the domains of professional knowledge and the learning theories complemented each other in providing a robust framework for guiding data generation and analysis as well as for explaining findings as interpreted through the theoretical and conceptual lenses. The two theoretical frameworks (Biggs 2003; Illeris 2009) were vital for generating and unpacking data and presenting findings that addressed Research Question One regarding the nature of professional learning.

Biggs' (2003) theory consists of deep and surface learning strategies. Biggs points out that says deep learning occurs when one needs learning for the understanding of concepts or tasks at

hand for future retrieval and application. It involves searching for meaning, focusing on the central argument or concepts needed to solve a problem, examining new facts and ideas critically, tying them into existing cognitive structures and making numerous links between ideas. Surface learning occurs with the intention of meeting minimum requirements, without paying much attention to conceptual mastery (Biggs 2003). Surface learning is therefore about rote learning and knowledge reproduction. It involves accepting facts and ideas uncritically, passively and storing them as isolated, unconnected items, focussing on solving a particular problem at that time.

Illeris (2009) views the nature of learning through four types of learning: accommodative, assimilative, cumulative and transformative. According to Illeris (2009: 13), "accommodative learning implies that one breaks down (parts of) an existing scheme and transforms it so that the new situation can be linked in", while assimilative learning occurs by adding to the already existing knowledge. Transformative learning refers to learning that gives rise to changing frames of reference, of mind-set, of meaning perspectives or changing habits of the mind to make them more inclusive, discriminating, reflective, open, and emotionally able to change (Illeris 2009). This type of learning involves personality changes or changes in the organization of self, characterized by the simultaneous restructuring of patterns and schemes in all three learning dimensions: content, environment, and incentives (Mukeredzi, Bertram and Christiansen 2018). Cumulative or mechanical learning type occurs when a scheme or mental pattern is established. It generally occurs in situations which require a learner to learn something without context of meaning or personal significance (Illeris 2009), for instance a random cell phone number. Illeris points out that the learning is characterized by mechanization and is only recalled and applied during situations that are mentally similar to the learning context.

Shulman's (1987) conceptual frameworks were adopted given their focus on the domains of knowledge: content knowledge, pedagogical knowledge (PK), pedagogical content knowledge (PCK), curriculum knowledge, knowledge of learners and their characteristics, knowledge of educational contexts, and knowledge of educational ends, purposes, and values. This was vital for addressing Research Question Two, about the domains of professional knowledge that the FP teachers gained. Thus, Shulman's (1987) framework helped to provide insights into the domains of knowledge that the rural, urban and township FP teachers in this study gained outside the formal programmes. Given that Shulman has only seven realms of professional

knowledge, I needed another framework that addressed Research Question Three about the influence of learning on classroom practice. Thus, I employed concepts offered by Cogill (2008).

Overview of the methodological approach

The study employed a qualitative approach within the interpretive paradigm, and a case study design. Yin (2009) states that case study design is a powerful instrument which provides for in-depth investigation of a phenomenon. The methodology chapter discusses research paradigm, research design, research approach, population, sample and sampling techniques, data generation processes and data analysis including rigour and ethical considerations. Data were generated through focus group discussions, and a three-interview series – one of which was complemented by photo elicitation – from FP teachers in rural, urban and township schools. How rigour and trustworthiness were enhanced through credibility, transferability, auditability, and confirmability were also discussed, followed by the ethical issues considered in carrying out this study.

The major limitation of this study relates to its limited generalizability due to philosophical and methodological orientation including sampling techniques and sample size. However, the thick descriptions of the research sites, and in data presentation and analysis would enable the reader or researcher to decide on applicability and transferability of the findings to similar contexts. Operational definitions of key terms are provided in the next section.

Definition of terms

The purpose of operational definitions of key terms provided in this section is to explain the application of these terms as they were understood and used by the author in the context of this study.

Professional learning is viewed as encompassing formal and informal learning practice throughout one's career from teacher education to retirement (Mockler 2013). With this understanding, in this study, professional learning encompasses three dimensions of learning: non-formal learning which may be planned, organized and or structured either in the school or in wider professional sites; unplanned and informal or incidental learning which may occur instantly; and learning through practice which may be viewed as experiential.

Teacher learning is generally understood as a change in behaviour which is a consequence of experience. Teacher learning is understood as a process by which teachers progress towards expertise (Kelly 2006). Teacher learning in this study was therefore understood as a continuous process where teachers changed their behaviour subsequent to their experiences, in a move towards attaining expertise. It was therefore learning processes that FP teachers engaged in informally, non-formally and through their teaching practice.

Foundation Phase is the first level of learning in the General Education and Training (GET) Band which is Grade R, Grade 1, Grade 2 and Grade 3 (DoE 2003b). In other words, Foundation Phase education, also known as ECE is a broad term generally used to describe any type of education which relates to the teaching of young children either formally or informally up until the age of about eight or nine years.

Overview of the thesis and chapter summary

The lack of teacher professional learning has negative effects on students' achievements, teacher morale and effectiveness, and consequently leads to poor teaching and learning quality (Okeke and Mtyuda 2017; Dalby 2021). Engaging in ongoing professional learning thus provides opportunities for development of professional knowledge, and classroom skills which enhance teaching and learning quality and often help to keep teachers well informed and abreast of knowledge in their discipline. The employment of teachers with limited knowledge has been linked to lower-quality teaching and poor student outcomes (HSRC 2005; Kruijer 2010; Mukeredzi 2013b). Given that the FP is critical for building strong foundations for children's later learning, growth, and development (Kunniah-Ruttu 2020), it is vital that such teachers engage in on-going professional learning throughout their career. Professional learning is understood as occurring in many realms: formal, informal, non-formal and through practice (Bertram 2014; Mukeredzi 2009). In this study, learning was viewed as taking place through three dimensions: informal, non-formal and through practice.

The thesis is organized into seven chapters.

Chapter One presented a background for the study. This was achieved by first outlining the focus and purpose of the study. Personal motivation, axiological assumptions and the rationale behind the study were also defined. The background of the study which covered policy context of the study and provided a synopsis of the history of teacher education in South Africa was presented. This was followed by the statement of the problem and an outline of the key question

and sub-research questions. Following this, were overviews of theoretical frameworks, and methodology. The issues of trustworthiness and ethical considerations were alluded to in the section on the methodology. Chapter One concludes with a description of the structure and organization of the thesis.

Chapter Two discusses literature related to this study from international, regional, and national contexts. This literature was organized conceptually and drawn from research questions addressing the nature of professional learning, kinds of knowledge that the teachers gain outside formal programmes and the how professional learning influences classroom practice.

In **Chapter Three,** the theoretical and conceptual frameworks in which the study is located were presented. The discussion of frameworks covered the historical development, principles, and application in relation to research questions as well as the weaknesses and how they were addressed in the study to minimize their impact on the findings. Further, conceptual frameworks related to domains of knowledge (Shulman 1987; Cogill 2008 and Banks, Leach and Moon 1999) were also highlighted.

Chapter Four presents the research design and methodology. It describes and justifies the interpretive paradigm, case study research design, qualitative approach, and purposive sampling which was employed for selecting participants. The processes of data generation through focus group discussion, three-interview series, complemented by photo elicitation are also described and all choices justified. The chapter then outlines the steps followed in data analysis. Finally, aspects of trustworthiness and ethical considerations as well as the limitations of the study and how they were dealt with, to limit their impact on findings will be discussed.

Chapter Five presents data and analysis addressing Research Question One on the nature of the FP teacher on-going professional learning outside the formal programmes. **Chapter Six** focuses on data presentation and analysis addressing Research Question Two about the domains of knowledge that the FP teachers gained outside the formal programmes. In the second section of the chapter, I present and analyse data addressing Research Question Three on the ways in which professional learning influences classroom practice.

Finally, **Chapter Seven** is the discussion, conclusion, and synthesis of the study where I discuss the findings of the study according to the research questions to illustrate that the questions raised at the start of the research in this chapter, were answered. I also present my reflections on theoretical, conceptual frameworks, and methodology. Following this, I outline

the knowledge contribution of my research and then tie up the chapter by drawing recommendations for teacher professional learning, policy, and research before presenting the chapter conclusion.

The next chapter focuses on relevant literature around teacher professional learning.

CHAPTER TWO
REVIEW OF RELEVANT LITERATURE

Introduction

Through an exploration of 24 Foundation Phase (FP) teachers in rural, township and urban schools, the study sought to understand how FP teachers experience professional learning outside the formal programmes, what they learn and how the learning influences their classroom practice. Generally, teachers engage in various professional learning activities in different settings and their experiences count towards their professional learning. The previous chapter introduced the study and provided the focus, personal context and motivation, rationale, research questions and background of the study. The chapter also provided a summary of the historical background of education in South Africa during and after apartheid, inclusive of teacher education.

This chapter reviews relevant literature on how teachers generally –and FP teachers in particular – professionally learn within their contexts. Most of the empirical studies critically analysed in this chapter were from 2010 to 2021 where the works of some key theorists and empirical studies are discussed. I also consulted a few dated sources from as far back as 1991 because of the pertinent information contained therein. The literature reviewed in this chapter from international, regional and national contexts generally employed one theoretical framework as a lens to understand and explain findings, contrary to my study which used two theories (types of learning by Biggs 2003 and Illeris 2009) complemented by conceptual frameworks (Banks, Leach and Moon 1999; Cogill 2008; Shulman 1987). The theories and conceptual frameworks in my study helped to gain insights into the nature of professional learning experienced and the domains of knowledge that the FP teachers experienced outside the formal programmes and how the learning influenced their practice.

The literature review process was vital for contextualizing my study and to enhance understanding of how similar related concepts are defined and understood by other researchers. The process also exposed me to the experts in the field and how they generally engaged with research principles, methodologies, and processes, which enabled me to place my study in perspective, situating it appropriately. Arshed and Danson (2015) point out that the literature review is an evaluative report of studies found in the literature related to a selected area of research. The purpose of this literature review was to critically evaluate previous studies to

further justify my research, identifying questions related to my study that had been answered and those that were outstanding, to ensure that the study was not just a 'replication study' but would serve a clear purpose by filling gaps in the existing body of knowledge. Consequently, this offered broad understandings of what has been studied, the current state of research (Boote and Beile 2005) on FP teacher learning experiences, the domains of knowledge teachers gain and influences of professional learning on teacher classroom practice.

In this chapter, literature reviewed is organized conceptually, according to concepts driven from the research questions and this literature is discussed and critically analysed to cover different contexts drawing on international, regional, and national debates.

The chapter begins by defining and discussing the concepts around professional learning and its derivatives: profession; professional; and professionalism, and finishes off with professional learning from the international, regional, and national understandings. Second, the chapter discusses literature around the nature of professional learning drawing on international, regional, and national studies. Third, further drawing on studies from the three contexts, the chapter also discusses literature on the kinds of knowledge that teachers gain from professional learning within and outside their school. Fourth, the chapter examines literature on how professional learning influences the teacher classroom practice.

Understanding concepts

What is a profession?

Saks (2012) in the United Kingdom (UK) defined 'profession' as a socially negotiated label based on occupational ideologies, not least in terms of the knowledge and skills involved. In the current study, the participants were labelled as teachers according to stipulations by the South African Council of Educators (SACE) with whom all teachers must be registered in order to teach in South African schools (SACE 2005). Among these stipulations are that teachers are required to hold an appropriate teaching qualification. Hence, the FP teachers who participated in this study belonged to a teaching profession as they were FP specialists who each held a National Professional Diploma in Education (NPDE) qualification and Advanced Certificate in Teaching (ACT).

On the other hand, the Professional Standards Council (PSC) (2015) of Australia views a profession as a disciplined group of individuals who adhere to ethical standards. The definitions

above by Saks and the PSC of Australia emphasise ideology, skills, knowledge, and ethics as elements of a profession. Given that participants in this study were registered as teachers, and were teaching in South Africa, they were obliged to follow the SACE code of conduct as well as the rules within their schools. Thus, drawing on the above international definitions, a profession is a disciplined group of individuals bound together by their occupational ideology, knowledge, and skills, and guided by ethical procedures.

Within the African region, in Nigeria specifically, Yusuf, Afolabi, and Oyetayo (2014) define a profession as an occupation or vocation that requires special skills, knowledge of some department of learning and qualification, especially one with high social status. Yusuf, Afolabi and Oyetayo's definition tallies with the definitions given by two authors above by including occupation, skills, knowledge, and qualification. While Yusuf, Afolabi and Oyetayo agree with the other two authors in terms of occupation, skills and knowledge, they bring up the issue of social status. Knowledge and skills highlighted here are also raised by Saks (2012) in the UK and PSC (2015) of Australia. Foundation Phase teachers in the current study were viewed as belonging to a profession given their possession of knowledge and skills and performing a social role – teaching.

Further, Dada and Fadokun (2010) in Nigeria state that a profession entails an occupation which is dependent upon specialized intellectual study and training for the provision of skilled service to other members of society, government, non-governmental agencies for a definite fee or salary. While Dada and Fadokun agree with Yusuf, Afolabi, and Oyetayo, in terms of occupation, skills, knowledge, departmental affiliation and qualification, Dada and Fadokun further raise the issue of remuneration. The teachers in this study were professionals as they had engaged in tertiary studies and training to obtain a qualification and offer a social service – being able to teach FP children. Within the region, a profession is understood as an occupation for people who have knowledge, skills and a certain qualification obtained through training, and who offer a social service to a societal group for which they receive a fee or a salary.

Nationally, Adendorff *et al.* (2002) defined profession as an occupation that performs a vital social function or service requiring a significant degree of skill and expertise. Adendorff *et al's* definition relates to the authors above in terms of occupational skills and expertise, which relate to training. Hence, teaching is regarded as a profession given that FP teachers performed a crucial social function which required skill and expertise gained through training. From the definitions above, in this study a profession is understood to be comprised of a group of people

belonging to an occupation, performing a social function for which they receive a salary, possessing skills and knowledge from training, and being bound by ethical procedures in their service.

What is a professional?

In the international context, Brown *et al.* (2017) in United States of America (USA) view a professional as a member of a profession. They further state that professionals are ruled by codes of ethics and profess commitment to competence, morality and integrity, altruism, and the promotion of the public good within their expert domain. From this definition, a professional is a member of a profession with competence, integrity, morality, altruism and one who promotes public good. The teachers who participated in the current study were guided by the SACE code of conduct and had to adhere to the rules, policies, and regulations as stipulated by this national professional body.

Further, for one to be an effective member of a professional body, individuals need to share information. This is in line with Vivanco and Delgado-Bolton (2015) who state that excellence is related to interprofessional collaboration, which is a strength that every professional should cultivate, especially in multidisciplinary environments. Given that this study focused on teachers in rural, urban, and township schools, it is important to note that educational knowledge needed to be shared and gained through engaging in collaborative professional learning activities outside the formal programmes.

In Canada, Balthazard (2015: 2) in support of the above views, conceives a professional as one who puts "doing good work' and the 'quality' of the work ahead of economic gain (salary) and the economic efficiency of work; it is not about the money; it is about the quality and integrity of the work." Thus, according to Balthazard a professional is an individual committed to their work quality and integrity, they maintain a high standard of performance and efficiency as well as other attributes of a professional which leads to professionalism. The Canadian and USA definitions highlight competence, altruism, morality, integrity, commitment, efficiency, and high-quality work.

Regionally, Fareo (2015) view professional as a well-qualified person with good professional competence and aim for effectiveness. In Nigerian context the government make provision for the professional growth of the teachers through periodic in-service education. Therefore, in this

study, professional is viewed in such that requires a teacher to continue to professionally learn to in order to improve knowledge in FP level throughout their lifetime.

Nationally, literature surveyed by De Wet (2016) shows that professional work involves a highly complex sets of skills, intellectual functioning and knowledge that is not easily acquired and not widely held. Teachers' work is generally viewed as complex in nature (Bertram 2014), demanding intellect and knowledge that is acquired through rigorous training. In this study, the term 'professional' relates to members of a profession who demonstrate confidence, expert knowledge, and skills during instructional practice, who are governed by codes of ethics, who profess commitment to their work, have competence and efficiency, maintain morality and integrity, altruism, and work in collaboration with one another.

What is professionalism?

In Spain, Vivanco and Delgado-Bolton (2015: 5) defined professionalism as "a status that is reached, maintained, and improved through the continuous effort and perseverance of those who practice the human principles and values that make it up." Thus, according to this definition the FP teachers in the current study may be regarded as striving towards professionalism through possession of appropriate attributes and values, engaging and adopting acceptable principles in their practice throughout their professional lives. Vivanco and Delgado-Bolton further state that technical expertise, ethics and skills, and communications are all vital components of professionalism. The definition by Vivanco and Delgado-Bolton includes seven key elements: status that is maintained, continuous effort, perseverance, principles, ethics and skills, communication, and values. Hence, the FP teachers may display professionalism through their teaching expertise, ethical behaviour and good communication skills.

Regionally, Case and Lowery (1973, cited in Nkhoma 2010: 73) state that professionalism refers to "the conduct of qualified people who share responsibilities for rendering a service; for engaging in continued study; and for maintaining high standards of achievement and practice within the principles, structure and content of a body of knowledge." Vivanco and Delgado-Bolton and Case and Lowery concur on ethics, maintaining high standards, continued study, communication, expertise, principles, knowledge, and skills as certain aspects of professionalism. However, Case and Lowery extended their definition by adding structure and possession of content knowledge. Given that the participants in this study were all qualified FP

teachers who were rendering a service (teaching) to society and maintaining acceptable standards of practice within the stipulated principles and policies, one could say they were trying to meet the status of professionalism.

In South Africa, professionalism is a pedagogical project centred on the internal quality of teaching as a profession, with its relative control in making autonomous decisions over teaching practice (SACE 2005). Nationally, Julie, Bimray and Jooste (2019) also defined professionalism as the conduct, qualities, vision, mission, values, and goals that characterise a profession, which describes behaviours that are expected within the profession's members. The South African definition highlights quality, values, and conduct which is consistent with international and regional definitions but extends professionalism to include vision, mission, and goals. In the context of this study, professionalism could be seen as a powerful tool which guides teachers in fulfilling their roles to the best of their ability.

Literature reviewed by de Klerk (2014: 76) further defined professionalism as "moral attributes that teachers strive to attain, based on excellence, teamwork, collaboration, professional development, and trust." It is probable that the moral attributes about professionalism which de Klerk (2014) stated are often acquired through engaging in professional learning. Further, Adendorff *et al.* (2002: 54) state that "Professionalism demands of the teacher as the person responsible for organizing and maintaining an effective, safe environment for learners and learning, as a 'knowledge worker', and as someone likely to have a considerable influence on learners' values." The definitions above by de Klerk (2014) and Adendorff *et al*. (2002) highlight moral attributes, excellence, trust, and being a knowledge worker as some of the qualities of professionalism. However, De Klerk also includes teamwork and collaboration as other vital attributes.

For the purposes of this study, professionalism encompasses ethical and moral behaviour, honesty, empathy, accountability, commitment, devotion and conscientiousness, a desire for life-long learning and enquiry, relational dimensions, interdependence, agency and resourcefulness.

What is professional learning?

In the international context, Villegas-Reimers (2003: 11) defined professional development as "a development of a person in his or her professional roles." The author further states that it includes formal experiences (such as attending professional meetings, workshops, and

mentoring) and informal experiences that take place through reading professional publications and watching television documentaries related to an academic discipline. Darling-Hammond, Hyler and Gardner (2017) conceptualise professional learning as a product of both externally provided and job-embedded activities that increase teachers' knowledge and help them improve and change their instructional practice in ways that support student learning. Villegas-Reimers and Darling-Hammond, Hyler and Gardner's definitions have common goals of increasing teachers' knowledge, positively transforming classroom practice and enhancing students' performance through on-the-job-learning. Given this overall overlap in the goals of professional learning and professional development being to enhance classroom practice and students' achievements, in this study, particularly in this chapter, the concepts will be used interchangeably.

On the same note, DuFour *et al.* (2016) view professional learning as a continuous job-embedded learning which enhances teaching and learning processes for learners. From this definition the emphasis is on the job-embedded learning, and enhancement of students' learning. Further, Darling-Hammond, Hyler and Gardner (2017) point out seven features of effective professional learning which have an impact on learner outcomes. For example: First, professional learning is centred on the content that teachers deliver, given that it focuses on teaching strategies which are linked to specific curriculum content to support teacher professional learning within their classroom contexts. Second, professional learning includes active learning, for example, where teachers build meaning by examining their practice and find opportunities for trying out and experimenting with those practices. Third, professional learning not only allows teachers to learn new teaching styles, techniques, and tips but also helps them to implement active learning strategies and collaborative learning methods that encourage social interaction and thus facilitate student learning (Dix and Cawkwell 2011; Sigurðardóttir 2010). While Villegas-Reimers, Darling-Hammond, Hyler and Gardner and DuFour *et al.* agree in terms of job-embedded teacher learning, and student outcomes, Dix and Cawkwell (2011) and Sigurðardóttir (2010) highlight the dimension of implementing strategies, collaboration, and social interaction.

Regionally, Sithole (2020) indicates that professional learning, when designed well, is typically interactive, sustained and customized to teacher needs which encourages teachers to take responsibility for their own learning and to practise what they are learning in their own teaching

contexts. Sithole emphasizes interaction which is prolonged/on-going, situated, teachers taking responsibility for their learning and application of what is learnt in their classrooms.

Nationally, Bertram (2014: 91) explains that "…professional learning may take place in a range of different places and spaces, both formal, non-formal and informal, and not only as a result of formal professional development activities." Bertram's definition includes formal, non-formal and informal learning and development activities, while Sithole's definition focuses on teachers' interaction, on-going process, teachers taking responsibility and initiative for their learning needs and implementing the learning in their classrooms. Drawing on the above authors, professional learning in this study is understood as those experiences that are sustained (on-going), job-embedded, that occur through interaction and collaboration, where teachers assume responsibility to improve their knowledge to enhance students' performance and outcomes. Having defined concepts around professional learning and its derivatives, next I critically evaluate literature on the nature of professional learning drawing on international, regional, and national studies.

The nature of professional learning that teachers experience

In the international context, very much academic work (see Ambler 2016; Richit and Tomkelski 2020; Tour 2017; Vail 2011 and Wood and Bennett 2000) has been conducted on the nature of teacher professional learning. Regrettably, not much has focused on the nature of professional learning experienced by FP teachers specifically. The following section reviews literature in the international context, excluding Africa.

Richit and Tomkelski (2020) explored the professional learning of Mathematic teachers in Japan who were involved in lesson study. The study was located in an interpretive paradigm which utilised a qualitative approach and was based on social learning theory by Bandura (1977). Richit and Tomkelski used participant observation consisting of making researcher field notes produced in the context of lesson study sessions, teachers' textual productions systematized in their logbooks, audio recordings of the lesson and debriefing sessions to collect data. The participants were 17 Mathematics teachers in public secondary schools of Rio Grande do Sul State.

While Richit and Tomkelski's (2020) study differed from the current study in terms of data generation techniques, sample size, and its focus on Mathematics secondary school teachers, it is related due to its research paradigm and approach. The findings highlight that teacher

participation in lesson study provided professional learning through engagement in collaborative work in the school context, and reflection on professional practice, especially classroom practice approaches prevalent in the educative settings. Consistent with this, Zuber-Skerritt (2018) indicates that learning within the school offers teachers an opportunity to experience professional learning with others. Further, Masinga (2012) and Mukeredzi (2015) concur that reflection on experiences is an effective process which offers teachers professional learning. Richit and Tomkelski's study indicated that the teachers experienced professional learning through collaboration and reflection within their school contexts. These findings influenced the current study to establish whether the FP teachers in the sample also experienced professional learning through reflection and collaboration within their schools.

Contrary to Richit and Tomkelski (2020), Wood and Bennett (2000) in the UK explored early childhood teachers' professional learning through their change of theories and practices. Fenstermacher's (1994) theory of professional learning underpinned this study. The UK study was interpretive in nature, employing narrative accounts and semi-structured interviews with 9 Grade R teachers, a mix of both novice and experienced. The results indicated that teachers experienced professional learning through engagement in group meetings to discuss strategies of resolving teaching challenges that they faced in their classrooms. Furthermore, it was revealed that professional learning was also experienced through collaborative reflection which shaped their practice in the classrooms. Engaging in collaborative professional learning activities gave teachers an opportunity to professionally learn through participation in in-depth reflection in a supportive context, with knowledgeable others who were able to offer different perspectives.

On the contrary, de Jong, Meirink and Admiraal (2019) argue that deeper level conversations in group meetings are not always accessible to teachers, nor do they meet teachers' professional learning needs. While these authors suggest that limited professional learning takes place through group engagements, Wood and Bennett (2000) illustrate that teachers can experience effective professional learning through such opportunities within restricted (school) sites as they can compare, self-check their thoughts and learn from collegial experiences. These findings prompted me to determine whether or not the FP teachers in the three schooling contexts of this study – rural, township and urban – also experienced professional learning through collaboration, group meetings, and collaborative reflection.

While Wood and Bennett's (2000) study was conducted in rural and urban areas, the current study added township schools to enhance the comparative aspect. As Wood and Bennett also studied FP teachers, my study was able to draw lessons from and allow for comparisons of the nature of professional learning that FP teachers in the two international contexts experienced. The authors recommended high quality professional learning courses which support the process of change in teachers' thinking and practice at different career points, with a recognition that teaching is a complex, challenging and multi-faceted process. Drawing on this recommendation, my study also tried to establish whether the FP teachers experienced professional learning through courses and workshops.

Further to the studies by Richit and Tomkelski (2020) and Wood and Bennett (2000) in Japan and the UK respectively, Ambler (2016) in Australia explored the opportunities for professional learning in teachers' daily work in classrooms. As in the current study, Ambler investigated 'what and how' behind primary school teachers professional learning. The processes to establish the answers to these questions pointed me to areas which could be examined in my study. Ambler's study was an interpretative one which investigated six teachers in a semi-rural primary school who participated in small group interview and one-on-one interviews.

Grumet's (1990) theory of story as narrative, situation and interpretation was employed in Ambler's study to understand 'what' and 'how' primary school teachers learn in their day-to-day work. This prompted me to investigate how FP teachers experienced professional learning in their classroom practice. The findings from Ambler's study indicated that teachers' day-to-day personal stories were a source of professional learning. Ambler, from small group and one-on-one interviews, also found teachers juggling with words to make sense of their learning experiences; capturing and describing the details of the teaching situation so they could solve some of the problems that inevitably emerge in their practice; and explaining their actions to determine whether they were useful or made sense in the context of their teaching. All these processes promoted their professional learning. Interpreting and critically reflecting on their experiences of teaching through the process of reading, re-reading interview transcripts, and discussing what they encountered also fostered teachers' professional learning and enhanced the understanding and knowledge of their practice, which opened possibilities for setting new directions in their professional learning.

Mukeredzi (2013b) and Smith, Meijer and Kielly-Coleman (2010) concur that it is through critical reflection about and on work-based learning experiences and practice that effective professional learning occurs. Reading, re-reading, and discussion fostered reflection and learning in Ambler's study. Further, Ambler only used two data generation techniques which I also used in my study, albeit I complemented them with photo elicitation. The classroom practice that offered the teachers in Ambler's study professional learning prompted me to establish whether FP teachers in this study also experienced learning through these practices.

In California, the USA, Vail (2011) investigated teacher professional learning experiences and implications for teaching practice. The aim was to understand the process by which teachers change their practices following participation in the professional learning experiences of six Physical Science teachers. This USA study was a qualitative case study which was conducted in rural and sub-urban areas. A model of teacher-change by Guskey (2002) and a model of professional development skills with hypothetical development trajectories by Dall'Alba and Sandberg (2006) were the conceptual frameworks adopted in Vail's (2011) study, which adopted a qualitative case study design. The study used interviews, document reviews and classroom observations for data generation. The results indicated that professional learning is 'driven' by a constant desire to learn. This formed an important grounding for my study, as such comments suggested to me the need to determine whether the FP teachers, in their stories, demonstrated a desire and some openness to learning. The findings of Vail's (2011) study also indicated that teachers experienced professional learning through reflection on daily lessons and worksheets that the individual teachers made for their learners, from student feedback and from engaging with learners through asking them reflexive questions. All these ways and spaces of professional learning from the California-based study provided me with aspects to anticipate in my study.

Kelly (2006) calls the nature of learning implied in Vail's (2011) study a 'constructive process' which involves internalisation of learning experiences through reflection, to contribute to gaining knowledge in practice. Vail's results showed that the teachers also experienced professional learning from collaboration in lesson preparation, student involvement and questioning and discussing student assessments. Further, Vail (2011) found that the Physical Science teachers in the study sample also experienced professional learning through collaboration with colleagues from other schools and from expert Physical Science institutions.

Darling-Hammond, Hyler and Gardner (2017) argue that collaboration can span a host of configurations from one-on-one or small group collaboration to school-wide collaboration to collaboration with other professionals beyond the school, in wide professional sites. This is what was seen to happen among the teachers in Vail's study. Further, Mockler (2013) states that engaging in collaborative professional learning activities allows teachers to continually be refreshed, become life-long learners who share ideas and make meaning of the teaching and learning processes. Vail recommended further research on how teachers professionally learn through practice in their work outside formal programmes, which justifies the current study. Like Vail, my study focused on teachers' experiences of professional learning although I explored FP teachers as opposed to this Californian study which focused on Physical Science teachers.

In another study within the international context, Tour's (2017) Australian research examined how teachers use digital technologies in their personal lives and what professional practices emerge from these experiences. This was a case study of three teachers (Grade 3—4 Chinese language; Grade 7—11 literacy and Grade 7—8 literacy and humanity) which employed participant-generated photography, two open-ended interviews and online observation in the digital spaces of their learning for example, Twitter, blogs, Facebook, and social bookmarking services for data generation. The use of photographs related to my study which also used photo elicitation. The study by Tour was grounded in Carmichael and Jordan's (2012) theory of 'a turn to practice'. The results showed that participants' everyday digital literacy practices provided opportunities for a range of professional learning. The findings also indicated that the teachers experienced professional learning through socialisation as they shared and discussed engagements with the digital technologies, professional concerns and challenges which assisted them to professionally learn to overcome work-related isolation and provided support in various aspects of their work.

Whether FP teachers in my study experienced professional learning from digital technologies had to be established. Tour found that the teachers experienced professional learning through reflection and collaboration as they used blogs to document, analyse and review their teaching practices, and obtain feedback and critique from others. Cooperation also emerged as an important way in which participants in Tour's (2017) study experienced professional learning as they exchanged different resources. Peterson (2012) indicates that when teachers engage in cooperative professional development, they become self-confident in developing their teaching

and learning skills. It also became vital to establish whether FP teachers in the current study developed confidence through professional learning. Tour further noted that the use of the Internet to access and collect professional resources such as digital books, articles, blog posts, videos, podcasts, and lectures found independently or shared by their networks and Twitter, offered participants effective professional learning. It also emerged in Tour's study that the three participants experienced professional learning through designing their own learning strategies and became independent learners.

In the current study, it was vital to determine whether the FP teachers experienced learning through designing teaching aids. Vail (2011) and Sumuer (2018) suggest that self-directed learning develops effective life-long professional learning teachers. Tour's (2017) findings where teachers experienced learning from within and outside the school informed the current study to determine whether FP teachers' professional learning occurred in such spaces and through similar processes. In addition, the use of a qualitative approach and thematic analysis to identify, analyse and report patterns (themes) within data (Braun and Clarke 2006) in Tour's study was relevant to the current study. Tour suggested that teachers engage in more professional learning choices when these meet their professional needs. Concomitantly, my study sought to establish whether FP teacher professional learning influenced their teaching – thus addressing their professional needs.

International literature reviewed above focused on the nature of professional learning that teachers experienced in their schools or wider professional sites. In the five studies above, teachers teaching different primary and secondary school phases were explored. The interview was the popular data generation instrument except in Richit and Tomkelski's (2020) study in Japan. Generally, all the studies reviewed used more than one tool to generate data. Methodologically, the interpretive paradigm, qualitative research approach and case studies were adopted in these studies. Studies generally employed either one theoretical framework or a combination of theory and conceptual frameworks, as in the case of my study.

What also generally emerged in all the international studies evaluated was that professional learning occurred through collaboration, classroom practice and reflection on experiences. Collaborative professional learning occurred in lesson study through activities like joint lesson planning and through group engagements and discussion about their students' work. Collaborative professional learning also occurred through socialisation and sharing personal stories and digital literacy practices. Joint engagement during lesson preparation and

discussions about learners' assessments also offered professional learning. Collaboration thus suggests that teachers experienced professional learning in interaction and reflection.

Further, professional learning also emerged through their day-to-day teacher classroom practice like lesson preparation, reading, student engagement through student questioning and discussing their assessments. Studies further revealed that professional learning occurred through both individual and collaborative reflection on daily lessons and classroom practice as well as reflection on learner performance and assessments. While the studies reviewed above researched teacher professional learning, only one studied FP teacher professional learning outside formal programmes. This UK study investigated early childhood teachers (equivalent to FP teachers); however, the context and focus differed. The next section reviews studies on the nature of professional learning from the regional context.

The regional studies on the nature of professional learning were conducted by Peters (2016); Mumhure (2017); Mukeredzi (2016); Ayodele and Govender (2018) and Rosine (2020). These are discussed below.

Peters (2016) explored the experiences of primary school Mathematics teachers in Namibia who participated in the Realistic Mathematics Education (RME) based professional development programme. The Namibian research employed an ethnographic research approach within a case study which was based on qualitative principles. Peters used 13 workshops and lesson study as research inference tools, with classroom observation and interviews as data generation tools. The study employed data generation over a period of three school terms, involving 15 teachers in sub-urban schools. The theory of realistic Mathematics education by Barnes (2005), was adopted as a theoretical framework.

Peters (2016) discovered that a research lesson was the actual classroom lesson that the teachers planned collaboratively at the workshop but presented individually in the classrooms. Engaging in such professional learning activities collaboratively, provided the participants with opportunities to learn and share experiences they had encountered in previous lessons. Peters' study found that participants experienced professional learning through critical reflection as they shared details of both positive and negative experiences which they encountered in their classrooms with colleagues. Darling-Hammond (2011) argues that workshops offer teachers an opportunity to professionally learn through discussion, sharing with others in a collegial environment, the ideas, and challenges encountered during teaching and learning processes.

This Namibian study revealed that learning occurred during report back sessions at workshops which were found to be very valuable. Peters also found that experiencing professional learning through lesson study research offered participants a chance to demonstrate the skills, knowledge, and strategies they would have obtained from the workshops. Engaging teachers as active learners is beneficial to them because it enables them to practice the same content or instructional strategies that they will use in their classrooms (Darling-Hammond, Hyler and Gardner 2017).

Further, Peters (2016) concluded that engaging in collaborative professional learning activities of Lower and Upper Primary Phase teachers enabled them to share professional experiences, knowledge, anxieties, and joys as colleagues in the same environment. Topolinski (2014) states that teachers who engage in cooperative learning with others, make changes in their classroom practice and knowledges. It also emerged that working together, designing learning activities for both phases, and discussing mathematical concepts to be taught stimulated their professional learning by helping them to feel part of the process. These findings from Peters' study were pointers within the current study where I also had to determine the kinds of activities that FP teachers collaboratively engaged in which offered them professional learning.

Staying in the African region, Mumhure (2017) in Zimbabwe investigated the perspectives and efficacy of history subject panels as an innovation for professional development. Mead's (1863–1931) interactionism theory informed this study, with three main principles, namely meaning, language and thought (Aldiabat and Navenec 2011). Mumhure's study used purposive sampling to select eight high school history teachers, from four rural high schools comprising one growth point (township area) high school and three urban high schools. Mumhure's study related to mine in that it used teachers from rural, urban and growth point areas. The sample size differs. Mumhure adopted a case study research design grounded in the qualitative research approach. Data were generated using semi-structured interviews, focus group discussions, observations, and document analysis. The use of interviews and focus group discussions directed me to some of the issues to be aware of during my own data generation.

The results of this Zimbabwean study showed that teachers engaged in a variety of job-related activities during their history subject panel meetings. These activities included syllabus interpretation, drawing common schemes and tests for their students, the development of essay writing and student assessment skills from which they experienced professional learning. Mumhure discovered that through determination of meeting agendas and the selection of

facilitators for panel meetings and workshops, teachers experienced professional learning. Like Peters (2016), Mumhure's (2017) study also revealed that teachers experienced professional learning in interaction. This is consistent with Mukeredzi (2009) who argues that teachers experience professional development through interaction in multiple domains of formality and experience.

The Zimbabwean study further indicated that involvement of teachers in directing their professional learning activities increased their ownership and commitment to the professional development initiative. Tour (2017) argues that if teachers are given opportunities to determine what they want to learn, it not only increases their ownership and commitment to the programme, but it improves their professional learning – in particular, their instructional practices. Further, the results from Mumhure's study revealed that teachers experienced professional learning through engagement in collaborative activities like setting assessments for district mid-year examinations, development of essay writing skills and presentations at seminars, and learning how to teach 'A' level history. Teacher professional learning through discussions on students learning and assessments confirm earlier findings by Vail (2011). Again, Mumhure's study revealed that history subject panels provided professional learning space for teachers to collaborate and learn with and from each other, sharing experiences, exchanging teaching-learning resources, and engaging in seminars with their students.

On the contrary, Mkhwanazi (2014) found that workshops offered limited professional learning as they did not emphasise teaching and learning skills. Given that Mumhure's study had only eight participants, it was probably easy to control and manage the seminars and panels, hence effective professional learning occurred. This is supported by Kennedy (2011) who argues that optimum effectiveness takes place when participants in professional development sessions are relatively few in number. Mumhure (2017) studied teacher professional learning through non-formal activities which made his research relevant to my study.

In parallel, Mukeredzi (2016) in Zimbabwe investigated how professionally unqualified practising teachers (PUPTs) in rural secondary schools professionally developed outside Teacher Education Institutions (TEIs). The study utilised a qualitative approach and individual face-to-face, three-interview series complemented by photo elicitation to explore six PUPTs' professional development experiences. Content analysis was utilized to analyse data while the current study employed open coding. This Zimbabwean study drew on concepts around teacher professional development by Villegas-Remers (2003). Findings indicated that professional

development experiences for these teachers occurred in four sites: school structures, planned and unplanned gatherings, wider professional sites, and the classroom.

Mukeredzi's findings provided direction within the current study to establish whether the FP teachers experienced professional learning through the spaces, as cited by this researcher. While the Zimbabwean participants were in the final year of their professional teacher programme, FP teachers in this study were qualified professionals. Mukeredzi's study also showed that school structures offered professional development spaces through mentoring and supervision, and whole school staff and subject specialization meetings. In addition, subject cluster and association meetings, and ministry of education (MoE) workshops provided spaces for professional development in wider professional sites. The informal professional development also occurred in interaction through both planned and unplanned meetings; and fourthly, classroom practice provided an important space for experiential professional learning. Collaboration and interaction in lesson preparation, planning, delivery, and assessment emerged as key among the professional development spaces that the PUPTs received through mentoring. The Zimbabwean study again indicated that the PUPT participants professionally benefitted from the above collaborative activities through sharing, learning from, and supporting each other regarding planning, teaching and assessment.

Further, Mkhwanazi (2014) argues that clusters assist teachers to communicate, set tasks and assessments collaboratively outside the schools which enhances their professional learning. Mukeredzi noted that PUPTs experienced professional development through the experiential hands-on processes in classroom practice, and through lesson planning and delivery, using different teaching strategies, and through classroom management, assessment, as well as in self-assessment, self-criticism, reflection, and evaluation. These avenues of professional learning discovered by Mukeredzi were also examined in the current study. de Klerk (2014) and Mukeredzi (2009) concur that teacher professional learning is entrenched in self-enquiry, self-criticism, self-evaluation, and reflection, as such processes develop teachers' capacity to think about what and how learning could have happened, rather than merely thinking about the encounter, or only considering the possibility of doing something about it. These aspects were also relevant to my study.

Ayodele and Govender (2018) investigated the use of the cluster system as effective in-service professional development model to improve classroom instructions of teachers in Nigeria. The study explored 80 Economics teachers, and six Economics Heads of Department (HODs) in

the Education District I and II, Lagos State, Nigeria. Data were generated through focus group discussions and individual interviews. The six HODs were interviewed and focus group discussions were held with teachers who participated in cluster meetings. Findings revealed that the cluster model helped the participants to experience professional learning that was appropriate to their subject areas as they collaborated, shared ideas, and were provided with real classroom situations. Jita and Mokhele (2014), in concurrence stated that clusters represent a recent manifestation of effective collaborative forms of teacher professional learning related to the subject or learning phase.

Like Mumhure (2017), Peters (2016) and Mukeredzi (2016), Ayodele and Govender's study showed that engaging in the use of the cluster system offered an opportunity for teachers to professionally learn through socialization and sharing with teachers from other schools and districts, 'rubbing their minds together' and designing instructional materials that fitted their classroom settings. Steyn (2010) purports that professional development for teachers can be met through cluster systems to ensure professional growth in the profession, which empowers the teachers to improve instructional tasks and delivery of the subjects. Further, the findings indicated that teachers experienced professional learning through interaction and networking with one another and with the HODs. Ayodele and Govender's study also discovered that the teachers experienced professional learning from observing the HODs' demonstration lessons during the cluster meetings. Cvencek, Meltzoff and Kapur (2014) point out that imitation or copying another's behaviour through demonstration is one of the most effective ways to learn new information as it focuses on breaking apart skills into components, providing the observer with a model of the target behaviour, and allowing them to demonstrate the response immediately after the model.

In another regional study, Rosine (2020) investigated the perceptions of teachers and instructional supervisors on professional development programmes offered for English and Mathematics teachers in lower primary schools in Rwanda. Adult learning theory by Knowles (1980) informed this study. The study purposively selected twenty participants: 16 teachers and four instructional supervisors from four public schools in the Ngoma District of Rwanda. Individual interviews, document reviews and media analyses were used as instruments for data generation. The study adopted the qualitative approach within an interpretive paradigm. Rosine's study followed the six phases of the thematic analysis drawing on Braun and Clarke (2006), while my study employed an eight-step open coding data analysis process. The Rwanda

study focused on a professional development programme of English and Mathematics teachers in lower primary public schools while my study involved FP teachers in urban, rural and township schools.

Rosine's (2020) findings indicated that the teachers in the programme experienced professional learning through reading materials written in English and peer learning at their schools, through sharing their teaching experiences, which allowed them to learn from each other and to find solutions to the challenges they faced in their classrooms. Zuber-Skerritt (2018) states that learning that takes place within a programme helps people to continually discover how they can generate effective ideas that transform their practices. Rosine listed the languages spoken in Rwanda as four, including Kinyarwanda, which is the first language spoken by all people of Rwanda. The remaining three, which are the official languages, are English, Swahili and French, Rosine found that participating in professional development through reading materials written in English was a challenge because the resources which teachers used were in English, and their vocabularies were limited. This finding informed my desire to establish whether and how the FP teachers studied experienced professional learning through reading materials. The use of the interpretive paradigm, qualitative approach and purposive sampling resemble the current study, with the difference being the sample size. Another dissimilarity is that Rosine selected English and Mathematics teachers as well as instructional supervisors.

From the above critical analysis of regional studies, which were conducted with student-teachers in universities and teachers in secondary and primary schools, all were grounded in the qualitative research approach and interviews were generally the data generation instrument of choice. The regional studies mostly used one theoretical framework. Just as in the reported international studies, findings indicated that professional learning emerged from interaction, collaboration, and reflection. Interaction emerged as the major avenue for professional learning in all the studies reviewed, where professional learning generally occurred through collegial collaborative learning. As was seen in the international studies, regional research evaluated showed that teachers also experienced professional learning through lesson study where they collaboratively planned, designed, presented lessons, and reflected on them collaboratively thereby engaging in professional learning. While the targeted sample in these studies included primary school teachers, none of the studies explored FP teacher professional learning outside the formal programmes.

In the national arena, studies on the nature of professional learning were conducted by Kimathi (2017); Gravett *et al.* (2017); Isabirye and Makoe (2018) and Schreuder (2014). These are discussed below.

Kimathi (2017) in South Africa studied the professional learning of FP teachers in an Advanced Certificate in Teaching (ACT) programme. Data were generated from multiple sources: interviews, field notes, classroom observations and document analysis. Reed's (2009) conceptual framework and complexity theory (Opfer and Pedder 2011) were used to analyse data and explain findings. This was a case study which employed a qualitative approach within an interpretivist paradigm, with an element of a longitudinal approach. The study involved three FP teachers who were purposively selected from a larger group (173) of teachers who were enrolled in the ACT programme at a university in KZN Province. Kimathi found that the FP teachers experienced professional learning through collaboration with colleagues within their schools. Further, the results showed that the participants professionally learnt from observing each other's classes and from team teaching, discussing new ideas, analysing their practices and their performance.

Mukeredzi (2017) points out that like any form of collaborative scholarship, successful team or collaborative teaching integrates the strengths of multiple viewpoints in a synthetic endeavour that no single member of the team could have completed independently. It also provides an expanded number of teaching styles that may connect with more student learning preferences and styles. This also allows both learners and teachers to benefit from the healthy exchange of ideas in a setting defined by mutual respect and a shared interest in a topic (Mukeredzi 2017). Whether teachers in the current study also experienced professional learning through these avenues needed to be established.

Kimathi's (2017) study also revealed that the participants professionally learnt through reading module materials from the formal programme, magazines, newspapers, and story books in English and IsiZulu during their own spare time. Yates (2017) states that it is vital for teachers to take part in professional learning activities during their own time in order to develop professionally. Results showed that participants in rural schools experienced professional learning from engaging in workshop activities which involved creating teaching resources from available material and cardboards. Bušljeta (2013) purports that teachers are encouraged to be creative, innovative and improvise by creating some of their teaching resources from locally

available materials which will offer them professional learning instead of relying on purchased objects. Kimathi's study had a small sample of three FP teachers in a formal programme, contrary to my study which investigated the professional learning of 24 participants.

Gravett *et al*.'s (2017) qualitative enquiry studied affordances of case-based teaching for the professional learning of student teachers. The study investigated 700 first-year teacher-students, divided into two groups of 350 students each who were enrolled in a four-year undergraduate teacher education programme at an urban university in Johannesburg, South Africa. Purposive and convenience sampling were employed to select student-teachers. Individual interviews, video footage of classroom interaction, student-teachers' reflective essays, examination scripts, and student-teachers' discussions on the use of blackboards as well as focus group interviews were the data generation tools for this study. The theory of 'engaged learning' by Parsons, Hinson, and Sardo-Brown (2001) and Bril and Par (2008) guided this study.

The results revealed that participating in professional learning activities such as analysing video footage and discussing cases in small groups offered student-teachers' opportunities for understanding the complexity of the teaching profession that was not learnt from university modules. Mounira (2013) and Nasimiyu (2017) concur that university courses are narrow in scope, traditional in nature and provide only theoretical background on the teaching profession without stressing the development of classroom teaching and learning skills, therefore not preparing future teachers adequately. The research showed that the participants experienced professional learning from engaging in small-group interactions based on the video footage captured during lessons which helped them to share their views. Engaging in collaborative and inquiry-based discussions offer professional learning and improve and change teachers' methods of instruction (Akyeampong 2017). While Gravett *et al*. studied student teacher professional learning during a formal programme, the FP teachers in the current study were studies to determine their professional learning outside formal programmes.

While Kimathi (2017) and Gravett *et al.* (2017) studied participants in formal university programmes, Isabirye and Makoe (2018) investigated the lived experiences of academics who participated in the professional development programme in an Open Distance Learning (ODL) university in South Africa. Face-to-face interviews were conducted with six academics. The study was guided by Giorgi's (2009) phenomenological psychological approach. Online training spaces provided participants with opportunities to participate in practical professional

development sessions. The findings showed that engaging in initial professional development activities exposed participants to a variety of professional skills and teaching approaches, including the construction of self-evaluation assessments. Isabirye and Makoe found that the participants experienced practical professional development, through activities such as developing and recording audio podcasts, editing online teaching material, and uploading the audio podcasts using 'Audacity' software and the 'myUnisa' podcast server.

Isabirye and Makoe's study indicated that the participants experienced professional learning from being exposed to authentic online learning, which allowed them to work together actively and collaboratively with peers. Whether the FP teachers in this study were involved in professional learning through online collaboration with other teachers had to be established. Schreuder (2014) emphasised that participating in collaborative activities with colleagues form an important part of individual professional learning and development. Further, the professional development programme in Isabirye and Makoe's (2018) study was presented over two weeks, and the results revealed that the shorter duration of the training intervention acted as an obstacle to the participants' professional learning. Ramazhamba, Mashiane and Dlamini (2018) state that teachers need to be properly trained and retrained through a variety of seminars and workshops on certain aspects of informative assessments to ensure a high quality of work. Whether the FP teachers experienced similar professional learning programmes and the nature of such non-formal learning outside the formal programmes had to be established in the current study.

Still in South Africa, Schreuder (2014) examined the nature and effect of professional learning programmes in which accounting teachers engaged. The theoretical basis for this study is derived from Piaget's social interaction (Kalpana 2014) and Vygotsky's social constructivism (Richardson 2003). A mixed methods approach, within an interpretive paradigm, was used in this study. The study used a phenomenological approach to explore the nature and effects of professional development from four subject advisers and 46 accounting teachers. Seemingly, Schreuder's study was relevant to the current study as they both sought to explore the nature and influence of professional learning, although other differences existed.

Multi-stage sampling was used to select teachers for questionnaires while purposive sampling was employed to select teachers for interviews. Teachers in rural and urban schools completed questionnaires that collected both quantitative and qualitative data. Findings indicated that from subject advisors' workshops, teachers experienced professional learning through collegial

support and pairing up to work with a more experienced colleague. Schreuder's study showed that the teachers experienced professional learning through activities during Curriculum Assessment Policy Statement (CAPS) training sessions, content training on Grade 12 topics, iCount workshops, and Telematics training organised and facilitated by various providers. From Schreuder's (2014) study, it became vital to understand whether participants in my study were also exposed to such avenues of professional learning.

Ajani (2020) argues that there is a need for teachers to be kept abreast of dynamic learning experiences in their fields of specialization, acquiring needed knowledge and skills that can improve their learners' experience. Teachers experienced professional learning from model lessons staged by advisors, on which they were allowed to reflect and gain valuable professional learning. Schreuder also found that the subject meetings at schools offered teachers professional learning through planning tests and examinations together, and once examinations were written, they discussed and analysed learner performance in these assessment tasks. Further, the teachers also experienced professional learning from group activity interactions, and through meetings with colleagues. This finding from Ajani's study influenced the current research to investigate whether the FP teachers experienced professional learning through such in-school activities.

Mokhele and Jita (2012: 581) state that "professional development should occur while teachers are involved in their work; at their schools." This idea of professional development as part of the day-to-day work of a teacher is supported by Guskey (2000: 38) who pronounced that "professional development is not an event that is separate from a teacher's day-to-day teaching duties; instead, it is an on-going activity woven into the fabric of every teacher's professional life." It was, therefore, crucial to investigate how FP teachers experienced professional learning within these restricted sites through day-to-day work.

The national studies on the nature of professional learning which were reviewed, were generally conducted in universities and schools, and used theoretical frameworks. The studies were mainly qualitative, situated within an interpretive paradigm. Purposive sampling was dominant, a few employed convenience and multi-stage sampling. Like the international and regional studies, the interview was the common data generation tool. Again, akin to the international and regional studies, professional learning was generally experienced through interaction and collaboration, in workshops, clusters, meetings as well as through day-to-day teacher roles. Most research settings were urban with only a few rural contexts which justifies

the inclusion of the rural segment in the current study. From all the studies evaluated it has become evident that none of them investigated FP teacher professional learning outside the formal programmes. The next section critically reviews studies on domains of professional knowledge that the teachers gain through professional learning.

The kinds of knowledge teachers gain through professional learning

This section draws on studies from international, regional, and national literature on the kinds of professional knowledge that teachers gain through professional learning. In the international context, Karen (2019); Tang *et al.* (2017); Zein (2017) and Louws *et al.* (2017) investigated the kinds and forms of knowledge teachers gain from professional learning which are discussed below.

In Canada, Karen (2019) researched professional learning of three primary teachers who engaged in three cycles of collaborative action research over a three-year period from 2013 to 2016 to establish what knowledge they had gained. Cultural-historical activity theory (CHAT) (Engeström 2001) was adopted for this study. This was a qualitative case study of three teachers in an urban K–5 school who volunteered to participate. Classroom observations, interviews, portraits, and multimedia artefacts generated data. Karen's study found that the teachers gained pedagogical content knowledge (PCK), the content specific methods. The findings further indicated that the teachers developed an understanding of how to use technological tools such as iPads which helped them to choose suitable activities for the various teaching resources such as pictures, and charts with diagrams to teach about an animal life cycle.

Mukeredzi and Manwa (2019) indicate that PCK is the special amalgam of content and pedagogy that teachers need to be able to teach effectively. In this case, they need mastery of such knowledge to be able to use the teaching resources. Shulman (1987) views PCK as the knowledge of specific methods of teaching a particular subject (topic) which eases students' learning by using clear explanations, relevant correlations, modifying and breaking down the learning material and presenting it in interesting, motivating and entertaining ways. All this is intended to make subject matter comprehensible for learners. Kelly (2006, cited in Maboya 2014) argues that teachers need to understand why, when, and how to use teaching aids effectively in the classrooms and observe the impact of allowing learning through exploration with concrete manipulatives. The teachers in Karen's (2019) study also gained pedagogical knowledge (PK) related to scaffolding when creating inquiry-based learning environments

while preparing learners to engage in inquiry-based learning activities. Mukeredzi (2020) confirms that PK is about teaching strategies and classroom control, management and organization that go beyond the knowledge of subject matter but include teacher pedagogical dispositions which enable them to communicate and clarify learner learning, activities and expected achievements. In other words, this is about knowledge of principles of how to teach or present subject matter in the classroom. Stronge (2018) and van Driel, Slot and Bakker (2018) concur that scaffolding, and remediation are crucial when teachers understand learners' particular learning challenges, and so scaffold their learning to move them to the zone of proximal development. Karen found that the teachers professionally gained knowledge of how to build learners' knowledge by creating opportunities to investigate, explore and follow-on questions, through investigative learning.

Tang *et al.* (2017) reported a mixed methods study on the contribution of various kinds of knowledge gained by pre-service student teachers enrolled in Initial Teacher Education (ITE) in their professional learning competence module in a five-year Bachelor of Education Programme in Hong Kong. The domains of teacher knowledge by Shulman (1987) and Grossman (1990) provided a conceptual lens for examining professional knowledge gained in ITE. A total of 282 student teachers participated in the quantitative survey, 18 of whom were interviewed. A mixed methods explanatory sequential approach was adopted. Tang *et al's* study found that the student teachers gained PCK, PK related to working with others, learned how to solve problems, to communicate effectively and efficiently, as well as gained knowledge related to teacher-learner interaction and how to teach learners with different life experiences.

Tang *et al.* further found that participants also gained knowledge of the context related to students and their communities (for example, children whose parents worked in cities and left them with family members in the village). Tang *et al's* findings offered pointers to explore the kinds of knowledge that the FP teachers gained through professional learning outside the formal programmes. These types of knowledge in Tang *et al's* study were gained through engaging in hands-on experiences, professional dialogue with practitioners, and observations of peers' activities and engagements. Mukeredzi and Manwa (2019) also found that student-teachers gain PK and PCK during teaching practise, which is enhanced through classroom practice, given that PCK is the knowledge of how to teach content within a particular subject specialisation. Bertram (2011) states that teachers professionally gain knowledge of PCK

through experience and mostly develop and practise it in the school environment. This Hong Kong study was relevant to my study as it investigated domains of knowledge although participants were in a formal programme, whereas my study participants were outside formal programmes.

In Indonesia, Zein (2017) investigated the kinds of knowledge that primary English Foreign Language (EFL) teachers gained through professional development. This was a qualitative study which used individual semi-structured interviews, focus group interviews and observations of 30 participants (20 schoolteachers and 10 university educators). These participants were purposively selected. This study was guided by the principles of grounded theory (Birks and Mills 2011). Data were analysed using the computer-assisted qualitative data analysis software package, NVivo 9. Zein found that the teachers gained PK related to how to design teaching material and organize activities in the coursebooks, according to needs of their learners. The findings also revealed that the teachers gained PK about how to incorporate two language skills into their lessons such as reading and writing or speaking and listening. Teachers need knowledge of how to develop learners' language skills as academic performance at all levels of schooling requires a strong competence in reading and writing which emanates from more practice in speaking and listening (Kimathi 2017).

Zein's study showed that the teachers also professionally gained curriculum knowledge related to breaking down the syllabus into contextually appropriate lesson plans. Whether the FP teachers in this study also gained curriculum knowledge from such professional learning in wide professional sites outside the formal programmes needed to be established. Nohiya (2015) found that teachers gained curriculum knowledge through course discussions during cluster meetings. The author further states that teachers gained clarity on issues that were unclear in an improved and more effective way to understand and implement the curriculum from interacting with members of their cluster. On the contrary, Tambyah (2017) and Darling-Hammond and Bransford (2012) indicate that teachers face challenges as they attempt to translate and interpret the curriculum knowledge and skills that are stated in the syllabus into teaching and learning activities. The findings also indicated that teachers gained knowledge of learners related to their characteristics, traits, and how children learn, which helped participants to identify each student's specific needs. From this finding, I needed to establish whether FP teachers in this study also gained similar professional knowledge.

This finding is consistent with those of Mukeredzi and Manwa (2019) who noted that among preservice teachers on practicum, they explored gained knowledge of learners and their characteristics through interacting with them both inside and outside the classrooms. Knowledge of learners generally comprises two elements: empirical and cognitive. Cognitive knowledge is what learners of a given age range are like, their school/classroom behaviours, social characteristics and backgrounds, and how these aspects impact their classroom behaviour, including teacher-pupil relationships (Mukeredzi and Nyachowe 2018). Cognitive knowledge is about child development theories which inform educator practice, and context-related knowledge regarding what students know, can or cannot do, and what they are likely to master and understand (Mukeredzi and Nyachowe 2018). Zein's findings offered pointers in the current study which sought to determine whether FP teachers in this study also gained knowledge of learners from professional learning.

Zein also found that the teachers acquired PK related to communication (with colleagues) and knowledge of context related to home and school. Contextual knowledge enables teachers to use their personal understanding of the community, of learners, the school, colleagues, and this knowledge enables them to channel and adopt suitable teaching strategies and activities (Selmer, Bernstein and Bolyard 2016). In other words, knowledge of the context enables the teacher to adapt teaching approaches, materials and resources to suit the particular context to enhance learner understanding. According to Grossman (1990), this is knowledge of specific students and school settings which teachers need to understand and adapt their practice to meet the demands of their roles. Zein's study recommended that the educational policymakers need to develop a framework of reference for the design of professional learning programmes that address primary EFL teachers' needs. Hence, the need to understand the kinds of knowledge that FP teachers gained through their professional learning.

Like Zein (2017) in Indonesia, Louws *et al.* (2017) in Australia explored the relationships between teachers' self-articulated professional learning needs in terms of pedagogy and the needs of teachers in terms of content knowledge. The study combined different models of rofessional life phases (Day and Gu 2007; Fessler and Christensen 1992) and used them to interpret data. Sixteen (16) teachers (eight males and eight females) were selected by variation of subject and gender from a secondary school in an urban area and were interviewed. The results showed that the teachers gained PK on how to vary instructional strategies such as using

concrete media (from concrete to representation and then abstract) during the language lessons and how to involve learners during teaching and learning processes.

This is consistent with Makwara (2015) and Boggan, Harper and Whitmire (2010) who concur that teaching should start from concrete, taken through representational and then to abstract (represented by the acronym CRA) as this caters for several levels of learners' knowledge and capability. The findings also indicated that the teachers acquired PK around how students learn and how teachers could be part of learning processes as well as how to create good teacher-learner relationships in the classroom. Cashdollar (2018) states that building positive teacher-learner relationships based on trust and care is important as they create an environment conducive to learning which results in pupils' positive outcomes.

Louws *et al's* study found that the teachers learnt how to organise their classrooms, their workload, and the lesson structure. In addition, the study also revealed that the teachers gained knowledge of school context related to teacher-parent communication, teacher-parent relationships and school rules. Mukeredzi (2009) argues that good school and teacher-parent rapport and support acknowledges parents as role players in their children's education as this relationship is effective in promoting teacher professional learning, classroom practice and good learner discipline. Further, Louws *et al.'s* study also found that teachers gained content knowledge and curriculum knowledge on how to design assessments for specific skills which the students need to master. Content knowledge from Grossman's (1990: 4) point of view "refers to the amount and organisation of knowledge per-se in the mind of the teacher."

Concomitant to this view, Shulman (1987) indicates that content knowledge is a vital domain of teaching as it affects task setting, planning, questioning, explaining, assessments and giving feedback. Thus, from Grossman's and Shulman's stand points, content knowledge provides the backbone for teacher professional activities from lesson planning through to delivery, assessments and providing feedback. In other words, this is the knowledge that teachers should possess, which learners must learn. Similar to Zein (2017), the teachers in Louws *et al's* study also gained PCK, the content-specific instructional knowledge (Harris and Clayton 2018) from engaging in day-to-day classroom practice. Louws *et al's* study also highlighted that regardless of the increasing levels of teaching expertise, curriculum and instruction remain central to teachers' continuous learning.

From the literature reviewed on the kinds of professional knowledge that the teachers gained in the international context, the academic works were conducted on schoolteachers and teacher educators as well as on pre-service teachers in universities. The studies used theoretical and conceptual frameworks and often in combination, which informed my study to also combine theory and concepts to obtain a more nuanced understanding. The studies were qualitative and only one employed a mixed-methods approach. The interview emerged as the common data generation technique with observation also featuring in other studies.

From these international studies evaluated, the kinds of knowledge that emerged as having been gained were PCK, PK, curriculum knowledge, knowledge of learners and knowledge of context. Pedagogical knowledge, the knowledge of 'how to' was the most popular domain that was gained. The teachers gained the knowledge of how to design and make teaching resources and how to use those teaching aids in their lessons. They also gained knowledge of how to scaffold student learning. Further, the studies also revealed that teachers gained professional knowledge of how to organise differentiated learning activities according to needs of learners, as well as how to break down the syllabus into contextually appropriate lessons, and how to incorporate various language skills in their pedagogical practice. However, from these works analysed, none of the academic work investigated FP teacher professional learning outside the formal programmes and the kinds of knowledge that they gained.

The following section discusses regional studies in relation to the kinds of professional knowledge that the teachers gain in their professional learning.

In the regional arena, studies on the kinds of knowledge teachers gain through professional learning were conducted by Kelani and Khourey-Bowers (2012); Kitta (2004) and Perry and Bevins (2019).

Kelani and Khourey-Bowers (2012) explored the effectiveness of a technology education professional development programme and the kinds of knowledge that the teachers gained within the context of the Republic of Benin (West Africa). The study used an inquiry model grounded in constructivist theory. A qualitative naturalistic approach by Guba and Lincoln (1994) was used to investigate teachers' mastery of PCK and the effectiveness of the programme, and to explore the factors affecting the implementation of the professional learning. Fifty-one (51) secondary school Science teachers (50 males and one female)

volunteered to participate in the Benin study. Data were generated from teachers' after-session journals, after-session evaluation sheets, class observations and interviews.

The findings showed that participants gained PK related to making teaching resources from recyclable materials (such as plastic bottles, and carbon from used batteries) and imported materials to make objects such as electrical current detectors, drums, electrolysis apparatus, guitars, and liquid thermometers. This form of learning relates to improvisation which is an important element in teaching as it enables teachers to "learn to do with uncertainty" (Knight *et al*. 2015: 106) or learn to 'make-do' (Mukeredzi 2013a). Further, Mæland and Espeland (2017) view improvisation as an inherent quality of a teacher and a kind of lifelong professional learning process in the school environment. Whether the participants in this study also gained PK around improvisation from professional learning in restricted and wider professional sites, outside the formal programmes, needed to be investigated.

Kelani and Khourey-Bowers' study indicated that the teachers also gained PCK, content knowledge and curriculum knowledge. Rollnick *et al.* (2008) state that PCK enables teachers to understand how to engage in the actual teaching of their subjects by accessing what they know about their subject, the learners they are teaching, the curriculum with which they are working and what they believe counts as good teaching in the context of the situation in which they work. The findings from Kelani and Khourey-Bowers' (2012) study influenced the current study to also examine whether the kinds of knowledge that FP teachers gained from professional learning also included such knowledge. Again, the findings showed that the teachers learnt how to implement the new study programme materials to teach technology education and assist learners to make artifacts which was a requirement of the curriculum. This suggests gaining PK, the 'how to' knowledge. Goos, Bennison and Proffitt-White (2018) state that pedagogical richness is enhanced in a blended learning environment that supports active learning, peer interaction, access to a wide range of resources, and opportunities to apply new knowledge in the classroom. This appears to have been the case with the teachers studied by Kelani and Khourey-Bowers (2012).

In Tanzania, Kitta (2004) explored the kinds of knowledge that Mathematics teachers gained from school-based teacher professional development programmes. The study was guided by Shulman's (1986) conceptual framework on professional knowledge for teaching. A total of 22 O-level (15 male and seven female) Mathematics teachers were purposively selected from four secondary schools – two of which were public and the other two, private schools – to

participate in this study. Data generation instruments were teacher journals, questionnaires which contained 4-point and 5-point Likert-scale questions, a pencil-and-paper probability test, interviews, observation checklists, and guided group discussions. The standard deviations and percentage were computed on quantitative aspects of the data. Data from the questionnaire's open-ended questions, interviews, teachers' journals, and guided group discussions were analysed qualitatively.

The findings from Kitta's study indicated that while engaging in professional learning activities such as team teaching, participants gained PK from the shared expertise and from observing how colleagues clarified probability concepts during the lesson. It also emerged that the participants also gained PCK and content knowledge. Shulman (1987) regarded PCK as an amalgam of content and general pedagogy, which transcends subject matter knowledge. From Kitta's (2004) study it became crucial to investigate whether participants in this study gained these kinds of knowledge from their professional learning outside the formal programmes. Kitta's findings revealed that the school-based professional learning seminars enabled teachers to gain new knowledge on the topic, teaching skills and to develop confidence in teaching different topics. The teachers professionally learnt how to improvise teaching aids like spinners and dice, according to the requirements of their lesson activities. This is consistent with Motitswe (2012) who states that teachers go out of their way to improvise teaching resources so that they deliver content correctly to their learners. It was, therefore, important to explore the kinds of knowledge that the FP teachers gained within the restricted professional sites (schools).

In Ghana, Perry and Bevins (2019) explored the experiences of the Ghanaian teachers as they engaged in professional development programmes to reflect on and improve their knowledge and skills in their roles. The study was guided by Perry and Boylan's (2017) categories of learning needs of professional development. Participants were part of a large-scale Science teacher professional development programme. Thirty (30) Science teachers working in subject-focused (Chemistry, Physics, Biology) education were selected to participate in this Ghanaian study. This was a survey which used interviews focused on a storyline technique to generate data. The findings indicated that participants gained PCK on how to teach Science concepts using practical-led approaches such as doing practical sessions involving colour changes in liquids which were hands-on activities from which they gained confidence in the teaching and learning of chemistry. Perry and Bevins' finding provided pointers for the current study to

establish the kinds of knowledge the FP teachers gained and how these types of knowledge were used in the classroom. Shulman (1986: 9-10) stresses that PCK is about gaining an "understanding of what makes the learning of specific topics easy or difficult; the conceptions and preconceptions that students of different ages and backgrounds bring with them to the learning of those most frequently taught topics and lessons."

This implies that teachers need to understand the diversity and backgrounds of their learners, their understandings including the misunderstandings of the different topics to be taught. Further, Wilson (2008) further states that PCK is the way of building an understanding between teachers and learners and the immediate environment. It was also found that the teachers gained subject matter knowledge, curriculum knowledge and knowledge of context and the challenges therein as they (teachers) were unable to change their classroom practice due to structural and organisational barriers. Rollnick *et al.* (2008) asserts that subject matter knowledge (content knowledge) is amalgamated with other teacher knowledge domains to produce positive learner outcomes in the classroom.

Curriculum knowledge is crucial as teachers need to know what should be taught to learners at a given level and requires comprehension of their learning capabilities, the national and school syllabi, including teachers' teaching documentation and annual plans (Cogill 2008). In other words, this is the teachers' indispensable and vital kit for their teaching which includes knowledge which should be taught, to a particular group of students at a particular level/phase of study which includes syllabi, schedules, local and or contextual requirements. Grossman (1990) mentions that teachers must have a full understanding of the contexts in which they work to adapt the more general knowledge to the individual learner context and specific school settings. In other words, teachers should be familiar with their school community so that they can adjust teaching and learning processes to suit their particular learners and particular class and school circumstances. Whether the kinds of knowledge that emerged in the Ghanaian study would also emerge from the current FP teacher study had to be determined.

Regional studies analysed above on the kinds of knowledge that the teachers gained investigated secondary school teachers and often used theoretical and conceptual frameworks in combination. Most were qualitative and as such interviews emerged as ae popular data generation instrument. This was similar to my study, albeit I complemented this with focus group discussions and photo elicitation. Most of the studies had both female and male participants while my study sample comprised only female teachers.

The kinds of knowledge that emerged as having been gained from professional learning included PK, PCK, content knowledge, curriculum knowledge and knowledge of context. Pedagogical content knowledge was the most popular kind of knowledge gained in all literature evaluated. Improvisation, development of confidence and how to make and use teaching resources were also evident as the learning gained from the regional studies. From all the studies reviewed thus far, none of them focused on the kinds of knowledge gained by FP teachers through professional learning outside the formal programmes.

The following section analyses national studies on the kinds of professional knowledge that the teachers gain through professional learning. On the national forum, studies on the kinds of knowledge teachers gained through professional learning were conducted by Nohiya (2015) and Mbowane, de Villiers and Braun (2017).

Nohiya (2015) explored the nature of participation of English First Additional Language (EFAL) teachers in clusters, what they learnt and the extent to which they thought their participation contributed to their professional development. This was a qualitative study located within the interpretive paradigm. This study drew from Grossman's (1990) domains of teacher knowledge. Fourteen (14) teachers in rural, urban and township schools from two cluster groups along with one subject advisor were purposively selected to participate in this study. This was a case study which employed focus group interviews, semi-structured individual interviews, observations, and document analysis for data generation.

The findings indicated that the teachers gained PK on how to moderate learners' written work, PK related to oral moderation, assessment and lesson planning. They also gained content knowledge. This finding from Nohiya's study influenced the current study to determine whether the FP teachers gained similar kinds of knowledge from engaging in professional learning through clusters. Jita and Mokhele (2014) assert that clusters help teachers to interact and share knowledge around curriculum, assessments, lesson planning, lesson presentation, their subject area or phase, PCK and content knowledge. Further, Nohiya found that teachers in better resourced schools acquired PCK and knowledge of context.

Grossman (1990) states that the context in which teachers work is an important part of their work, and therefore it is vital for teachers to have a clear understanding and knowledge of their setting as it affects their teaching. It was also found that the teachers gained knowledge of learners, particularly those who were affected by marginalisation and social factors. In addition,

managing difficult learners developed their PK. Kumar (2018) states that teachers need to understand how to manage learners who belong to marginalized, deprived and socio-economically disadvantaged groupings of the society in which they are working. This implies that teachers need to be aware of learners' socio-economic status and be able to deal with their behaviour in the classroom setting. Mehta (2016) explains that children described as difficult are rude, disrespectful and they lack self-discipline. In such circumstances, the teacher has to adopt appropriate classroom management approaches to instil learner discipline. However, Sullivan, Cleary and Sullivan (2003) argue that there is a relationship between how teachers treat their students, and how that is expressed through their classroom management behaviours.

Nohiya also found that the participants gained curriculum knowledge related to National Curriculum Statement (NCS) documents and CAPS, the requirements for each grade, the expected time allocation for English First Additional Language tasks and other subjects. Mukeredzi and Manwa (2019: 36) stress that "curriculum knowledge are [form] the teacher's 'tools of the teaching trade' which constitute among others, knowledge of teaching materials or resources for use in the classroom." It includes knowledge of what should be taught to particular groups of learners which draws on the teachers' understanding of children's learning potential, their syllabi and assessment requirements, preparation documents and schedules, inclusive of local and or contextual requirements (Mukeredzi and Manwa 2019). From these findings, I wanted to explore whether FP teachers in this study also gained similar types of knowledge. However, Shulman (1987) indicates that curriculum knowledge transcends an awareness of the different programmes and materials but includes knowledge of the effectiveness and implications of said programmes and materials for given contexts. Nohiya's findings prompted me to investigate whether FP teachers also gained knowledge related to these aspects of curriculum knowledge.

Mbowane, de Villiers and Braun (2017) examined the perceptions of the Physical Science teachers who participated in the South African 'Eskom Expo for Young Scientists', regarding the kinds of knowledge they gained and the extent to which expo participation provided an opportunity for professional development. The study adopted the qualitative approach within an interpretive paradigm. Purposive and convenience sampling were employed to select 10 Physical Science teachers in urban schools. The conceptual framework of professional identity of teachers and their roles by Beijaard, Meijer and Verloop (2004) guided this study. Face-to-

face individual interviews were used to generate data in Mbowane, de Villiers and Braun (2017) study.

The findings indicated that the teachers gained PCK and content knowledge from their participation in the expo. Pedagogical content knowledge is viewed as a combination of general pedagogical knowledge and specific subject matter (content) knowledge (Cogill 2008). In other words, it transcends subject matter knowledge and is uniquely the province of subject specialists. It specifically relates to how to teach specific content to the learners. As alluded to earlier, content knowledge is the subject matter knowledge that teachers should have of the subject that they should teach, which learners must learn (Shulman 1987). A teacher's lack of content knowledge hampers student learning as this affects choice of teaching materials and methods, learner activities, learner textbooks and other resources as 'you can't teach what you don't know' (Mukeredzi 2013b). Hence, it is crucial for teachers to understand the subject they teach for them to be effective and efficient in the classroom. Concomitantly, Mukeredzi and Sibanda (2016) found that the Physical Science teachers that they studied did not believe that they had adequate content knowledge; hence, they expected to learn it through professional learning programmes.

Mbowane, de Villiers and Braun (2017) found that the teachers gained PK on how to discover new ideas and learner's misconceptions, how learners think as well as how to assess learners' practical work. Pujiawati (2019) and Kavlu (2016) concur that when teachers carefully monitor and assess learners' work, they can accurately evaluate their students' progress, ability, and knowledge, and provide scaffolding on the learning. In this case, teachers need to master such knowledge to be able to assess their learners' work. Further, it also emerged that the teachers gained PK on how to use the best Expo projects and resources to demonstrate and how to teach certain topics in their classes. Hattie (2012) posits that demonstration through teaching aids provides learners with experiences of real events and stimulates their interest and motivation levels. This is given that demonstration is an effective teaching strategy where learners learn through observation of concrete episodes which is often followed by learner practise (imitation) of the demonstrated activity.

From the critical analysis of national studies on the kinds of knowledge that the teachers gained which have been discussed above, the academic work was conducted among secondary school teachers and guided by conceptual frameworks. The studies employed qualitative approaches within the interpretive paradigm. As in regional studies, interviewing was the most popular

data generation tool. From these studies PCK, PK, content knowledge, curriculum knowledge, knowledge of context and knowledge of learners and their characteristics emerged as the kinds of knowledge that the teachers studied gained from their professional learning. PK, PCK and content knowledge emerged as the most popular kinds of knowledge that the teachers in the studies gained. The next section focuses on the ways in which professional learning influences classroom practice.

The influence of teacher professional learning on classroom practice

This section reviews international, regional, and national literature on the ways in which teacher professional learning influences classroom practice. From the international context, Özdemir (2020); Topolinski (2014) and Supovitz and Turner (2000) explored the effect of teacher professional learning on classroom practice.

Özdemir (2020) in Turkey focused on how the school leaders' content knowledge and evaluation practices influence teachers' professional learning activities and classroom instruction. This was a large-scale study of 425 teachers who worked in 46 elementary and lower secondary public schools within two provinces in Turkey. A questionnaire was used to generate data. The multilevel structural equation modelling (MSEM) version 8 by Muthén and Muthén (2010) was used to analyse data. This study, where teachers' professional learning activities included experimentation and reflective practices, found that keeping work up to date improved and stimulated their classroom instructional practices. From Özdemir's findings, it was therefore crucial to establish whether the FP teacher professional learning included such activities and how learning through such activities influenced their classroom practice.

The study showed that principals' evaluation feedback increased experimentation and reflective practice among the teachers and consequently learning. de Klerk (2014) states that professional reflection enhances teachers' practice, promotes teacher professional learning by developing ways of channelling their teaching and learning processes. Cohen-Sayag and Fischl (2012) state that reflection in teacher education is viewed as a tool that influences teacher professional learning; it is perceived as a mediator between existing and new knowledge. This is given that reflection prompts teachers to think about better ways of performance in subsequent activities, answering such questions as 'what should I have done differently?' It is about "breaking habitual ways of thinking, enhancing the development of meta-cognition, increasing awareness of tacit knowledge, facilitating self-exploration, and working out

solutions to the problem" (Nkambule and Mukeredzi 2017: 3). In other words, when teachers engage in professional learning through reflection, they are trying to answer questions pertaining to their own teaching such as; What went well or went wrong? What can be done in future to avoid the same mistakes or to uphold the good performance? Özdemir's study relates to the current research which also tried to understand how professional learning influenced FP teachers' classroom practice.

Topolinski (2014) in Michigan (USA) explored the influence of teacher leadership and professional learning on teachers' knowledge and change of instructional practices in low performing schools. This was a quantitative study which adopted a survey research approach with 740 participants of K–12 (elementary, middle school and high school) teachers where Likert scale questions were employed. The study was grounded within the distributed leadership theory by Boleman and Deal (2008). The author employed the Statistical Package for the Social Sciences (SPSS) software and the analysis of variance (ANOVA) for data analysis.

The findings indicated that in-school professional learning which occurred more frequently than formal professional learning where teachers worked closely with other colleagues, enabled them to make changes in their knowledge and classroom instruction. Scholars argue that engaging in professional learning activities collaboratively with other colleagues influences teachers' knowledge and expertise (Topolinski 2014; Peterson 2012). Topolinski's study revealed that engaging in conversations with colleagues at grade level or in department meetings influenced teachers to reflect on their work; like how new learning can be applied in the classrooms. Mukeredzi (2014) posits that reflection assists teachers to resolve their teaching uncertainties and encourage independent professional learning from thinking about classroom experiences, teaching and learning processes. Therefore, it was vital to establish the extent to which my participants' professional learning through collaboration influenced their classroom practice.

Supovitz and Turner (2000) in the USA investigated the effects of teacher professional learning on science teaching practices and classroom culture. This was a large-scale quantitative study of 3 464 Science teachers and 666 principals in secondary schools. A model of the theoretical relationship between professional development and student achievement by Allen and Lederman (1998) guided this study which was carried out in rural, urban, and suburban areas, which included small towns.

The findings indicated that professional development in which teachers participate influenced both inquiry-based teaching practice and investigative classroom culture. Supovitz and Turner's study found that professional development made teachers understand the school socio-economic status which influenced them more to change their classroom practice than principal supportiveness or the availability of resources. Consistent with Furner and McCulla (2019), specific school contexts have a substantial and differential influence on teacher professional learning across all career stages which eventually improves their instructional practices. Furthermore, individual teacher professional development related to lesson preparation and planning was also found to have a powerful influence on the participants' teaching practice and classroom culture. This is given that, as Mukeredzi (2013b: 97) asserts, planning allows for thorough preparation and increases teacher efficiency and confidence through "self-interrogating, stepping back, 'pre-playing' and pre-evaluating classroom practice, and teachers develop new knowledge and beliefs on content, pedagogy and student learning." Thus, these professional learning processes around preparation and planning influence teachers' instructional processes and general classroom practice.

Supovitz and Turner's (2000) study also found that professional development influenced teacher engagement with their learners as they began to allow them to work in cooperative learning groups. Ali (2011) asserts that group work encourages deeper learning, interdependence, confidence development and individual accountability. Hence, teachers need to expose learners to various teaching strategies to realise each learner's potential. On the contrary, Le, Janssen and Wubbels (2018) argue that if teachers are unsure about how to monitor learners' group discussions, manage group work and adequately intervene when necessary or model appropriate collaborative behaviour, this will affect the quality of group learning, as well as collaborative processes. Therefore, teachers need to understand various ways of handling group work in order to provide each group with an equal opportunity to learn and to avoid gaps in learning.

It was further found that professional development influenced teachers to engage students in hands-on activities. Ho *et al.* (2016) state that hands-on activities encourage students' creativity, critical thinking and problem solving, promote student independence and aid low-ability learners to overcome their initial handicaps. Whether the participants in the current study were also exposed to such professional learning activities that influenced their classroom practice needed to be established.

International studies on the influence of teacher professional learning on classroom practice reviewed above show that they were generally conducted with schoolteachers. The studies were mostly large-scale quantitative surveys. Findings indicated that teacher professional learning increased experimentation and reflective practice among the teachers and strongly influenced and stimulated their knowledge and general classroom instruction. These teachers also experienced teaching practices such as engaging learners in hands-on activities and cooperative learning groups which influenced classroom culture. The next section analyses regional studies on the ways in which professional learning influenced classroom practice.

On the regional platform, studies which are discussed in the next section are by Maende, Luvai and Mbayah (2014) and Mduma and Mkulu (2021). Maende, Luvai and Mbayah (2014) established the level of influence of professional development on the use of resources by teachers in public secondary schools in Kenya. The study adopted a descriptive survey design. A saturated sampling technique was used to select one district quality assurance and standards officer, 30 head teachers and 150 HODs. A simple random sampling technique was used to select 131 teachers while 360 students were selected based on Israel's (n.d) formula of determining sample size. Data were generated using questionnaires and focus group discussions. Quantitative data from closed-ended parts of the questionnaire were analysed using descriptive statistics while qualitative data were analysed thematically.

The study found that professional development influenced teacher choice of teaching materials, including textbooks. This is consistent with Cohen and Hill (2000) who discovered that professional development influenced teacher use of textbooks in their classroom practice. Using of textbooks not only influences teaching and learning in the classroom setting but also guides the teacher on how much content to cover in each session. However, contrarily, Darling-Hammond (2003) argues that using textbooks make little difference if teachers do not know how to use them effectively and that it is through professional development that this can be enhanced. Further, Maende, Luvai and Mbayah (2014) also found that professional development influenced teachers' effective use of the chalkboard. Whether engaging in professional learning activities influenced FP teachers in relation to chalkboard work or use of textbooks needed to be established in the current study.

Kgomo (2013) states that teachers need to model legible and neat handwriting as students copy what their teachers write on the chalkboard. In cases of poor or illegible handwriting on the chalkboard, learners may copy work incorrectly, leading to inaccurate facts being learned,

consequently ruining their learning and understanding (Blease 2014). Good handwriting is generally viewed from three aspects: letter formation (form and slant), size, and spacing. This is probably what teachers in Maende, Luvai and Mbayah's (2014) study had been influenced by. Maende, Luvai and Mbayah's study also found that the professional learning positively influenced teachers to effect change in all their lessons, making them more practical and engaging, which involved the use of resources like laboratory apparatus, other learning materials and charts with maps. Moore (2013) argues that a deep understanding and the ability to learn new concepts or topics requires direct experience with concrete objects. Turning theory-based lessons to practical lessons using concrete resources probably enhanced learner in-depth mastery of concepts.

In Tanzania, Mduma and Mkulu (2021) investigated the influence of teachers' professional development practices on their job performance in Nyamagana District, Mwanza Region. This study adopted the System Theory of organizations which was propounded by Ashby (1964). Convergent parallel design with a mixed methods approach was employed. Stratified random sampling and simple random sampling techniques were used to select public secondary schools and 84 teachers (53 males and 33 females). The quantitative data were analysed with the aid of SPSS while qualitative data were analysed using thematic analysis.

The findings revealed professional learning influenced teacher improvement of their teaching strategies. Danielson (2014) states that different teaching approach must be used to cater for all learning situations, because not all strategies are suitable all learners. Therefore, it is vital for teachers to acquire and understand various teaching strategies to cater for different topics, purposes, and learners. It was also found that professional learning through teacher performance appraisals improved teacher classroom management. Kagema and Irungu (2018) regarded teacher appraisal as an important vehicle for promoting educational quality which is believed to have the potential to facilitate teachers' professional learning and stimulate classroom instructional improvement. Thus, teacher participation in appraisals helps them to identify their weaknesses, strengths, and how to improve the teaching and learning processes. Alter and Haydon (2017) state that teachers need to possess good classroom management skills which help to prevent challenging behaviours before they occur. Mduma and Mkulu's study further found that professional learning improved teachers' communication and discipline at work. Drawing on Meles, Peles and Polese (2010), schools need open systems with flexible boundaries that allow for communication to flow easily as exchanged information greatly

impacts teachers' work and performance. From Mduma and Mkulu's findings, it became crucial to understand whether professional learning also influenced the FP teachers' communication and work discipline in the current study.

The regional studies on the ways in which professional learning influenced classroom practice analysed above, were conducted among teachers, learners, HODs, and head teachers. They were guided by theoretical frameworks and generally adopted mixed method approaches. Like international studies, the interview was the main data generation tool. The findings indicated that professional learning influenced classroom practice in relation to the use of teaching resources, choice of learning activities and learning materials including textbooks, chalkboard work and use of different teaching strategies. It also emerged that professional learning improved teacher classroom management, communication, and work discipline. However, none of the studies critically evaluated or investigated FP teacher professional learning, what they learn and how such learning influences their pedagogical practice.

In the following section, I discuss national studies related to the ways in which professional learning influenced teacher classroom practice.

In the national context, studies evaluated were conducted by Kekana and Gaigher (2018) and Chigonga and Mutodi (2019). Kekana and Gaigher (2018) investigated classroom practice of four Grade 7 Science teachers on an in-service teacher development programme. Clarke and Hollingsworth's (2002) model of professional growth was used as a theoretical framework for this study. A qualitative approach was adopted, within an interpretative paradigm. This study used a multiple-site case study design which employed purposive sampling to select semi-urban schools. Data generation employed interviews, lesson observations and document analysis.

Kekana and Gaigher's study found that professional learning improved teachers' professional growth in a personalised way, such as through increased confidence and improved content knowledge. Further, the study found that professional learning influenced teachers to use different teaching strategies. Kekana and Gaigher's findings offered pointers for the current study, to understand whether professional learning influenced FP teachers around confidence, content knowledge and also related to the use of different teaching strategies. The findings further showed that professional learning influenced teachers to use code-switching, for

example explaining names of colours in a local language to learners who were struggling to learn in English.

Gulzar (2010) states that teachers code-switch to translate or elaborate an important message during the process of explaining new vocabulary, grammar points or instructions, instead of continuing in the additional or foreign language. Hence, the process of code-switching decreases the misconception and makes it easier for learners to focus and understand the classwork. On the contrary, Sakaria and Priyana (2018) argue that regular code-switching by language teachers demotivates learners' interest in listening to the target language and hinders the acquisition of language skills which eventually leads to low proficiency gains in the target language.

The study also found that engaging in professional learning influenced teachers to work collaboratively; sharing information about their subjects as well as general information about their schools. Trust, Krutka and Carpenter (2016) emphasise that when teachers collaborate with colleagues, and individuals who are situated locally, they co-construct knowledge for their practice in various ways and according to their interest, expertise, skills, and classroom needs. Like Maende, Luvai and Mbayah (2014) in Kenya who investigated secondary school teachers, Kekana and Gaigher also found that professional learning influenced teacher improvement in classroom practice for example making their lessons lively and engaging their learners in more practically-oriented learning.

Kekana and Gaigher's study revealed that professional learning influenced teachers to engage learners in hands-on activities for example, allowing them to handle the magnets, to personally experience the forces of repulsion and attraction, a form of "touching and feeling" during practical work to promote learning which was initially not allowed. Mirrahimi *et al.* (2011) state that teachers need to create learning environments which enable all learners to effectively learn science and other skills that integrate the use of the five bodily senses which include touching and seeing. This implies that teachers need to adopt learner-centred interactive strategies where learners learn through seeing and hearing, tasting, touching/ feeling, and smelling.

Chigonga and Mutodi (2019) investigated the extent to which the professional development met its goal of improving Mathematics teaching and learning during the implementation of NCS in South Africa. The professional development design framework by Loucks-Horsley *et*

al. (1998) guided this study which employed a qualitative research approach. Fifty Mathematics teachers from ten public secondary schools were chosen purposively through a criterion-based sampling method (Heppner and Heppner 2004). Data were generated through focus group discussions.

The findings indicated that the way professional development workshops were conducted was disconnected from classroom practice. The study further revealed that the professional development that teachers experienced never impacted their teaching practices, in other words, it did not influence their pedagogical practice. Related findings presented previously (Mukeredzi 2015) from a comparative study of Zimbabwean and South African rural schoolteachers discovered that professional learning through out-of-school workshops and seminars was ineffective as it did not address teacher classroom needs. Thus, drawing on Chigonga and Mutodi's findings I also wanted to establish whether the FP teachers in this study carried similar sentiments about professional development through workshops.

Concomitantly, Ajani (2018) states that professional development activities are considered relevant and suitable if teachers who undergo such activities or training can implement their new knowledge or experience in their teaching in the classroom. Chigonga and Mutodi argued that teacher professional development should not just be thought of as presenter-talk driven workshops but should engage teachers in activities that connect their daily responsibilities such as constructing assessments and planning lessons. Desimone, Smith and Ueno (2006) assert that professional development that does not influence teaching practices in schools should be discontinued. Steyn (2008) and Ajani (2018), however, maintain that workshops remain an effective way of promoting effective teaching as they promote the sharing of knowledge, ideas, skills, and values among teachers, for better and improved instructional tasks delivery in various subject areas. The authors further state that when teachers work together to scrutinise practice and exchange ideas about teaching and learning processes, they come to value collegiality among themselves and also value collegial expertise. The findings from Chigonga and Mutodi's (2019) study offered pointers for this current study to determine whether the FP teachers were influenced in similar pedagogical processes.

Nationally, studies discussed above albeit conducted with schoolteachers and having researched the ways in which professional learning influence classroom practice, they did not investigate FP teachers. The studies used qualitative research approaches within the interpretive paradigm. Purposive sampling was adopted to select participants. The findings

indicated that professional learning influenced teacher professional growth around confidence development and content knowledge, the use of different teaching strategies including code switching, and learner involvement in increasingly practical-oriented lessons. Further, it was found that professional development workshops were disconnected from classroom practice as these did not effectively influence teacher classroom practice. The next section sums up the chapter.

Chapter summary

The aim of this study was to gain an insight into how rural, urban and township FP teachers professionally learn outside the formal programmes, the knowledge that they gain and how the learning influences their classroom practice. All the literature consulted and analysed from international, regional, and national contexts focused on primary and secondary schoolteachers as well as university students; only one study was carried out with FP teachers. This indicated limited research in this phase – a gap to which the current study would contribute. The studies evaluated were guided by theoretical frameworks and conceptual frameworks, and in most cases only one theory was adopted. Methodologically, the studies were located in the qualitative research approach within the interpretive paradigm and interviews were generally the main data generation instrument used. The studies employed different sampling methods although purposive and convenience sampling designs were popular.

With regards to Research Question One on the nature of professional learning, international, regional, and national studies critically analysed and discussed above investigated primary and secondary schoolteachers, except one, as alluded to above, which explored FP teachers. From these studies, it emerged that professional learning was experienced through interaction and collaboration in clusters, workshops, meetings as well as through day-to-day teacher teaching roles such as reading, lesson preparation and delivery which included student engagement through questioning and discussing their assessments. The international and regional studies reviewed also illustrated that teachers professionally learn through individual and collaborative reflection on daily lessons and classroom practice, reflection on learner performance and learner assessments.

Further, professional learning also occurred when teachers collaboratively designed, planned, presented lessons, and reflected on them. Interaction in collegial collaboration emerged as a major avenue for professional learning. Most of the studies were conducted in urban contexts

and only a few took place in the rural and township contexts which justifies the inclusion of these two contexts in the current study. The fact that it was only the one UK study (as alluded to above) which explored early childhood teachers (FP teachers) from all the studies critically reviewed, in a different context and with a different focus, further justified the need for the current study.

In relation to Research Question Two on the kinds of knowledge that the teachers gained through professional learning, the international, regional, and national studies reviewed, revealed that schoolteachers gained PCK, PK, curriculum knowledge, knowledge of learners and knowledge of context. Studies evaluated from the international and national contexts, suggests that PK, which is the knowledge of 'how to' was the most popular kind of knowledge that was gained. In regional and national studies examined, PCK was the major kind of gained knowledge that emerged. However, the national studies revealed that teachers gained content knowledge in addition to PCK. International studies on schoolteachers that were analysed, revealed that participants gained knowledge related to scaffolding learner learning, how to organise learning activities to meet learner diversity and learner needs, how to break down a syllabus into contextually appropriate lessons and how to use different language skills in their pedagogical practice. Thus, the knowledge gained was around pedagogy. The regional studies critically reviewed further revealed that teachers gained professional knowledge related to improvisation, and how to make and use teaching aids, which was also about pedagogy. What also emerged is that some of the teachers developed confidence through professional learning.

In answering Research Question Three, on the influence of teacher professional learning on classroom practice, from the analysed international studies, professional learning improved reflective practice and experimentation among teachers, influenced and stimulated their knowledge, as well as general teacher practice and classroom instruction. It was noted that professional learning influenced teachers' teaching practices such as involving learners in hands-on activities, cooperative learning groups and classroom culture. From the regional studies critically reviewed, professional learning influenced classroom practice related to the use of teaching resources, selection of learning and teaching materials and textbooks, the use of various teaching strategies and chalkboard work. Further, it also emerged that professional learning enhanced teacher classroom management, communication, and work discipline. The national studies critically analysed suggest that professional learning influenced teacher professional growth around content knowledge and confidence development, the use of

different teaching strategies including code switching and learner engagement in practical work. From all these studies, the influence of professional learning related to general pedagogy.

From the discussion of various relevant literature critically reviewed, only one study explored how FP teachers experience professional learning outside the formal programmes – what they learn and how the learning influences their classroom practice. Therefore, this study attempted to contribute to that gap.

Having critically analysed and discussed in some detail related literature, the next chapter describes the theoretical frameworks by Biggs (2003) and Illeris (2009) and the conceptual frameworks by Banks, Leach and Moon (1999) and Cogill (2008) that underpinned the current study.

CHAPTER THREE
THEORETICAL AND CONCEPTUAL FRAMEWORKS

Introduction

This research investigated the professional learning of FP teachers outside formal programmes and how the learning influences their classroom practice. The previous chapter reviewed relevant literature on teacher professional learning from the international, regional, and national contexts. The literature illustrated that teacher professional learning was generally experienced in day-to-day teacher teaching roles, interaction and collaboration in both restricted sites (school contexts) and wider professional sites (outside schools). This chapter discusses the theoretical and conceptual frameworks which guided the study.

This study draws on Biggs' (2003) deep and surface learning theory strategies complemented by Illeris' (2009) theory of the types of learning. Given that the study was about how the FP teachers professionally learn, these theories were appropriate, due to their focus on how learning happens. The two theories specifically enabled understanding of data addressing Research Question One on the nature of professional learning engaged in by FP teachers outside formal programmes. However, they could not help in analysing and explaining data answering Research Question Two on the kinds of knowledge that the FP teachers gained, as well as Research Question Three on how professional learning influences the FP teachers' classroom practice. Consequently, additional conceptual frameworks by Shulman (1987) and Cogill (2008) around domains of teacher knowledge were used to help address Research Questions Two and Three.

Grant and Osanloo (2014: 13) defined a theoretical framework as a "blueprint for the entire dissertation inquiry that serves as the guide on which to build and support your study, and also provides the structure to define how you will philosophically, epistemologically, methodologically, and analytically approach the dissertation as a whole." In other words, a theoretical framework provides the backbone to the study where it is grounded, sustained, carried out and reported. A conceptual framework is a set of key concepts drawn from different theories, or researchers that are brought together into a framework to address and help understand the phenomenon in question (Cohen, Manion and Morrison. 2018; Mukeredzi 2016). For example, when researching teacher learning such concepts like how teachers learn, kinds of knowledge, sources of knowledge, and influence of knowledge learnt will help in

understanding teacher professional learning. Thus, it draws on a variety of authors and theories in defining and explaining phenomena. Conceptual frameworks are loosely put together and less developed than theoretical frameworks. In this study, the theoretical and conceptual frameworks employed, guided choices regarding data generation and interpretation, as well as explaining findings. Thus, the frameworks provided a frame of reference for how the FP teachers engage in professional learning and how the learning influences classroom practice.

The discussion on the theoretical frameworks covers their historical development, principles, and application in the study as well as weaknesses, including how these shortfalls were dealt with to minimise their impact on the findings.

The historical development of deep and surface learning theory

Deep and surface learning strategies were developed by Craik and Lockhart (1972) who proposed that the depth of active thinking or processing that goes into the original learning would determine the nature and extent of subsequent memory of the event. In other words, the depth of cognitive effort in the learning process determines the extent of knowledge retention. Thus, engaging in a learning process deeply determines how individuals master and retain the knowledge learnt. These authors proposed a spectrum of strategies ranging from processing physical attributes only at the semantic encoding level from the deep end to the shallow end.

Semantic encoding is the process of converting information into some format for easy understanding which determines how one memorizes and applies learned knowledge in a given learning context. Their argument was that learning encompasses related ideas that cater for individual differences forming a continuous sequence. In other words, a word or concept which is seen in a book may be stored or retained in memory if it is changed (encoded) into a sound or a meaning (i.e. semantic processing). Thus, the learner (FP teacher) may remember a word or verbal expression by storing its meaning rather than its sound or the physical movements required to articulate it.

Craik and Lockhart further explain that this determines whether it is a deep learning strategy which results in the formulation of new information or shallow processing which focuses on reproducing information. This learning could be determined by the individual's characteristics related to their openness to learning complex information and how they wish to approach and accomplish their set learning goals (Craik and Lockhart 1972). For example, when the FP teachers feel that they have insufficient knowledge about teaching subtraction which involves

carrying, they may search for information from the internet or consult experts in that level or discipline. However, further than this, Craik and Lockhart (1972) did not comprehensively define the characteristics and distinctions between deep and surface learning.

This theory was further developed by Marton and Säljö (1976) who distinguished 'deep level' and 'surface level' strategies of processing learning. These authors defined surface learning as rote learning and memorization of text. Rote learning is generally understood as a process of memorizing information based on repetition which enhances students' ability to quickly recall basic facts which help them develop foundational knowledge of a topic which has been found extremely effective in teaching basic maths concepts to primary school learners to learn counting, addition, subtraction, and multiplication tables and is also effective for learning basic vocabulary and spelling (Mukeredzi 2020). Such learning could benefit FP teachers given that they teach young primary school children.

Marton and Säljö (1976) defined the deep learning strategy as involving a meaningful learning with understanding of a text's meaning and significance. These researchers used this theory to understand learning approaches for students generally, including students in higher education. Marton and Säljö used students' understanding to determine whether they engaged in a deep level knowledge acquisition strategy or surface level acquisition strategy, for example whether they read for comprehension and retention, or surface level acquisition because they had to, in order to fulfil requirements, get the task out of the way or to master basic concepts, vocabulary or spelling as defined by Mukeredzi (2020) above. These authors discovered that if students' intent is to extract maximum meaning and benefits from some learning, then they would adopt a deep level learning strategy. In the case of FP teachers interacting with the content, analysing, interpreting it for understanding and applying it in their teaching, this then would be deep level learning. Surface level knowledge acquisition would occur when they learn content quickly and only recall basic facts which help them develop only basic knowledge on an area or topic with the intention of simply reproducing wholly or parts of the content in their teaching.

Entwistle, Hanley and Hounsell (1979) took over from Marton and Säljö (1976) and came up with three aspects of learning and comprehension which they called understanding, achieving, and reproducing. Understanding involves mastery and comprehension emanating from a deep search for meaning, which emanates from intrinsic motivation and could be related to deep learning. Achieving is about a high degree of self-confidence and ruthless organization which may lead to understanding, while reproducing involves memorizing information verbatim,

related to extrinsic motivation and fear of failure (Entwistle, Hanley and Hounsell 1979). Thus, understanding and achieving imply deep learning while reproducing uses a surface learning strategy. In other words, careful organization could result from the way the FP teachers engage in their professional learning. For example, FP teachers might organize professional learning strategies, and remain open to learning new information which may give rise to understanding and mastery of different classroom pedagogies. Others may learn and memorize, then reproduce what they have learnt and drill their learners on that information so that they achieve good results in the examination. In addition, some FP teachers may learn some teaching strategies or concepts but without in-depth understanding of how to use those teaching approaches effectively in the classroom.

Following on from Entwistle, Hanley and Hounsell (1979), Ramsden and Entwistle (1981) came up with four strategies of learning. They extended understanding, reproducing, and achieving strategies forwarded by Entwistle, Hanley and Hounsell (1979) by adding a fourth strategy, 'disorganized and dilatory'. 'Disorganized and dilatory' implies a negative relationship with the learning process and academic progress where there is lack of order and a tendency to delay or procrastinate, as a means of avoidance. In the case of FP teachers this may imply some tardiness or delay in settling down to learn new skills or concepts.

Schmeck (1983), in line with these strategies of learning, pursued the depth of processing analogy or resemblance between deep learning and surface learning strategies and proposed a further four strategies in the complexity of the nature of learning processes: methodical learning, deep processing, fact retention and elaborative processing.

First, methodical learning strategy could be viewed as a process of learning which includes the theoretical analysis of the strategies and principles applied to the area being studied (Schmeck 1983). Marcela (2015) asserts that being methodical in learning is related to how often a student studies and how they use techniques in "how-to" study guides. This strategy of learning is commonly utilized by mature students, usually university students. In this study, FP teachers as mature people determine the nature of professional learning they want to engage in, what to learn and how to learn it. For instance, they may choose to learn through Grade meetings, or in wider collegial collaborative professional learning activities where they could learn about lesson preparation and lesson delivery.

Second, the deep processing strategy of learning encompasses both 'vertical' and 'horizontal' learning strategies (Schmeck 1983). The horizontal strategy refers to personalizing or individualizing learning where personalization is a situation in which the FP teacher tailors the professional learning to their own learning needs. Thus, it is the process where the learner (the FP teachers) adjusts their learning pace, adjust the approach (differentiation), and connect the learning to their interests and experiences. Personalization affords the learner (FP teacher) a degree of choice and flexibility about their learning.

Craik and Lockhart (1972) indicate that depth of processing learning involved in memory predicts the depth of information processed and the duration the memory trace will last. The vertical processing encompasses two strategies: the shallow and the deep strategy. Schmeck (1983) explains that reflection on experiences helps individuals to learn or relate learning material to their existing knowledge and interests, while deep or vertical processing strategies refers to the depth of conceptual understanding. For example, the FP teachers may engage in professional learning activities such as reflection on learners' work and this process could result in acquiring knowledge and skills related to learners and their practice.

According to McLeod (2007) the shallow strategy encompasses the maintenance rehearsal, i.e. repetition which helps the learner to hold details in the short-term memory which leads to a very short-term retention. McLeod further explains the deep learning strategy as a more meaningful analysis of information which leads to better recall. For example, FP teachers may learn from linking or reflecting on their previous experiences or knowledge and relate it to what they encounter in teaching (to the new learning from practice), or collegial discussions during professional learning activities. When this linking and reflection occurs, deep learning of a vertical nature would have taken place.

Third, Marcela (2015) contends that fact retention is when the students have a proclivity to memorize facts and details, storing factual information, names, dates, formulae, and definitions. Hence, the concept of fact retention involves the retaining or remembering of information or facts for both the short term and the long term (Schmeck 1983). For instance, FP teachers may engage in online professional learning to enhance their knowledge and skills so that they remain effective in their teaching. Online learning is one of the most effective methods for long-term knowledge retention, whereas memorisation leads to short term retention.

Fourth, Schmeck, Ribich and Ramanaiah (1977) explain that the elaborative processing is when the students practice encoding information, through self-involvement; personalize information and translate it into their own words and experiences or apply it in their visual imagination. The FP teachers – in experiencing new learning – may link it to their experiences, tailor it to their needs and apply the knowledge in their teaching. This suggests the deep learning strategy.

Biggs' (2003) theoretical framework

Following Schmeck (1983), Biggs (1987) named three learning strategies: surface strategy, deep strategy and achieving strategy. The achieving strategy had been suggested earlier by Entwistle, Hanley and Hounsell (1979). These three strategies suggest different levels of the quality of learning. The surface learning strategy relates to surface learning, as defined above, and leads to accurate but unintegrated recall of detail, given that the mode of learning often involves recall. The deep learning strategy involves in-depth understanding of principles and concepts on a subject or topic, in which students (FP teachers) construct meaning and process information and ideas; they actively use their intellect to first understand some basic principles and ideas, and then apply, analyse and interpret their basic learning through new experiences (Mukeredzi 2020). The learners (FP teachers) become fully engaged in the learning experience which deepens their understanding and develops cognitively complex learning skills and habits of mind, Mukeredzi further notes. Again, in the case of FP teachers, such learning would have value in transcending the FP classroom to the real world.

The achieving strategy leads to attaining whatever goals the student sees as the most pertinent to high grade attainment. In this context, the FP teachers may engage in professional learning activities with the aim of acquiring in-depth understanding of the content they teach in order to teach it effectively. Marton and Säljö (1976) argue that during learning, learners tend to use either a deep or surface learning strategy. Biggs further explains that good teaching may influence learners to engage in a deep learning strategy while poor teaching can pressure learners to choose a surface learning strategy.

Later, Biggs (2003) revised the three learning strategies and named only two: deep learning and surface learning strategies. These strategies of learning as offered by Biggs focus on stratagems and show the link between the way the learners approach learning and their levels of understanding. The two strategies of learning are discussed in turn below.

Deep learning strategy

Biggs (2003: 16) views the deep learning strategy as "a felt need to engage the task appropriately and meaningfully, so the learner tries to use the most appropriate cognitive activities for handling it." In other words, adopting a deep learning strategy is driven by some need to learn, which prompts the person to engage with the learning, paying careful attention to understand. In the process the learner attempts to apply the cognitive/intellectual activities to engage in that learning effectively and efficiently, in order to understand. This process enables effective learning. Figure 3.1 shows Biggs' (2003) principles of deep learning captured by knowledge transformation.

Knowledge transformation

Knowledge transformation is identified as a core characteristic which occurs when new knowledge is created (Nonaka and Takeuchi 1995). Transformation implies a 'change' in mindset, change 'in the self' which often occurs through a process of continual self-questioning, critical reflection, exploration, challenging, evaluation, testing, discovery and the creation of an organization's management theory and application (Biggs 2003). Therefore, transformation can be influenced by circumstances which might cause learners (FP teachers) to reconstruct new skills and strategies to enhance the performance in their roles.

Kolb (1984: 38) posits that, "Learning is the process whereby knowledge is created through the transformation of experiences." Given that the FP in this study were experienced teachers, they were likely to change their ways of teaching after transformation through professional learning. Thus, transformation can be viewed as a complete change in the character of an individual for the better. Illeris (2009) explains that change in one's views, mindset, knowledge, confidence as a learner, motives in learning, perceptions, and self-esteem leads to being a better teacher and learning facilitator.

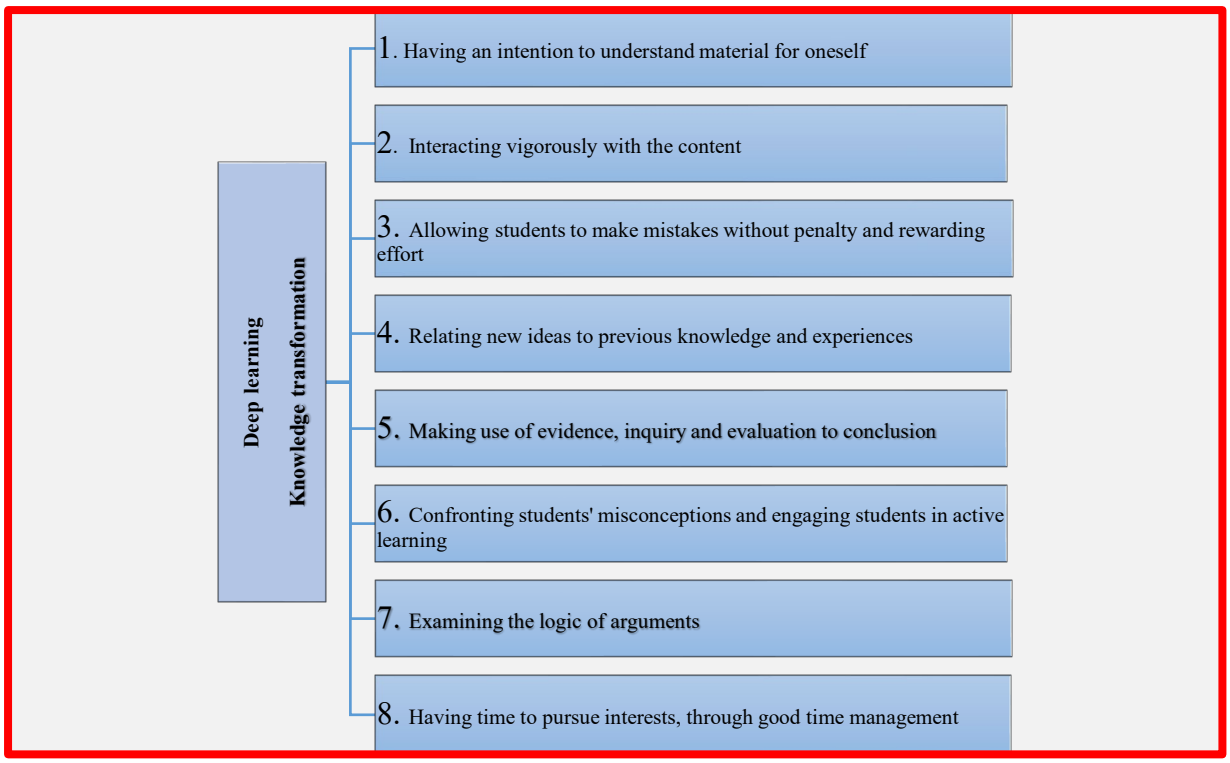

Figure 3.1: The eight principles of deep learning strategy. Adapted from Biggs (2003)

The first principle, **the intention to understand material for oneself** may be evident when the FP teachers engage in professional learning activities with the intention to develop an in-depth understanding of various teaching materials through actively using their cognition to process information and concepts, master basic principles and concepts, apply them, and then reflect on and analyse their effectiveness (Mukeredzi 2020) for their own professional growth. Prosser and Webb (1994) argue that teachers who adopt such approaches often interrogate the arguments, facts and aspects of the knowledge they encounter and continuously aggregate them to get a bigger picture. For example, FP teachers may have an intention to understand concepts in the curriculum and search for information on their own to understand it.

Interacting vigorously with the content: Bitter and Loney (2015) posit that the deep learning strategy produces competencies that include content mastery and the ability to apply learned knowledge to solve problems. Hence, the FP teachers may engage in deep professional learning strategies such as reading the Integrated Quality Management System (IQMS) policy, questioning, and analysing its content, evaluating its applicability in order to gain an in-depth understanding of its components and application during teacher practice.

Allowing students to make mistakes without penalty and rewarding effort is about accepting errors and learning from them. It is generally understood that more learning occurs from one's errors than from good performance. Mukeredzi (2015) points out that errors bear the potential to improve knowledge acquisition, provided that learners are able to deal with them in an adaptive and reflexive manner. In the case of FP teachers, as learners, they are also prone to making mistakes in their teaching and learning processes. It is through these mistakes that more learning occurs in an effort to correct errors. Similarly, FP teachers are expected to give learners time to solve problems on their own, making mistakes and correcting themselves on their own without interfering (Makwara 2015) which offers the teachers professional learning. Thus, FP teachers may professionally learn from day-to-day roles and classroom experiences.

Teachers generally praise learners by rewarding intelligence, which confirms learning behaviour based on achievement, this sets them up to avoid tasks that do not come to them as naturally as children who are "smart." Thus, in most academic settings, learners may not know how to handle the inevitable assignments that may challenge them beyond their capacity (Turner 2016). However, when teachers are aware that they should praise learners for effort, this produces learners who approach difficult tasks with the knowledge that their hard effort, not their natural gifts, can and will help them succeed; then deep learning will have occurred. Emphasizing the learning process opens learners up to the joy of learning and overcoming academic challenges and obstacles, this realisation comes from deep learning.

Relating new ideas to previous knowledge and experiences: Marton, Hounsell and Entwistle (1997) explain that teachers should be able to decompose the knowledge and they should possess the ability to grasp new parts by relating it to knowledge at hand. Decomposition here implies deconstructing, dissecting, separating, and critiquing it, by separating the good, bad and way forward, which involves the deep learning strategy. The deep learning strategy also involves critical reflection about one's learning and trialling it (Biggs 2003). Therefore, FP teachers might professionally learn teaching strategies which best suit their learners and their context. For example, whole-class teaching could be selected by FP teachers who teach in urban schools while a grouping strategy may best apply in township or rural schools where the teachers have large classes and resources are limited. The FP teachers may also professionally learn through reflection on their lessons – dissecting the lesson to understand what went wrong or what was good, what and how teaching and learning could have been done differently. This

is supported by de Klerk, Eggen and Veldkamp (2014) who argue that reflection requires teachers who have the capacity to focus on their own teaching and identify strengths and weaknesses in their own practice and this, in turn, requires deep professional knowledge.

Making use of evidence, inquiry, and evaluation to conclude: Chotitham, Wongwanich and Wiratchai (2014) contend that deep learning means to seek for meaning, to understand through reading widely and inquiring to make evaluations which help in drawing good conclusions. Such processes involve deep learning. Darling-Hammond (1992) explains that in the construction of professional learning, teachers are viewed as effective specialists, who have tacit knowledge bases or knowledge-in-practice, who continuously construct knowledge through reflection, evaluation, analysis and making final conclusions or judgements. They continually reconsider and re-evaluate their teaching requirements and practices and learn therefrom. Since professional learning is an on-going process, and in the context of FP teachers, through reflection on their work and through trial and error, deep learning is likely to occur which may influence their teaching practice.

Confronting students' misconceptions and engaging students in active learning: Biggs (1989; 2003) explains that deep learning is represented by a personal commitment to understand material which is reflected through the use of different strategies such as checking learners' work and finding ways of helping them to understand concepts. Foundation Phase teachers may read widely to understand subject matter, to be able to identify learner misconceptions in order to address them. They may also create learner opportunities to process information and ideas and apply what they learn to real life situations beyond the school and the classroom, which also requires deep learning strategies.

Examining the logic of arguments is the ability to understand and analyse the logic of an argument comes through deep learning strategies. Logic of an argument implies the reasons that support a conclusion or are sometimes formulated so that the conclusion is deduced from statements. This is supported by Cervantes-Barraza, Hernandez-Moreno and Rumsey (2020) who argue that the arguments can be deconstructed, reconstructed, analysed, evaluated, and justified in examining its logic. Hence, the FP teachers could engage in professional learning activities such as decision making or argumentative discussions about the construction of Grade R reports, or the differentiated learning method, analysing its effectiveness and weaknesses, how, when, and why they use it in the classroom.

Evidence of deep learning from the time an individual has time to pursue interests, through good time management: Bitter and Loney (2015) and the William and Flora Hewlett Foundation (2013) concur that the deep learning strategy involves a set of competences including self-management that an individual masters in order to develop a keen understanding of academic content and their ability to apply their knowledge to situations and problems in the classroom. The ability to manage their learning, synthesise information, evaluate learner performance and use their evaluation results in their teaching, demonstrates use of the deep learning strategy.

Surface learning strategy

According to Biggs (2003: 14), the surface learning strategy comes from "the intention to get the task out of the way with minimum trouble while appearing to meet requirements." This seemingly implies that the learning is done to fulfil someone's request. For instance, Mukeredzi (2009) in her study of rural teacher professional learning, discovered that supervision of the teachers' preparation documents was often aligned to the neo-scientific management, where supervisors wanted to check documents simply to ensure that duties were being performed according to the laid down procedures and expectations. Hence, this strategy of learning included rote memorization of what needed to appear, in the documents and where, listing points rather than providing background underlying principles and context of the work. The surface learning strategy is also often adopted when individuals are motivated by fear of failure and there is very little reflection on the process of learning (Marton and Säljö 1976). In this context, the FP teachers may adopt this learning strategy to get the work done. Lublin (2003) states that the surface learner has no intention of either becoming interested in or of acquiring the subject content, but only intends to 'jump through the hoops' in order to complete the task or fulfil the requirements. Lublin further states that learners who adopt this type of learning strategy do not consider depth of content but rather, take a narrow view and concentrate on the details which make them acquire a mark, grade, or a qualification. In this context, if the FP teachers adopt this strategy to professional learning, they might end up emphasizing syllabus coverage rather than the depth of content and subject matter. Figure 3.2 presents principles of the surface learning strategy by Biggs (2003) captured by the concept of information reproducing.

Information reproducing

According to Biggs (1987), information reproducing is a tendency to avoid grasping the deep meanings of concepts or information, characterized by the use of rote learning. This, in short, defines the surface learning strategy. In other words, information reproducing involves putting together the facts on a topic in order to reproduce them and accomplish a goal. Individuals who normally fall in this category tend to have low self-esteem and they aim to meet minimum requirements only. In most cases, such learners try to memorize concepts verbatim because of fear of failure and are generally only extrinsically motivated.

Figure 3.2: The ten principles of surface learning strategy

Source: Adapted from Biggs (2003)

From the principles presented in Figure 3.2, the surface learning strategy according to Biggs (2003) involves simply producing parts of the content, where ideas and information are accepted passively. Emphasis is on the coverage of content at the expense of depth and understanding. Very little time is often allowed and in terms of coverage, the ground is wide and such a workload is heavy but produces a cynical view of education, believing that factual recall is what is required (Biggs 2003). The focus is often on what is required for assessment

and usually the assessment cycle is short which leads to memorizing facts and procedures routinely, without deep interest in, and background knowledge of the subject matter (Biggs 2003). There is no reflection on the purpose or strategies employed as there are often no clearly defined principles. In instances where such a strategy is adopted in the context of FP teachers, the intention would be simply to accomplish tasks without seeking mastery of information.

Biggs (2003) offered deep and surface learning strategies that could be used to understand specifically how professional learning occurs within the approaches. Howie and Bagnall (2013) contend that there is one major criticism of Biggs's theoretical framework from which the other criticisms cascade: that the model is still in an underdeveloped state and lacks refinement. Notwithstanding these weaknesses, the under-development and lack of refinement allows the theory to be accepted, applied, and combined with other models to expand its applicability by a wide range of higher educational researchers and teachers (Howie and Bagnall 2013). In this study, Biggs' theory offered learning strategies, however, specifically the types of learning that happen within those strategies, are blurred. Consequently, I had to complement the Biggs' (2003) strategies with types of learning offered by Illeris (2009). Illeris' theory is discussed below.

The historical development of learning theories

Learning theories are generally understood from three main domains: Behaviourism, Cognitivism and Constructivism. Behaviourism is about knowledge being independent and external to the learner, where learners respond to a stimulus as they are seen as blank slates to be filled. Contrary to behaviourism, in this study, professional learning for FP teachers was generally non-formal, informal and from practice where opportunities of responding to stimuli may not have existed. In contrast, cognitivists believe that students process information they receive and do not just respond to a stimulus (Heaster-Ekholm 2020). In the context of this study, FP teachers were likely to have been reflecting on their learning processes and did not just accept whatever learning they came across. They probably processed it and tested it, before accepting it as knowledge.

Constructivists believe in knowledge construction when learning new ideas based on prior knowledge, experiences, and learning, which is unique and subjective to the individual learner and there is reflection on prior theories (Felin and Foss 2011). Vygotsky's constructivist theory, however, places more emphasis on the social environment as a prompt of development and

learning (Amineh and Asl 2015). From Vygotsky's standpoint, emphasis is on the interaction between the learner and the environment (Felin and Foss 2011). In this case, FP teachers probably engaged in professional learning from their classroom context, and from their school from where interaction occurred. Illeris' (2009) types of learning theory are aligned to Vygostky's constructivist learning theory as it involves engagement and environment (context).

Illeris' (2009) theoretical framework

Illeris (2009) shows that, learning occurs through two processes: the external process (learner and their context) and the internal/psychological process (process of elaboration and acquisition). However, these two processes must be integrated if any learning is to take place. He further indicates that learning involves three dimensions (content, incentive, and environment). Content is about what is learned: for example, knowledge and skills, etc. Incentive provides and directs mental energy for learning to occur, for example motivation and volition. Content and incentive rely on interaction of the learner with their social, societal, cultural, and material environment (Illeris 2009). In other words, if interaction in a FP meeting is inadequate, then learning will suffer, or something different may be learned.

Illeris (2009) identified four types of learning: cumulative/mechanical, assimilative, accommodative, and transformative. Hence, in this study, the learning theory helped understanding the types of learning that FP teachers experienced within the deep and surface learning strategies offered by Biggs (2003), discussed above. These types of learning are discussed in turn below.

Cumulative learning

Illeris (2009) states that cumulative learning is characterised by mechanisation processes to learn something that is new, and not part of anything else or something that is not of personal significance, for instance a cell phone number. Illeris points out that such learning is only recalled and applied during situations that are mentally similar to the learning context. For instance, having learnt a cell phone number, the FP teacher will recall it and use it when they want to make a call to that person. Cumulative learning occurs in special situations in which individuals learn with no context of meaning or personal significance but just to accomplish a task. For example, the FP teacher may engage in a learning activity like completing the IQMS assessment forms without paying attention to critical aspects of the policy but only to fulfil the

requirement of the DBE. Hence, this type of learning includes rote memorization, or listing points without personal significance. Cumulative learning is mainly a type of learning which is usually used in the training of animals (dogs) and is therefore also referred to as conditioning in behaviourist learning types alluded to above, where animals would respond to stimuli when placed in a specific context.

Assimilative learning

Illeris (2009) asserts that assimilative learning or learning by addition implies that the new knowledge is linked in some way to the existing mental schema, pattern or existing knowledge. Piaget (1980: 164) defines assimilation as "the integration of new objects or new situations and events into previous schemes." In other words, assimilation is a process of fitting new information into old ideas. That may imply that the FP teachers may build up their professional knowledge through constantly adding new ideas to what they have previously gained. Illeris further explains that due to the linkages with existing schema or patterns, the new knowledge is relatively easy to recall and apply when one is mentally oriented towards the field in question.

Given that these were qualified FP teachers, they might have had similar kinds of knowledge which they had gained from university, thus related knowledge gained through professional learning activities in restricted and wider sites added to the (existing) knowledge or schema gained in university. In other words, assimilation occurs when the new knowledge is some way linked to the previously existing schema. The FP teachers probably experienced learning by assimilation through engagement in professional activities where they discussed teaching strategies, for instance. Applying the strategy in the classroom they may have realised some new learning to be added to existing knowledge on strategies or shortcomings to be addressed. On the contrary, however, Kutz (1999) indicates that whatever an individual learns relates to the already existing schema of knowledge. Thus, the new is easily integrated into the existing thought structures, as the new information easily fits in with what is already known.

Accommodative learning

Illeris (2009: 13) states that "accommodative learning implies that one breaks down (parts of) an existing scheme and transforms it so that the new situation can be linked in." Piaget (1980) views accommodation as a process of taking new information in one's environment and altering pre-existing schemas in order to fit in the new information. In a situation where FP teachers professionally learnt about research teaching strategy, they would need to alter

existing schemas (for example whole class teaching) to fit in the new knowledge. Akhurst and Sader (2009) add that when accommodation occurs, the existing schema are adapted to incorporate the new learning/experience. In such cases there is a mismatch or conflict of existing schemas and new information, hence the need to break it down to fit the new. In other words, this may be new information gained that is different from what FP teachers knew already and they have to create space for it. Thus, these teachers must then reorganize or change the organisation of their existing schemas (knowledge in their minds) in order to accommodate the new information.

Given that one both relinquishes and reconstructs something, this type of learning is felt as demanding or painful as it requires a strong supply of mental energy (Mukeredzi, Bertram and Christiansen 2018). Thus, for the FP teachers, they would need to cross their existing limitations and understand/accept something that is considerably new or different. This is more demanding than simply adding a new element to an already existing mental schema or pattern (assimilation). Hence such learning can be recalled and applied in different and relevant contexts. Illeris (2009) points out that the outcome of accommodative learning is illustrated by the fact that it can be recalled and utilized in challenging situations which are similar. Accommodation is typically experienced when one has understood or grasped something which they have effectively internalised. Internalisation here implies in-depth mastery where the internalised knowledge can be demonstrated in practice (externalisation).

Transformative learning

Transformative learning is defined as "the process by which we transform problematic frames of reference (mind-set, habits of mind, meaning perspectives), set of assumptions and expectations to make them more inclusive, discriminating, open, reflective and emotionally able to change" (Illeris 2009: 92). In the case of FP teachers, professional learning activities might change their mindset and views about their teaching which may lead them to make profound changes in the way they view the world. Transformative learning involves personality changes or changes in the organization of the self which are characterized by simultaneous restructuring of schemes and patterns in all three of the learning dimensions (content, incentive and environment) (Illeris 2008), as alluded to above. Such learning is also known as expansive or transitional learning (Engeström 2004). Given that transformation occurs at a psychological level, transformative learning is therefore a taxing/demanding process that changes the very personality or identity of the person and occurs only in situations of profound significance to

the learner, in this case changes in the professional life or worldviews of the FP teacher. This kind of learning implies a break in orientation or previous assumptions (worldviews) that typically occurs as a result of a crisis-like situation caused by challenges experienced as urgent and unavoidable, making it necessary to change oneself in order to get any further (Illeris 2009) or to make progress. A FP teacher may have had negative views about remediation or handling diversity, but from discussions with colleagues or parents, engages in self-interrogation, and critical self-reflection on their beliefs and assumptions, from which they then change the way they see remediation and handling diversity in the classroom. Thus, they change the way they see the world, and they change their worldviews. Through such processes, transformative learning generally becomes profound and extensive and thereby demanding a great deal of mental energy, which upon accomplishment brings feelings of relief/relaxation.

As alluded to above, I also needed a framework to assist with unpacking and describing the types of knowledge that FP teachers gained, which Illeris' theory could not do. Thus, to understand the knowledge gained I adopted Shulman's (1987) domains of teacher professional knowledge. To complement Shulman (1987), I also draw on Cogill (2008) and Banks, Leach and Moon (1999) on aspects related to contextual knowledge. The domains of teacher professional knowledge are discussed in the next section.

Shulman's (1987) domains of teacher knowledge

The American, Lee Shulman (1986) was the first researcher to describe the kinds of professional knowledge which teachers need in order to execute their teaching roles, and many studies acknowledge and use his work as their starting point. Shulman (1987) offers seven domains of teacher professional knowledge namely:

1. Content knowledge;
2. General pedagogical knowledge;
3. Pedagogical content knowledge;
4. Curriculum knowledge;
5. Knowledge of educational context;
6. Knowledge of learners and their characteristics and
7. Knowledge of educational ends, purposes and values.

Notwithstanding the fact that other researchers like Grossman (1990), drawing on Shulman, collapsed these seven knowledge categories into four domains, namely: general pedagogical knowledge, subject matter knowledge, pedagogical content knowledge and knowledge of context, labelling them the interacting components that form the knowledge base and cornerstone for teaching, this study draws mainly on Shulman's domains of knowledge, discussed below.

Content knowledge

Shulman (1987) defines content knowledge as the knowledge teachers have of the subject matter that they teach. This is the content that learners should learn. Other researchers call this subject knowledge, viewing it as analogous to content knowledge. In this study, it is viewed as the content knowledge that FP teachers possess which they should teach, and that the FP learners should learn. McDiarmid (1994) also asserts that knowledge of content refers to the knowledge that experts have in relation to the content of a specific discipline or subject that learners need to learn. Banks, Leach and Moon (1999) state that FP teachers teach a range of subjects and therefore, in this context are expected to learn and possess knowledge of content of each subject in order to teach effectively and lay solid foundations for children's later learning. Shulman (1987) suggests that content knowledge is an important domain for teaching as it affects task setting, planning, explaining, questioning, assessment and giving feedback. From what Shulman is saying, content knowledge provides a backbone for FP teachers' professional activities in the classroom from lesson preparation through delivery and assessment to giving feedback.

Additionally, Webb and Smith (2019) stress that having knowledge of subject content is crucial, not only for effective teaching but for evaluation of textbooks, preparation/selection of teaching aids and computer software, etc. This is essential, as the FP teachers are also expected to assess content of different textbooks before drawing on them in lesson planning and delivery. Webb and Smith (2019) further note that those FP teachers with strong content knowledge are well-equipped to make good choices relating to tasks that engage their learners and to organise them in such a way that pupils may benefit.

General pedagogical knowledge

Shulman (1987) views general pedagogical knowledge as referring to broad principles and strategies of classroom organization and management that appear to transcend subject matter.

Grossman (1990: 9) states that, "general pedagogical knowledge includes the body of general knowledge, beliefs and skills related to teaching, knowledge and beliefs concerning learning and learners, as well as knowledge of the general principles of instruction." This is the knowledge of principles of teaching which deals with generic skills that teachers are expected to possess to effectively handle general demands of the classroom. According to Bertram (2011: 7), general pedagogical knowledge is "a complex set, which includes knowledge of classroom organization and management, different teaching strategies or methods, assessment strategies as well as understanding classroom communication and discourses." In other words, pedagogical knowledge involves knowing 'what', 'how,' 'when' and 'whom' to teach. Thus, FP teachers need to have this kind of knowledge for effective teaching and learning to occur.

While professional knowledge may be gained formally, non-formally, or informally, it can also be gained in practice as 'knowledge-in-practice' (Kelly 2006). Kelly confirms that knowledge-in-practice (the situated tacit understandings gained from reflecting on and internalising teaching experiences) cannot be separated from 'knowledge-of-practice' (propositional knowledge that is developed through research and gained formally). Notwithstanding that these knowledges cannot be separated, they are different as one is gained formally or non-formally while the other is gained informally through practice. Foundation Phase teachers in this study would need to have learned both kinds of knowledge (the facts and principles) and knowledge-in-practice (the tacit knowledge gained in practice and situated) in order to teach effectively.

Pedagogical content knowledge (PCK)

Shulman (1987: 8) defines PCK as "the special amalgam of content and pedagogy that is uniquely the province of teachers, their own special form of professional understanding." In other words, it is the knowledge of how to teach a certain subject or topic which enables teachers to make content comprehensible/accessible to learners, for instance using simple examples, clear analogies or presenting material in interesting and motivating ways (Mukeredzi and Manwa 2019). Cogill (2008) also views PCK as an amalgam of content and pedagogy into an understanding of how particular concepts are adapted, organized, and represented to make it accessible/comprehensible to diverse learners during instruction. In other words, PCK is thus a combination of the knowledge of content, and pedagogy, including an understanding of how these can be modified or simplified and organised to make them understandable to learners. Cogill describes this process as vital for easing the learning for pupils.

This knowledge is also viewed as professional knowledge of how to teach within a particular subject specialisation which transcends content knowledge to the dimension of subject matter knowledge for teaching (Grossman 1990; Shulman 1987). Simply put, it combines general pedagogical and specific subject content, approaches, and instructional illustrations for teaching particular concepts (Cogill 2008). For the FP teachers, this implies that they would professionally learn knowledge of combining content with appropriate teaching strategies to ease the process of learner learning. An example would be the use of pictures, analogies, demonstrations, explanations and illustrations to teach addition in Mathematics before moving to numerical figures (numbers). This is supported by Wilson (2008) who argues that PCK is a way of building an understanding between teachers, learners, and their immediate environments.

Curriculum knowledge

According to Shulman (1986b: 10) curriculum knowledge is "represented by the full range of programmes designed for the teaching of particular subjects and topics at a given level, the variety of instructional materials available in relation to those programmes, and the set of characteristics that serve as both the indications and contraindications for the use of particular curriculum or programme materials in particular circumstances." Curriculum knowledge is thus the knowledge of that which should be taught to pupils at a given level which requires comprehension of their learning capabilities, the national and school syllabi, teacher teaching documentation and annual plans (Cogill 2008). The FP teachers would probably professionally learn such knowledge because it is the tool which guides what, who, why and how to teach in the classroom. This knowledge generally therefore provides the teacher's 'tools of their teaching trade' like knowledge of teaching materials or media for use in the classroom. The knowledge also often includes any examination or assessment schedules and local/contextual requirements. Some education systems include national assessment requirements, and how different frames (social, individual, or criterion-based) impact learner learning. Thus, curriculum knowledge gained by FP teachers would also encompass knowledge of assessment at school, district, and national levels. Such knowledge would also include horizontal and vertical curriculum alignment.

Vertical curriculum alignment generally occurs when subjects are connected across grade levels so that learners experience increasingly complex instructional programmes as they move upwards through the grades (Karen 2019). In other words, the same subjects (for

example, Mathematics) is taught across FP grade levels (Grade R to Grade 3) and the degree of difficulty increases as grades rise. Curriculum that is horizontally aligned implies that the same material is being taught across different classrooms in a given grade level, and that the material being taught is in alignment with the learning standards and assessments established by the district or state. In other words, FP teachers teaching the same grade level teach the same material in the same subject.

Knowledge of educational contexts

Shulman (1987) views knowledge of educational contexts as the knowledge which ranges from the workings of the group or classroom, the governance and financing of school districts, to the character of communities and their culture. Other researchers (Grossman 1990; Banks, Leach and Moon 1999) view knowledge of learners and their characteristics, and knowledge of school as aspects of knowledge of context and for that reason in this research I discussed these two aspects under knowledge of educational contexts.

Grossman (1990: 9) views knowledge of educational contexts as "knowledge of context" which involves:

> *the opportunities, expectations, and constraints posed by the districts, knowledge of school setting, including the school 'culture', department guidelines, and other contextual factors at the school level that affect instruction; and knowledge of specific students and communities, and the students' backgrounds, families, particular strengths, weaknesses and interests.*

The knowledge of context refers to an understanding of one's working environment where they perform their teaching duties. Grossman (1990) also adds that knowledge of educational contexts includes knowledge of schools, classrooms including all settings where teaching and learning takes place. Therefore, this domain is exceptional and interesting given that the knowledge is not structured or predetermined but occurs through membership in particular communities, observations, or engagement in activities within that context (Mukeredzi 2014). In this study, such knowledge was probably gained through informal and non-formal teaching-related spaces and activities, in which the FP teachers were exposed in different their professional learning environments. Turner-Bisset (1999) further explains that classroom performance is a function of contexts as they impact on the teaching and learning process in the classroom. Thus, the FP teachers would be expected to understand the values, norms,

practices, learners, programmes, classrooms, culture, governing bodies and the requirements of the community and the school in which they work. Anderson, Maughan and Pimbert (2019) also affirms that knowledge of context involves knowledge of philosophical, historical, and different cultural backgrounds of education within a certain country. Hence, understanding knowledge of learners' backgrounds and cultures, including historical and philosophical aspects, all form part of contextual knowledge.

Shulman (1987) also views knowledge of learners and their characteristics as knowledge which involves equality of opportunity and equity among students of different backgrounds and cultures. In this regard, Grossman (1990) regards knowledge of learners as part of knowledge of context which focuses on specific individual learners. In this study, knowledge of learners included knowledge of their background, learning behaviour and of their contexts. The FP teachers probably gained knowledge of their learner abilities, backgrounds, experiences, their communities and the way they generally behave. Shulman further mentions that teachers need to adapt and tailor their teaching considering students' characteristics which include consideration of conceptions, preconceptions, misconceptions, language and difficulties, culture, motivations, social class, age, gender, ability, interests, aptitude, self-concepts, and attention. Shulman calls this tailoring and adaptation, which refers to fitting the teaching and learning materials to specific learners in one's classroom rather than to the whole class in general. For example, the FP teachers probably gain professional knowledge of individual learner abilities and their characteristics as they engage with other teachers in various professional activities.

Banks, Leach and Moon (1999) define school knowledge as 'an analytical category' in its own right which Grossman (1990: 9) views as "the general knowledge to specific school settings." Banks, Leach and Moon further explain that school knowledge is related to the way content knowledge is taught in schools and includes understanding of the processes necessary to transform knowledge for learners. Banks, Leach and Moon also explained that understanding school knowledge can be viewed as non-linear and as the learning that has constant interpretation and reinterpretation at different stages. In other words, school knowledge includes all issues that affect teaching and learning situations and activities within and outside the school, for example the learners, resourcing, school norms, values, and practices and the economic level of the surrounding community that affects learner learning. Hence, the FP

teachers gained knowledge of the contexts where they were teaching: school context, learners and community, including the provincial, national, and international context.

Knowledge of educational ends, purposes and values

Shulman posits that knowledge of educational ends, purposes, and values and their philosophical and historical grounds includes the given aims and purpose that education is intended to achieve as well as the national philosophy and history that determine the current situation. The FP teachers probably gained knowledge of such purposes and values of education, the values to instil in their learners, and also knowledge of the philosophical and historical issues on which education was built – for instance related to the foundations of a critical civil society – with a culture of tolerance, public debate and accommodation of differences and competing interests. In other words, the FP teachers needed to gain an understanding of the past educational events and history which affected teaching and learning.

Shulman's domains of knowledge are often criticized for narrowness in scope, being fixed and external, rather than being viewed as knowledge which is constantly changing and influenced by the teachers' own professional knowing-in-practice (Ward and Ayvazo 2016). Cogill (2008) recommends using the model in combination with other models. In this study, in discussing and applying Shulman's domains to unpack, understand and explain the kinds of knowledge gained, I also borrowed from other researchers who have written about knowledge categories.

In addition, in this study, while Shulman's framework could assist with kinds of knowledge gained, it was not helpful in analysing and describing answers to Research Question Three about the influence of professional learning on classroom practice. Consequently, I had to draw on Cogill's qualities of good teaching to understand and explain the ways in which professional learning influenced the FP teachers' classroom practice.

Cogill's (2008) strategies and qualities of good teachers

Cogill offers a list of teaching activities, strategies, teachers' personal dispositions, and the qualities of good teachers drawing on proposals made by pupils and teachers which are reflected in Table 3.1. Thus, Cogill's classifications enabled understanding data and explaining

findings related to Research Question Three of this research about the influence of professional learning on teaching practice.

Table 3.1: Teaching activities, teachers' personal dispositions and qualities of good teachers

Teaching activities	Strategies and qualities of good teachers
Lesson planning and preparation	➢ Making clear what pupils are to do and achieve ➢ Considering how planning interacts with the management of classes and lessons ➢ Managing lesson introductions ➢ Managing question and answer sessions
Understanding children's learning	➢ Viewing children as imitative learners ➢ Viewing children as learning from didactic exposure ➢ Viewing children as thinkers ➢ Viewing children as managers of their own knowledge ➢ Judging what can be expected of a pupil ➢ Helping pupils with difficulties ➢ Encouraging pupils to raise their expectations
Influencing motivation	➢ Creating a relaxed and enjoyable atmosphere in the classroom ➢ Presenting work in a way that interests and motivates ➢ Providing conditions so that pupils understand the work
Classroom management	➢ Retaining control in the classroom
Teachers' personal dispositions	➢ Ability to develop personal mature relationships with pupils ➢ Personal talents ➢ Ability to build the confidence and trust of pupils

Source: Cogill (2008: 3)

These aspects listed in Table 3.1 above presented some of the statements derived from both theory and empirical evidence more directly linked to classroom practice, as presented by Cogill. They appeared suitable and helpful in describing and explaining the ways in which professional learning influenced classroom practice. The features encompass the major aspects of teaching and learning: lesson preparation and planning, lesson delivery and understanding children's learning, influencing learner motivation, classroom management and teachers' personal dispositions.

Chapter summary

The chapter discussed the theoretical and conceptual frameworks adopted for this study. First, I discussed Biggs' (2003) deep and surface learning strategies and their principles. I then discussed Illeris' (2009) four types of learning: cumulative, assimilative, accommodative, and transformative. These two theories helped to unpack, understand and describe the nature of

professional learning that FP teachers engaged in outside formal programmes. Third, Shulman's (1987) kinds of knowledge: content knowledge, general pedagogical knowledge, pedagogical content knowledge, curriculum knowledge, knowledge of educational contexts and knowledge of educational purposes and values were also discussed. Finally, an outline of Cogill's (2008) aspects of good teaching which guided analysis of the ways in which professional learning influenced teachers' classroom practice were presented, followed by the chapter summary.

Having discussed theoretical and conceptual frameworks, the following chapter discusses the methodology that was followed to find answers to the study's research questions.

CHAPTER FOUR
RESEARCH DESIGN AND METHODOLOGY

Introduction

This study sought to develop a deep understanding of FP teacher professional learning outside formal programmes and its influence on classroom practice. The previous two chapters provided an overview of the literature reviewed and the theoretical and conceptual frameworks. This chapter presents the research design and methodological approach adopted to guide data generation to address the research questions.

The study focused on one key question: How do FP teachers professionally learn outside formal programmes and how does the learning influence their classroom practice? This key question was addressed through the following subsidiary questions:

1. What is the nature of professional learning practices that FP teachers engage in outside formal programmes?
2. What domains of professional knowledge do the teachers gain?
3. In what ways does professional learning influence their classroom practice?

In this chapter, firstly I discuss the types of research paradigms, including the interpretive paradigm, which was adopted for this study, along with the paradigmatic assumptions. Secondly, I discuss the research design and the qualitative approach. This is followed by population and sampling where purposive and convenience sampling designs, as well as the sample size are discussed. Thirdly, I define the research setting followed by an outline of how I gained access to participants, followed by piloting. Fourthly, I discuss the methods of data generation employed in the study: a focus group discussion, individual face-to-face interviews, and photo-elicitation interviews. This is followed by an outline of the challenges faced in data generation. Fifthly, I describe the steps that I followed in analysing the data. Thereafter, I discuss the major limitations of the study and how I tried to address them to minimize their impact on findings. I conclude the chapter by highlighting the steps undertaken to enhance rigour and trustworthiness throughout the study under four key aspects: credibility, transferability, auditability, and confirmability. Finally, I explain the ethical issues that were taken into consideration throughout this study, before pulling these threads together in the chapter summary.

Research paradigms

The term paradigm originated from the Greek word '*paradeigma*' which means 'pattern' and was first used to represent a conceptual framework shared by a community of scientists to provide them with a model for investigating problems and finding solutions (Antwi and Hamza 2015). It therefore represents the philosophical assumptions or a basic set of beliefs that guide actions and define the worldview of the researcher (Denzin and Lincoln 2011). Paradigms are also viewed as ways of looking at the world, reflecting the different assumptions which researchers have about what the world is like, and how the world can be understood or known (Cohen, Manion and Morrison 2018). Paradigms therefore provide background information on the options and the beliefs that guide action taken in a disciplined inquiry or which points to what exists in relation to a phenomenon under investigation, including what and how it can be studied and understood (Mukeredzi 2009).

In this study, a paradigm represented a set of philosophical orientations or beliefs that offered me a model or frame of reference, including assumptions that guided and helped me to determine and select methodological aspects, and appropriate research methods to find and report the answers to my research questions.

There are generally three major research paradigms: Critical, Positivist and Interpretivist. The critical paradigm deals with research in social justice issues and seeks to address the social, political and economic issues, which lead to social oppression, struggle, conflict and power structures at whatever level these might occur (Kivunja and Kuyini 2017). This paradigm attempts to change the politics to confront social oppression and improve social justice in the situation and is sometimes called the Transformative paradigm. Given the nature of my study which sought to understand professional learning, and not to address social justice issues, the critical paradigm was not appropriate for this study.

The positivist paradigm defines "a worldview to research, which is grounded in what is known in research methods as the scientific method of investigation" (Kivunja and Kuyini 2017: 30). The paradigm implies that the data to be gathered is quantitative in nature and most likely analysed using quantitative procedures. The positivist objectivist epistemology holds that human understanding is acquired through the application of reason (Kivunja and Kuyini 2017) and that reality is static, with only one truth that can be discovered. My study examined the experiences of professional learning from multiple truths, thus this paradigm was also not

suitable. Thus, my study is located within an interpretive paradigm, sometimes known as the Constructivist paradigm

Interpretivist paradigm

According to Cohen, Manion and Morrison (2018), an interpretive paradigm resonates in part with a subjectivist, interactionist, socially constructed ontology and epistemology and recognizes multiple realities, agentic behaviours and the importance of understanding a situation through the eyes of the participants. In this study, viewing the phenomenon of the FP teachers' experiences of professional learning outside the formal programmes made for understanding multiple realities, subjective meanings and lived experiences through the eyes of the participants. It is through the interpretive paradigm I was able to describe the lived experiences of FP teachers' professional learning from their perspectives.

Further, Rubin and Babbie (2010) believe that the interpretive paradigm seeks to understand the purpose and meaning of life as experienced by participants. Therefore, this paradigm was suitable for my study as I sought to understand participants' lived experiences of their professional learning from their points of view. The paradigm was also aligned to the theoretical frameworks adopted for this study where the learning strategies (Biggs 2003) and types of learning (Illeris 2009) employed by students are dependent on their individual learning preferences and needs, hence being subjective. In consulted literature, Marshall and Rossman (2014) also assert that, the interpretivist paradigm resonates with the discourse on teacher professional learning as it allows participants to converse subjectively and naturally without prejudice. In other words, the aim of an interpretive research paradigm is to discover the knowledge that is created and re-created, constructed and re-constructed, through social interactional behaviour and actions in social settings (Cohen, Manion and Morrison 2011; Newby 2010). The data generated are therefore subjective, as the researcher seeks to generate deep understandings (insights) from participants as they answer focus group and interview questions and engage in descriptions during photo elicitation. Further, the interpretive paradigm in which my study is located is known for its extensive use of various forms of data generation instruments: interviews, focus group discussions, observation, visual and participatory methods to investigate and understand people's experiences and perceptions (Bertram and Christiansen 2020). This was the case in this study where I sought to understand FP teachers' professional learning experiences and employed interviews, a focus group discussion and photo elicitation to do so.

The paradigm pointed me in the right direction in my search for answers to my key question as the supportive structure, framework or pointer to assumptions which guided me through the research activities (Mukeredzi 2009). The assumptions were related to epistemological, ontological, axiological, and methodological aspects, which are discussed below.

Epistemological assumptions

The interpretivist paradigm assumes a subjectivist epistemology, a relativist ontology, a naturalist methodology, and a balanced axiology (Kivunja and Kuyini 2017). The assumption of a subjectivist epistemology implies that as the researcher, I had to make meaning of the data through thinking and cognitive processing of the data, drawing on interactions with participants. Epistemology has its origins in Greek where the word '*episteme*' means knowledge, which also describes how we come to know something; how we know the reality or truth or what counts as truth within the world (Kivunja and Kuyini 2017; Cooksey and McDonald 2011). Thus, the epistemological assumptions relate to how knowledge can be developed, created, and communicated. Epistemological assumptions would therefore answer questions like 'how do we get the knowledge, where does that knowledge come from, what is its character, what signifies it, who does it belong to, what part of it can be studied, understood and represented? (Mukeredzi 2009). In other words, epistemology therefore refers to the distance or relationship between the researcher and the participant, the relationship of the researcher to that which they are researching. From the positivist's world view, knowledge is 'out there,' waiting for the researcher to obtain it using rigid scientific methods like observation, measurement and quantification, with results represented statistically (Creswell 1998). In this case the researcher maintains some distance from the participant, there is a somewhat detached relationship, a distance between them. However, from the location of my research which adopted the interpretive framework, knowledge is a human construction based on lived experiences, and perceptions of the research participants. There is interaction with research participants, the FP teachers in the process of knowledge construction, i.e. the process of coming to know, of data generation. Thus, there was a close researcher/researched relationship. The distance between researcher and participants was minimized through focus group discussions, individual face-to-face interviews, and photo elicitation interviews in the process of data generation.

Ontological assumptions

Ontological assumptions specify that which has to be studied or known about a phenomenon under investigation. This is the nature or essence of knowledge, which influences the researcher's standpoint regarding reality. Ontological assumptions of this research were guided by the interpretive paradigm which stipulates that reality is subjective and socially constructed. Creswell (1998) states that ontological assumptions answer questions related to whether reality is external, given, objective and real or, whether it is experienced, socially constructed and subjective? What is the nature of reality? In other words, ontological assumptions enable the researcher to define their position as it relates to knowledge development or data generation. Positivists would answer the ontological questions by alluding to notions of reality being external, a 'given' and objectively real, detached, and being 'out there' in the world and awaiting acquisition (Mukeredzi 2009). Positivists believe that such knowledge, once obtained is then accounted for and expressed objectively through statistical presentations (Creswell 1998). In this study, given the interpretive ontological stance to which the study is aligned, contrary to the positivist ontological outlook, reality or knowledge is socially constructed and subjectively experienced as it emanates from human cognition and is expressed through language (Mukeredzi 2009). In other words, ontological issues focus on the essence of knowledge or the phenomena under investigation. As such, the interpretive ontology views reality here as personal and, therefore subjective and expressed through language via the thick descriptions. Concomitantly, the ontological assumptions for my study therefore view knowledge as an experientially based human construction which is co-constructed socially by the actors (research participants) and is therefore subjective**.**

Axiological assumptions

Axiology is what one values in any research. Creswell (2012) states that researchers need to make their values known in the study and actively report their values and biases as well as the value-laden nature of information gathered from the field. Further, literature from Kivunja and Kuyini (2017) viewed axiology as ethical issues that need to be considered when planning and conducting a research study. The beneficence axiology refers to the requirement that all enquiry should aim at maximizing good outcomes for a study, for humanity in general, and for the research participants (Mertens 2015). Therefore, the researcher needs to acknowledge the value-laden nature of the generated data and declare upfront their values and biases. It also implies that the research should aim at avoiding and minimizing any harm, risk or wrong that

could result during the research. Axiological assumptions thus also involve defining, evaluating and understanding concepts of right and wrong behaviour, relating to the study. Further, axiological assumptions encompass what my values are that I attribute to the different aspects of my study, the data, the participants, and the audience to which I report the results of the study. Thus, as a researcher I openly acknowledged and discussed my values that may have influenced the data collection and interpretation, especially if these went against those of my participants.

Methodological assumptions

Methodological assumptions are the key influencers of research methods in the process of inquiry. Alharahsheh and Pius (2020) state that methodological assumptions of research include the research methods, strategy, techniques related to sampling, the size of the sample selected, as well as generation and analysis techniques for the data included in the research. Further, Denzin and Lincoln (2011) purport that methodological assumptions consider how researchers approach finding out what they believe can be known and how that best fits the phenomena under inquiry. Hence, in this study these are the procedures and processes that I followed to attain an insider view of the experiences of FP teachers of their professional learning. Methodology is the theory of knowledge or more specifically the theory of knowing, how we come to know in a practical sense contrary to epistemology, which is about how we come to know philosophically (Mukeredzi 2009). Epistemology and methodology are interdependent, as Henning (2005, cited in Mukeredzi 2009: 103) puts it, "intimately related." Thus, one is the philosophy of getting to know and the other is the practice of getting to know, with epistemology being the theory of knowing while methodology is the practice of knowing.

Methodology in this context thus refers to the specific methods and techniques: interviews, focus group discussion, and photo elicitation that I employed for data generation to enable understanding the phenomenon of FP teacher professional learning. Thus, methodology relates to how the researcher practically makes the choices of research paradigm, design, approach, methods and procedures adopted in the study to gain knowledge about the research question (Aliyu *et al.* 2015). In other words, the methodological assumptions are the suppositions or conjectures related to how I would carry out the study. Having discussed the paradigmatic assumptions, next I briefly highlight the major paradigms before discussing the interpretive paradigm which was adopted for this study.

Research design

Morgan *et al.* (2017) state that a research design sets the procedure on the required data, the methods to be applied to generate and analyse data, and how all of this will answer the research questions. Thus, a research design enables planning, structuring and executing the research to maximise the trustworthiness of the findings. It is the component that gives direction, moving from the underlying paradigmatic philosophical assumptions, through the research design, to data generation, and finally the analysis. This study adopted a broad case study research design.

Case study

A case study is often used by researchers to study a person or a group of people. According to Rule and John (2011), a case study is a systematic and in-depth study of a particular case in one context. It aims to understand an individual or group of people in-depth within their own environment, as Cohen, Manion and Morrison (2018) state, to understand the reality of participants' lived experiences about a particular situation. This study sought to understand lived experiences of the professional learning of FP teachers. Yin (1984) views the case study as an intensive study about a person, or a group of people where case study data is observed at the micro level and examined within the context of its use, that is, within the situation in which the activity takes place. These FP teachers were studied in their local environment to discover and understand the phenomenon of professional learning, the processes, perspectives and worldviews of those teachers in their natural setting. In case study research, the researcher intensively investigates and explores the phenomenon thoroughly and deeply, as was the case in this case study. Specifically, my study adopted a multiple-site case study design discussed below.

Multiple-site case study design

The multiple-site case study (Yin 2018) adopted by this study was conducted in three settings: rural, urban and township. Schütze, Pulver and Harris (2017) state that a multiple-site case study allows the researcher to make replications across cases and explore differences within and between cases. I employed multiple-site case study design where, the case was FP teachers professional learning outside formal programmes, what they learn and how the learning influences their classroom practice. Multiple-site cases allowed for in-depth investigation of experiences of professional learning of individual participants, and of particular sites which enabled cross-comparisons across the cases.

Yin (2018) and Brink (2018) concur that multiple-site case study design aims to strengthen findings through wider exploration and replication of the research questions as well as theoretical evolution which enables the researcher to understand the similarities and differences of data generated from various cases, in this case from urban, rural and township schools. Further, the multiple-site case study design is viewed as stronger than single case studies due to the in-depth comparisons of the sites and from the replications. Yin (2009: 42) points out multiple-site case studies present bounded systems, in other words, the cases can be separated out for research in terms of time, place, or some physical boundaries which leads to a 'chain of evidence' from these aspects and functional interconnections of participants and their contexts. The rural, urban and township contexts in this study were investigated as separate, bounded systems.

Quintão, Andrade and Almeida (2020) posit that case boundaries include the time, and context-specific activities included in the cases and participants' characteristics. The bounded cases enabled me to create limits around each of the three contexts and I was thus able to understand participants within their given context, at the time that I met with them. This type of case study, also known as multiple experiments is hailed for its powerful theoretical replications which make results compelling and more robust due to replications, within-site and across-site comparisons (Yin 2009; 2018). Thus, from the three sites: rural, urban and township, I was able to make replications and both individual and cross-case comparisons.

Research approach

A research approach provides a strategy of action that directs the conduct of research systematically and efficiently (Mohajan 2018). In this study, the approach guided the processes and procedures undertaken to generate and analyse data to answer research questions set out in Chapter One. There are three major research approaches: the quantitative (structured) approach, the mixed methods approach, and the qualitative (unstructured) research (Creswell 2009). Quantitative research, according to Bryman (2012: 35) is a "A research strategy that emphasizes quantification in the collection and analysis of data…" Thus, quantitative research involves data that can be measured and counted. The approach often involves a large sample, the use of surveys, questionnaires or secondary data etc., and seldom requires extended fieldwork. Rahman (2020) argues that this approach has some limitations as it takes 'snapshots' of a phenomenon; it is not in-depth and overlooks 'testers' and 'test-takers' experiences as well as what they mean by something. This approach was therefore not suitable for the current study

which sought to understand experiences of professional learning from the perspective of FP teachers.

The mixed methods approach combines qualitative and quantitative methods in a single study or a programme of inquiry (Fetters and Molina-Azorin 2017). It is thus a combination of the two research approaches in a study. The mixed methods approach is often preferred for its increased validity in the findings, informing the generation of the second data set, and assisting with knowledge creation (Creswell 2002). However, given the philosophical and paradigmatic orientations and assumptions of my study which required in-depth understanding of FP teachers professional learning from their own viewpoints, the mixed methods approach was not suitable.

Qualitative approach

This study adopted the qualitative research approach. Creswell (2010: 56) asserts that "qualitative research studies are studies that engage in research probing for a deeper understanding of a phenomenon rather than to search for causal relationships." In other words, the qualitative research approach allows the researcher to probe and follow up on questions during data generation which enhances the generation of in-depth data from the perspectives of the participants. Creswell further emphasizes that using the qualitative research approach allows participants to explain and give views of their lived experiences. Given the epistemological assumptions for this study where there was reduced distance with participants and co-construction of knowledge, participants were able to explain and give details of their professional learning in the process of coming to know – of data generation.

Cohen, Manion and Morrison (2011) state that qualitative research focuses on the lived experiences of individual people. As the purpose of this study was to understand the lived experiences of the FP teachers professional learning, what they learnt and how the learning influenced classroom practice, this approach was appropriate. Qualitative research places emphasis upon exploring and understanding "…the meaning individuals or groups ascribe to a social or human problem" (Creswell 2014:4). Given the ontological assumptions for this study regarding knowledge being subjective and socially created, this enabled exploring and understanding the meanings that FP teachers ascribed to their professional learning. The qualitative approach is also often preferred due to other characteristics that include the natural

setting; the multi-modal quality/approach and enabling flexibility. These aspects are discussed in turn.

Firstly, qualitative research requires the researcher to conduct the study in the natural setting of the participants. Denzin and Lincoln (2000) claim that qualitative studies involve naturalistic and an interpretive approach, in other words "the qualitative researchers study things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them" (p. 3). In this study, I generated data from the FP teacher study participants in their schools, this being their natural setting or environment. This was also in line with the interpretive paradigm where researchers develop in-depth understanding of peoples' experiences in their natural setting (Chilisa and Preece 2005). Korstjens and Moser (2017) state that qualitative research studies minimalize the manipulation of participants' natural settings by the researcher and often opens up a process leading to rich and unexpected findings. As a researcher, I could not manipulate the participants' natural environments as I was only a visitor, therefore the data I generated was solely from the FP teachers.

Secondly, the multimodal approach of qualitative research allowed me to use the face-to-face individual interviews, the focus group discussions and the photo elicitation interviews with FP teachers in rural, urban and township schools. The value of the multimodal approach is that it requires multiple data generation tools to complement each other (Zhang *et al.* 2018); it thus reduces single method boundedness. In this case, the multimodal approach – through employing three data generation techniques – enabled the tools to complement one another as shortfalls of one method were covered by the strengths of the other, thereby significantly increasing accuracy and trustworthiness. Low and Pandya (2019) argue that producing multimodal transcripts may also lead researchers to feel that their data has been credibly and clearly mapped, with the component pieces all thoroughly accounted for. In this study, qualitative research enabled this multimodal quality. This is supported by Collini (2012) who views this process as the "fallacy of accountability," or the "belief that the process of reporting an activity in the approved form provides some guarantee that something worthwhile has been properly done" (p. 108).

Lastly, the qualitative research allows a flexible data generation process to be constructed and reconstructed to a greater extent (Maxwell 2012). In this study, qualitative approach allowed me flexibility throughout the research process. I was able to make some modifications to the structure of research questions after the first focus group discussion and first face-to-face

individual interview. Flexibility also allowed me to make some adjustments to interview times. Cohen, Manion and Morrison (2018) argue that the qualitative research approach permits flexibility which is a great attraction of this method as the time and location present fewer or no challenges, due to the great flexibility in contact times. The approach helped me to describe the procedures in conducting this research, answering questions like; What did I do? Where did I do it? When did I do it? How did I do it? Why did I do it? and with whom did I do it?

Population

Bhopal (2020) defines a population as an entire of group of people, events, objects or measurements that conform to a set of specifications. In other words, a population is a group of humans, animals or objects which share common characteristics or meet specific criteria. In this study, the population comprised 75 FP teachers in KwaZulu-Natal Province who graduated with an Advanced Certificate in Teaching (ACT) qualification from UKZN in 2014. Thus, the common characteristics shared were that all the FP teachers had obtained an ACT qualification from UKZN.

Sampling and sampling designs

Sampling is a process of selecting a representative sample of individuals from the population of interest. A sample is a representation of the population of interest which is large enough to answer the research question/s (Majid 2018). In other words, a sample refers to selected individuals who represent a population of the study, a group large enough to adequately provide answers to the key question. In this study, some of the ACT FP teachers who were teaching in rural, township and urban schools were sampled for this research. Sampling thus enabled the selection of participants for investigation from the population which the researcher was interested in, with a view to understanding that particular population. This study adopted two sampling designs, namely: convenience sampling to select the initial 40 FP teachers and purposive sampling to select the 24 study participants. These are discussed below.

Convenience sampling

Cohen, Manion and Morrison (2018) suggest that this type of sampling is sometimes called accidental or opportunity sampling which involves selecting the closest or most easily accessible individuals to serve as research participants or using those who are easily available and willing. Thus, to conveniently sample out participants, having been a tutor for ACT FP at

UKZN in 2012 and 2013, as mentioned in Chapter One, I had in my possession the original class lists in my tutor file. Thus, after obtaining Ethical Clearance (EC) from the university, I looked for these old class lists containing their telephone numbers. I then made contact through telephone, asking the FP teachers where they were teaching and if they would be willing to participate in my study. I thus, identified 40 FP teachers, employed in various schools who were eager to participate in the study. After this, I then classified them according to the contexts in which they were teaching, the three contexts being rural, urban and township. One group – the urban group – for investigation had 15 participants, while the township group had 14 and the rural group rural had 11 FP teachers. The study participants were purposively sampled from this initial convenience sample.

Purposive sampling

Purposive sampling is a non-probability sampling approach which was the overarching sampling design used for extracting study participants. Cohen, Manion and Morrison (2018) assert that purposive sampling can be used to access 'knowledgeable people' by virtue of their power, access to networks, professional roles, and experiences or expertise in order to gather in-depth data about certain issues. Thus, sampling decisions were made for the determination of obtaining the richest possible source of information in order to answer the research questions (McMillan and Schumacher 2010). I believed that the FP teachers sampled for this study were information rich as they were teaching at that level and were outside formal programmes; hence they were likely to yield rich data on the topic. Cohen, Manion and Morrison (2018) state that participants have to be knowledgeable people who have in-depth knowledge about the phenomenon under study by virtue of being professional, experienced or expertise. As such the participants were purposively selected because they were knowledgeable about the phenomenon under investigation, the professional learnings of FP teachers.

Thus, from the 40 teachers that I had selected through convenience sampling, I needed 24 participants. After classifying them according to contexts, I selected eight participants from each context on the basis of the grades that they were teaching. I sought two teachers from each of the FP Grades – Grade R, Grade 1, Grade 2 and Grade 3. Thus, I selected eight FP teachers per context. I wanted equal representation for each grade to ensure appropriate grade comparisons. In terms of rural schools, I selected teachers at schools which were approximately 350 km away from Pietermaritzburg (PMB). Among the township schools, I selected teachers who were teaching at schools at least 100 km away from Pietermaritzburg. The maximum

sample size for this study was 24 participants. Distribution of participants is reflected in Table 4.1. After selecting 24 participants for the study, I retained the remaining 16 teachers for the pilot study. Having purposively selected the 24 study participants for the focus group discussions, from this group I had to further purposively select 12 participants for the three-interview series (individual face-to-face interviews and photo elicitation interviews). This, I did after the focus group discussions as criteria would emerge therefrom.

Table 4.1: Participants sampled for the study

Contexts	Grade R	Grade 1	Grade 2	Grade 3	Total
Rural	2	2	2	2	**8**
Urban	2	2	2	2	**8**
Township	2	2	2	2	**8**
Total	**6**	**6**	**6**	**6**	**24**

Research setting

This section describes the research setting, the three contexts (rural, township and urban) from where data were generated, analysed, and explained.

Rural setting

The South African Schools Act (SASA) (1996) (Act 84 of 1996) provides for two types of schools: public, and independent. There were eight rural schools from which participants were chosen. Seven of these were public schools under Section 21 where children did not pay school fees, and one school was under Roman Catholic governance. The rural schools used in this study were about 350 kilometres from Pietermaritzburg. The schools were generally not well kept: many broken windows, and some classrooms without doors, with widespread litter. Mukeredzi (2021) laments that some rural schools are dilapidated to an extent that the picture portrayed is not enticing for those considering a teaching career or to earn a living. The atmosphere was generally not business-like as children loitered outside during learning time when they should have been in classrooms. There was generally a shortage of learning venues evidenced by overcrowded classrooms in one school where Grade One class had 65 learners.

Teachers at such schools expressed frustration from controlling many young learners in such small spaces. For example, Participant 2 Rural during Interview 2 said: *"I do not think I will get to my pension age, no, I am tired of teaching in this small classroom with 65 learners, …look I cannot walk freely, it is difficult for me to engage with learners because there is no space."* Reich *et al.* (2020) contends that the difficulties of engaging students, the sense of

professional loss and mourning as teachers work in frustrating conditions, have expanded the inequalities that confront teachers in their daily work. Marais (2016: 1) indicates that "overcrowded classrooms are unfortunately part of South African education and will remain a part of the immediate future and even for the long-term future." Such situations negatively have affected teacher professional learning.

The schools were small, their enrolments ranged from 120 to 400 learners, with between five and twelve teachers including the principals. Some of the teachers were teaching multi-grade classes. Mukeredzi (2021) noted that many rural schools in South Africa had multiple grade/multiple subject teaching assignments. Schools were generally spaced far apart, approximately 35 to 80 kilometres. Consequently, some learners walked about two hours to get to school.

The schools were generally severely under-resourced. Teaching and learning materials were in short supply and teachers struggled to deliver effective lessons. Masinire (2015) contends that the shortage of resources such as textbooks, classroom space, and professional support not only negatively affect the professional image of rural teachers but also their professional learning and development. As noted by Mukeredzi (2021), electricity and piped water were non-existent and schools depended on boreholes or rainwater harvesting. During dry seasons, councillors, parents and School Governing Bodies (SGBs) ferried water to the schools. In some schools, there were no flush toilets and children still used pit latrines. Teachers lived in nearby townships and shared transport to and from schools, which created opportunities for sharing and professional learning. While the DBE and district offices ran staff development workshops, teachers often failed to attend, as schools lacked transport funding. This hindered teacher professional learning unless they used personal resources. Nkambule *et al.* (2011) argue that, not much has changed in the rural education environment as the rate of educational progress in these areas has remained limited.

Township setting

The eight township schools where some participants worked were under Section 20 where learners paid school fees, unlike the rural schools in Section 21 where children did not pay fees. The schools were approximately 100 to 200 kilometres from Pietermaritzburg. Generally, these Township Schools were located approximately 35 kilometres from the main roads. The schools had adequate physical and material resources, enough learning and office space, and teaching

and learning materials including libraries. This promoted teacher professional learning. Some of the schools had running water and electricity, unlike the rural schools where there was no running water. While the rural schools were small (120 to 400 learners), township schools were bigger with enrolments of between 500 and 780 learners and an average staff complement of 26 teachers. Foundation Phase classes had at least two grades per level, which was different from rural schools. More teachers per grade level created opportunities for collaboration and sharing which consequently promoted professional learning.

The schools' catchment areas were close, so children did not walk long distances to school like the rural children. Teachers lived in the townships where the schools were situated which resulted in the need for limited travelling, enabled them to arrive at schools early and to leave late. This created opportunities for professional learning unlike their rural counterparts who used time commuting to and from work. Most of the parents in township communities valued their children's education and so supported school activities. Mukeredzi and Manwa (2019) indicate that good school-parent relations and support are effective in fostering teacher professional learning experiences, classroom practice and control as well as learner discipline. Unlike rural school environments, township schools had a clean outlook as they were well maintained and kept clean by the Community Works Programme (CWP), which was not the case in rural schools.

Urban setting

Eight FP teachers from urban schools were involved in this study and these schools were under the public governance and in Section 21 where all learners paid school fees like those in township schools. These urban schools were all well-resourced and had adequate facilities as well as learning and teaching materials including libraries and extra-curricular facilities. The schools were large and enrolments were quite high, ranging from 650 to 800 learners, slightly higher than in the selected township schools. The staff complement was between 18 and 25, similar to the township schools, and the schools were generally within a radius of about 10km from the Pietermaritzburg Central Business District (CBD). All the schools offered education from Grade R to Grade 7 with at least two streams per Grade level as in the township schools which was good for teacher professional learning as it allowed for discussion and consultation; a stark contrast to the rural setting in this study. The schools held regular staff development workshops and meetings which supported teacher professional learning. Parents were supportive of the schools which enhanced teacher professional learning through parents-

teacher discussions, as in the township schools, an aspect which was lacking in the rural setting. Next, I discuss how I accessed participants.

Gaining access to participants

As a researcher, it was necessary to get permission to carry out the study. Cohen, Manion and Morrison (2011) pointed out that the first stage in research involves gaining official permission to undertake one's research within the target community. Thus, for this study I first received permission first from the gatekeeper, the South African Department of Education (DoE) (see Appendix Three) which I submitted to the university in applying for Ethical Clearance. This was obtained from the Institutional Research and Ethics Committee (IREC) of the Durban University of Technology (see Appendix Two). After this, I made the preliminary telephone contact with participants, as mentioned above. After selecting the participants, it was necessary to undertake preliminary visits to the schools to meet the principals and introduce my study to the principals and the teachers, clearly highlighting what I would request of the teachers, to gain their consent and that of their principals. Although I knew these teachers, from my time as an ACT tutor before embarking on the doctoral programme, I intuitively felt that the thrust of my study required willing and keen participants who would freely share to a profound degree, their experiences, transcending sheer opinion recounts (Mukeredzi 2009). There would be no point recruiting teachers without the inherent desire and commitment to participate. Therefore, I elected to meet them face-to-face two months prior to data generation, to listen to their voices and see them directly expressing desire to participate in my study (Mukeredzi 2009).

During the school visits, I showed the principals the Ethical Clearance including DBE consent and explained the purpose of my study. I then gave them the information letter and consent form to sign (see Appendix Four). Following this, I requested to meet the teachers and explained my study in more detail than previously on the phone, then offered them a letter of information, took them through the document and then asked them to complete the consent form if they agreed to participate (see Appendix Four). It was during this visit that I also tried to get to know the participants by name, their schools, and personal details in order to familiarize with them, thereby building rapport. Furthermore, I also explained my position as a researcher and that their participation in the research was voluntary and they were free to withdraw at any time. The process of gaining consent is emphasized by McMillan and Schumacher (2006) who indicate that, when conducting research in an institution like a

university or a school, an approval for conducting the research should be obtained from the institution as well as responsible authorities, gatekeepers and the participants. This was the process that I followed, and repeated when accessing pilot participants.

Pilot study

Piloting precedes the main data generation process. A pilot study is a small-scale research project conducted before the final full-scale study (Ismail, Kinchin and Edwards 2018). It assists researchers to try out data gathering instruments and other research techniques, identify problem areas, deficiencies and decide how best to conduct the final research study (Ismail, Kinchin and Edwards 2018; Zailinawatj, Schattner and Mazza, 2006). From the 16 FP teachers who were in excess of the 24 participants, I had to select some for the pilot study. I contacted the teachers, reminded them about my study and set up appointments to visit them in their schools for the pilot study. Getting to these schools I also asked for permission from the principal, following the same process as outlined in the section on accessing participants explained above.

In this study, pilot testing of the face-to-face interview instrument was done with four FP teachers – one teacher from each of the four grades (Grade R–3) – and one focus group discussion was held with 12 participants. The individual face-to-face interviews were approximately one hour each while the focus group discussion took one hour and twenty minutes to enable adequate time for each participant to share their thoughts. These pilot participants were not used in the main study.

The individual face-to-face interview and focus group discussions schedules were piloted to establish appropriateness of anticipated time, clarity of questions and whether questions would elicit relevant data to address research questions. Hence, the pilot helped me to identify the questions which would generate similar responses, and this process also guided me to check and modify the instruments, re-phrasing them for clarity. van Teijlingen and Hundley (2001) state that the benefits of piloting the interview questions is to provide an opportunity to see it in practice and to judge its suitability, to determine whether any questions were too ambiguous or complicated and also to get feedback from the participants. After pilot interviews, I realized that some of the questions were rather difficult. With the guidance of my supervisor, I had to break them down and express them in simpler language that the FP teachers understood. I also learnt to prepare thoroughly, checking all the items I needed to use during the interviews and

focus group discussions. Although all participants had a chance to talk, I felt they were too many, and needed to work with smaller groups during focus group discussions in the main data generation. Following this, I was ready for the main data generation process which is discussed next.

Data generation

Focus group discussions, face-to-face interviews, and photo elicitation were used as data generation instruments, as reflected in Table 4.2 below.

Table 4.2: The summary of data generation for the study

Contexts	Focus Group discussions Grades R–3 (2 teachers each), 8 in total	First Individual interviews (Participants)	Second interviews (Participants)	Third interviews (Participants)	**Total interviews**
Rural	8 participants (2 FGDs)	4	4	4	**12**
Township	8 participants (2 FGDs)	4	4	4	**12**
Urban	8 participants (2 FGDs)	4	4	4	**12**
Total	**24 participants (6 FGDs)**	**12**	**12**	**12**	**36**

Data generation was carried out from 10th May 2018 to 9th February 2019, as reflected in the figure below. Each of the instrument's time frame has been highlighted.

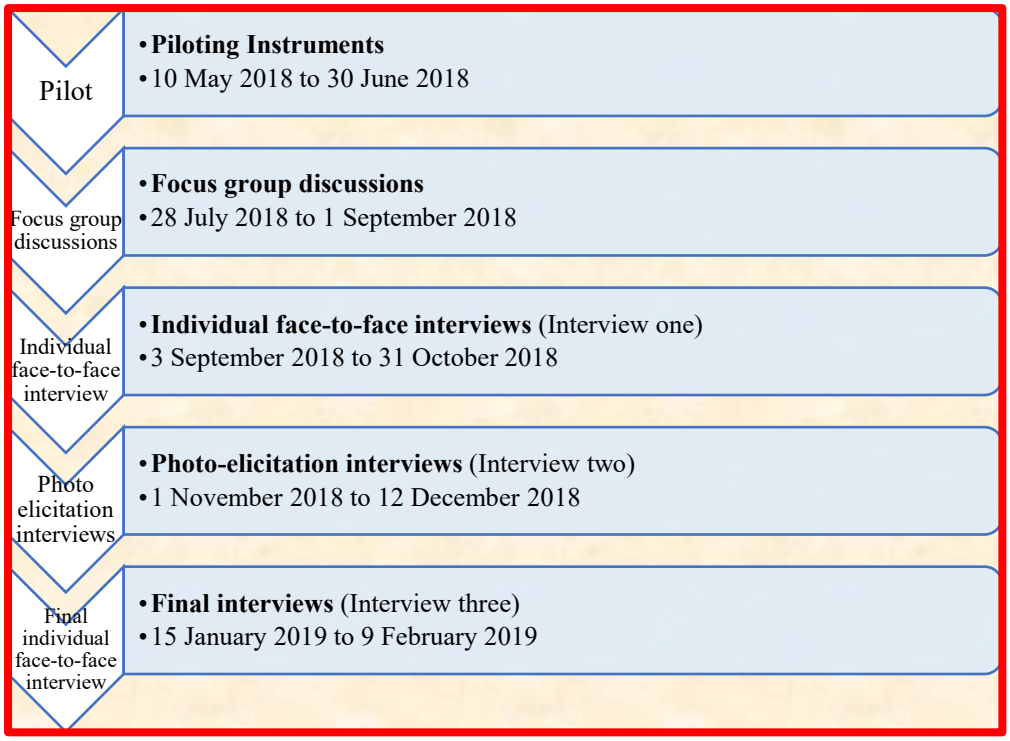

Figure 4.1: Data generation itinerary

Source: Researcher (2021)

Focus group discussions

A focus group discussion is a technique where a researcher assembles a group of individuals to discuss a specific topic, aiming to draw from the complex personal experiences, beliefs, perceptions, and attitudes of the participants through a moderated interaction (Nyumba *et al.* 2018). In this study, I engaged FP teachers in focus group discussions to discuss their professional learning experiences from their viewpoints, beliefs and understandings while I acted as the moderator. Cohen, Manion and Morrison (2011) view focus group discussions as a technique used within qualitative methodology to interview a group of people who have been working together or share common purpose. Participants were FP teachers and the common purpose that they shared was teaching FP learners, thus, they were deemed to have the similar understanding. Rossman and Rallis (2012: 189) also say, "a focus group discussion provides the opportunity for participants to react and respond to what the others have to say". Giving the FP teachers an opportunity to share their opinions and experiences of professional learning offered them the chance to respond to others' points of views and add on their own views which promoted in-depth data generation. This enabled me to generate inter-subjective data and make comparisons amongst participants.

A focus group discussion is generally used as a qualitative data generation technique to gain an in-depth understanding of social issues and it generates data from a generally small purposively selected group of individuals rather than from a larger sample of a broader population (Nyumba *et al.* 2018). In this study I sought to gain an in-depth understanding of FP teachers' professional learning. Krueger and Casey (2015) state that focus group discussions enable the researcher to generate in-depth data whereby group participants engage in discussion, reflect compare and expand on responses which generates a different type of data from interviews with a single participant due to the interaction and spontaneity of the group dialogue.

I held the focus group discussions first in order to get an opportunity to explain the whole process of data generation to the participants together. The focus group discussions were held at Durban University of Technology (DUT) because the university provided a central venue for all the participants. However, this was against the general understanding of qualitive research where data generation through interviews or focus group discussions should be conducted in participants' natural settings. On the contrary, literature surveyed (Symons *et al.* 2017) also shows that the focus group discussions can be held in different locations, depending on where the participants are recruited. After welcoming participants, I reminded them about the study, the procedure we would follow, the recording of the discussion and I also informed them about travel reimbursements and access to refreshments. This is supported by Mawn *et al.* (2016) who purport that providing refreshments and reimbursements for travel expenses are important as this demonstrates respect and value for participants' contributions.

Literature indicates that an optimum size for a focus group discussion is six to eight participants (excluding the researcher), however focus group discussions can also work effectively with as few as three and as many as 12 participants (Mishra 2016), as was the case in piloting. In the main fieldwork in this study, I had four participants in each focus group discussion from one context, which gave each participant ample time to talk about their professional learning. I selected four teachers from each context who participated in focus group discussions, one teacher per Grade (R – 3) and therefore two group meetings per context; this totalled six group meetings with the 24 participants. Having a teacher per grade in each focus group discussion enabled cross comparisons to be made of experiences across the grades.

The focus group discussions took between one hour thirty minutes and two hours each. Holding focus group discussion according to contexts made it convenient for teachers as some were

able to share transport. This is supported by Hdii and Fagroud (2018) who argue that the focus group discussions consist of an organized interview with a selected group of people who share something in common. Thus, coming from one context was a common characteristic which gave them some comfort and a sense of familiarity. Grouping participants according to contexts also enabled them to relate to each other, keep in check of each other's response and share their lived experiences related to similar environments, thereby providing in-depth data (Krueger 1994). In this study, teachers studied shared their experiences of professional learning outside the formal programmes in an enjoyable manner because they came from the same contexts which seemingly eased the discussion and enabled participants to challenge each other comfortably.

All focus group discussions were voice recorded and the groups were asked the same open-ended questions following a similar sequence. Questions had been arranged according to degree of difficulty, so this ensured building onto earlier responses. Voice recording enabled accurate capturing of what the participants were saying. Further, recording enabled me to take sparse notes while attending fully to the participants, upholding the flow of the conversation, rather than having to focus on comprehensive note taking (Mukeredzi 2016). I used open-ended questions to understand the uniqueness of participants' ways of looking at the world and their definition of the situation (Cohen, Manion and Morrison 2018). Thus, open-ended questions allowed the FP teachers to explain their professional learning experiences in detail from their perspectives without limitations. Marshall and Rossman (2014) state that open-ended questions catch richness, honesty and depth of responses which are hallmarks of credible qualitative data. The researcher does not restrict the participants to some responses but gives them options and allows them to give a variety of answers (Hdii and Fagroud 2018). Thus, participants are free to explain and elaborate on their responses.

I started by asking participants simple questions so as to encourage them to relax and to talk, slowly moving the group from known-to-unknown. I used on body language such as nodding my head to show that I was following what they were saying, which encouraged them to keep talking, while I was aware of their body language and probed further for clarity. Probing questions were used were used to motivate participants to speak more about their experiences of professional learning outside the formal programmes. Examples of these were: Could you explain further? What happened then? Did you read about that? Where did you learn that? Hence, I used a facilitative communication technique to gather rich data through probing,

following up and paraphrasing questions for further clarity and understanding. The questions in the focus group discussion schedule generally focused on eliciting data on how and what the FP teachers professionally learn and how the learning influences the classroom practice. For example: Tell me about the activities that you do in a teaching day? What do you learn from the activities? How does that help you in your teaching practice?

I also took into consideration the limitations associated with this technique of data generation. One such limitation relates to the researcher having limited control over some participants than would typically be the case with an individual face-to-face interview (Babbie 2014). To address the introvert/extrovert dynamics which emerged during the discussions, I had to re-direct some questions to individual participants, looking at them directly, trying to ensure that they responded and at the same time eliminating single participant dominance in the discussion. Before winding up the discussions, I went through the main points so that participants could verify what was said during the discussion.

Data were generated through focus group discussions and three interview series. Once the focus group discussions were completed, I thus had to sample 12 participants (four from each context) to be involved in the three-series interviews, as highlighted in the sampling section above. I explained that I needed to select two from each focus group (2 x 2 = 4 participants) to participate in individual face-to-face and photo elicitation interviews. I thus purposively selected four teachers from each context consulting my notes and the codes used as pseudonyms in the focus group discussions. The inclusion/exclusion criteria for selecting the 12 participants were determined by their openness and articulation of views, how they contributed to discussion, their readiness to respond as well as the richness of their responses. I then distributed disposable cameras to each of these 12 participants and trained them in how to take photographs, allowing them to practise on my own disposable camera.

After this I negotiated the times and dates for the individual face-to-face interviews and set appointments. Cohen, Manion and Morrison (2018: 134) assert that "if the research involves teachers as participants, propositions may have to be put to the stakeholders and conditions negotiated." Through negotiations, in this study I conducted face-to-face interviews during teachers' free periods and after classes. I had to be accommodative, and flexible to the given times to suit each particular school routine and participant. Thereafter, all participants were reimbursed for their travel expenses and given refreshments.

After each focus group discussion, I quietly reflected on the process and documented key points in my research journal while they were still fresh in my mind, before leaving the premises. Transcribing began as soon as I reached home, when I then transcribed the data, checking on my research journal as well as reflecting on my actions and any mistakes which I may have made during the discussions as well as checking whether all the questions were fully answered. Mortari (2015) argues that reflection is a crucial cognitive practice in the field of research as this helps the researcher not only to replay the practical part but also to promote critical thinking on whether the questions were fully addressed. Through these reflection processes, I discovered that participants were copying each other's daily routine procedures in explaining a typical day's activities when answering one of the questions. Thus, I had to move that question to individual face-to-face interviews.

Individual face-to-face interviews

Face-to-face interviews adopted a three-interview series approach. Seidman (1998) and Mukeredzi (2013a) concur that face-to-face interviews should involve more than a single interview to generate richer data. In this study I conducted three separate interviews with each of the selected 12 FP teachers. The three-series interview enabled respondents to reflect on what they said, creating potential for more reflection in the second and third interviews (Seidman 1998). Thus, adopting this approach helped the FP teachers to think back and reflect on what they said during the previous interview which enabled them to give more data in the next interview, thereby enhancing in-depth data generation. Mukeredzi (2009) highlights that having separate interviews locates each interview within some relevant context and at the same time minimise prolonged interview sessions. The approach also gave me an opportunity to reflect on my interview style and to refine it (Taylor and Bogdan 1984).

According to Creswell (2010: 87), "an interview is a two-way conversation in which the interviewer asks the participant questions to collect and to learn about the ideas, beliefs, views, opinions and behaviours of the participants." In this study, I met individual participants and asked them questions about their views, beliefs and experiences of their professional learning. White (2005) adds that interviews are flexible, when the participant indicates that she/he has not understood the question, the researcher can repeat and probe for more specific answers. This flexibility enabled clarifying and explaining some of the questions where it was necessary and also for getting elaborations to responses, where they were initially inadequate or unclear.

Pre-planned questions that guided the interviews contributed to the semi-structured nature of the discussion (Creswell 2014).

Interviews were guided by an interview schedule with semi-structured questions which helped me to keep the discussion focused on generating relevant data to answer the research questions. Literature surveyed (Korstjens and Moser 2017) assert that a pre-planned, semi-structured interview guide helps the researchers to be in control of and to give direction to the interview, while the participants are in control of their answers. The guide therefore was pivotal in ensuring that the discussion remained within the parameters of the study. I conducted three individual face-to-face interviews with four (4) participants from each context – one interview per grade level. In other words, I held 12 interviews in each context, a total of 36 face-to-face interviews. Individual face-to-face interviews took approximately one hour each, and all were voice recorded. I asked participants the same questions following a similar sequence. While I found interviews an effective data generation instrument in this study, Kumar (2018) argues that interviews are time-overwhelming and difficult to administer. However, I planned thoroughly, rehearsed my questions particularly for the first interview, and followed the schedule strictly except where I had to probe and follow up on questions. Further, I also had a budget in place to support my data generation.

Interview one

In preparation for the interview, I called the participants three days before and then one day before, confirming my visit to their schools. The confirmation from the participants gave me assurance that the interview was going to take place and that thorough preparations had to be done for the process. As alluded to in the section on accessing participants, on arrival, I would always announce my arrival to the principal and then be led either to the teacher's classroom or to the staffroom. Most of the individual face-to-face interviews were held after school from 12:30pm and a few from 14:00pm. As these were FP classes, we held the interviews in teachers' classrooms.

I started by welcoming them and re-explaining the focus in order to refresh their memory of the study and also explained the procedure. Thereafter, the interview commenced by following up on some of the issues raised in the focus group discussions. I then proceeded by asking general questions about their schools and teaching activities which led them into talking about their professional learning activities. I also probed further and followed up on questions to gain in-depth insight about how and what they professionally learnt within the different spaces.

Hawkins (2018) indicates that probing questions helps to generate rich data around teaching and professional learning activities which teachers had experienced over time. I adopted an open and emotionally neutral body language in order to allow the participants to contemplate their responses, talk more, and elaborate on and clarify issues while I nodded and smiled, showing my genuine interest in what they were saying. I also practised good listening: keeping quiet when participants were talking and demonstrating that I was listening from my facial expressions and verbal sounds ("Mmm hmm", nodding my head); sometimes repeating what they said word-for-word, for example, "What you're saying is..." This enabled creating an atmosphere conducive to participant engagement with the process and with the researcher (Mukeredzi 2016) and encouraged the FP teachers to keep talking and to offer more rich data.

Before winding up the interview, I went through the main points so that participants could verify their responses. Thereafter, I thanked them, and we set an appointment for the next interview.

Having given the four participants two cameras in each context during the focus group discussions, at the end of interview one I collected the cameras to pass on to the next participant during their first interview. The use of cameras was such that two participants shared one camera. When the second participant finished taking the photographs, I would return to collect the cameras for processing photographs in preparation for Interview 2.

Fox (2009) states that if the researcher is conducting more than one interview, he/she must try to make a regular arrangement, and typically do not leave gaps of more than a week between interviews. On the contrary, Seidman (1998) advises that for series interviews, the researcher should allow at least two weeks to allow for reflection and consistency. Seidman (2015) further argues that spacing of interviews depends on the structure and processes of the study, to allow participants to reconstruct and reflect upon their experiences within their contexts. Thus, in this study, interviews were held within four to six weeks of each other. My participants were dispersed particularly in rural and township schools, hence I needed to allow adequate time for the process.

Interview two: Photo elicitation

Only 12 of the 24 participants took photographs. However, one of the cameras developed problems and so the participant used my cell phone to take photographs. Each participant had about 13 photographs for the photo elicitation interview. In this study, the photographs were

only required to act as prompts for discussion during the photo elicitation interview. As such they are not inserted in this document.

Photo elicitation is an approach using photographs or other forms of visual media in an interview to liven up verbal discussion which stimulates data generation (Glaw *et al.* 2017). In this study, participants took photographs which depicted different professional learning activities they were involved in within their contexts. This second interview, like the first, was held with individual participants in their schools where they discussed their professional learning prompted by photographs they had taken. When participants engage in photography for data generation it gives them the freedom to choose what they want to talk about in the interview, which makes them more relaxed because they know what the content of the interview will be (Glaw *et al.* 2017). Therefore, at this second interview I asked each participant to select eight photographs depicting their professional learning experiences and used them as prompts for discussion.

I gave participants time to arrange their photographs from the most important to the least important, and this gave them an opportunity to 'flash back' to and rethink those events that depicted their professional learning experiences. Thereafter, I asked them to discuss the photograph they liked most, as this helped them to lead the interview and feel confident in discussing their professional learning experiences. I asked them leading questions such as: Why did you choose this photograph? How did you learn from what you were doing in this photograph? What did you learn through this activity? How does this learning help you in your teaching? Literature shows that "photographs can show depth and details that cannot be conveyed through words" (Guest, Namey and Mitchell 2013: 239). Thus, the photographs stimulated the discussion and allowed for a full and engaged flow of the interview unlike in interviews based on verbal discussion alone. Participants were prompted to talk more, as they took control of the discussion, articulating their feelings and opinions about their professional learning experiences as those sentiments were directed at something tangible made by themselves (Mukeredzi 2013a). Thus, they discussed their teaching life as they saw it, in relation to their professional learning which stimulated more direct involvement in the research process.

The use of photo-elicitation was also helpful, given that what photographs showed actually existed in front of the camera for at least the time it took to capture the scene (Mukeredzi 2009). Thus, these photographs illustrated situations as they really were and how they were

experienced given that photographs are representations and, not constructions of reality; this stimulated generation of rich data. Photographs also gave the participants an opportunity to articulate their thoughts and lived experiences (Mitchell 2008) of their professional learning as depicted in their photographs. In this study, when participants took the photographs, they captured different professional learning activities or events as they happened, which enabled easy recall of their professional learning experiences.

Interview three

Interview three was meant to enable FP teachers to reflect on their professional learning and identify ways in which the learning influenced their classroom practice. These interviews were also held in participants' schools and like the other interviews, they took approximately 60 minutes and were audio recorded. I started the interview by following up and addressing some issues from previous interviews that required additional discussions. I asked participants questions like: How do you feel about your professional learning as a qualified teacher? What did you learn from all these professional learning activities? Fox (2009) states that the third interview is crucial as it helps the interviewer to understand participants' responses, whether they have made sense of the experiences that they have and how it relates to aspects of their lives. In this study, interview three was vital for generating data on the participants' professional learning experiences and how the learning influences practice.

In this study, I transcribed data of the preceding interview before the subsequent interview to understand the patterns, identify pointers to aspects that needed following up, and also to enable member checking. I would also email transcribed data to my supervisor to check whether I was covering all the research questions and probing adequately. I received informative feedback which helped me to generate rich data. I did this throughout my data generation journey.

Member checking

I asked participants to 'member check' in subsequent interviews. After the interview, I gave the participant an opportunity to check their transcripts and verify the accuracy of data capturing. This enhanced study credibility and eliminated researcher bias (Lietz and Zayas 2010; Creswell 2012). I gave the participants time to refresh and thereafter engaged in member checking of transcribed and printed scripts. However, I was not able to engage in member checking with 12 of the participants who took part only in focus group discussions and did not take part in individual face-to-face interviews. Thus, member checking was done by the 12 teachers (out of 24) who participated in the three-series interviews. Informed by Yin (2014)

and Candela (2019) who view member checking as a process in which the researcher asks one or some of the participants in the study to check the accuracy of the transcriptions, I felt that the member checking done by 12 of the 24 participants was adequate. Further, given that participants were satisfied that I had captured their responses accurately, and in some cases, expanded their responses, there appeared to be no pressing need to seek out input from the remaining participants of focus group discussions.

Challenges encountered during the research journey

Like any study of this magnitude, my work was not without challenges. Three challenges that I met in this research journey related to participants arriving late, increases in transport fees over time and gaining access to participants. First, during piloting participants arrived late for the focus group discussion, so late that I almost cancelled as none of them were responding to phone calls. Given that this was the first activity in the process of data generation, I was scared and frustrated. However, eventually they started arriving. During the actual data generation, I tried to minimize such problems by contacting participants three days earlier, then a day before and kept contact through SMSes and WhatsApp messages.

The second challenge emanated from increased transport costs which required me to adjust my personal budget to accommodate transport reimbursements as the university would only refund research fees at the end of the programme, at which time all expenses would be compiled.

Third, gaining access from school principals presented another challenge. Cohen, Manion and Morrison (2018: 535) point out "Gaining access and permission may be difficult …" and can delay fieldwork. During my visits to the 24 schools, one of the principals first refused to see me despite my having made a formal appointment beforehand. When I arrived at reception and asked to see the principal, the secretary returned from the principal's office telling me she did not want to see me. Shocked and puzzled, I sat down to try and understand whether I had heard properly. After a few minutes, I decided to leave, thanked the secretary and started walking towards the door. At that point the principal popped out of her office and said, "I will give you a minute to explain yourself." Cohen, Manion and Morrison (2018) argue that the hosts have different views about researchers and their own intentions, therefore researchers can influence such perceptions by presenting themselves as humble, professional, competent, accommodating, and trustworthy. In this case, I remained polite, and composed, explained myself clearly, and produced my Ethical Clearance and all the consent letters which were

printed in colour to show authenticity. It was only after this that I was allowed to meet the teacher. However, literature shows that school leaders refuse for their teachers to take part in educational research because some schools lack capacity to participate, or the study may require too much work for the teachers (Brevik 2013). Therefore, it is important for researchers to be very clear about their study and be able to clearly articulate it and their expectations of the participants before they set out to visit the stakeholders.

Data analysis

In this study I adopted manual data analysis notwithstanding the many qualitative data analysis computer software packages available on the market. This choice was necessitated by a desire to immerse myself in my data and gain a deeper understanding of both my data and the manual open coding analysis approach that I adopted. Mukeredzi (2009: 360) saw data analysis as "searching for patterns and ideas that help to explain the existence of those patterns". Practically it involves systematically examining and arranging field notes, interview scripts and all the materials gathered in the field, then organising and synthesising them into manageable units.

Analysis was in two stages: in-field data analysis and post-data generation analysis. In-field data analysis commenced when I started data generation and continued until the end of the fieldwork. This enabled me to identify patterns that were emerging from the data, while prompting reflection on what was occurring in the field in answer to questions like: what the participants did, how, why, when and with whom they did it (Mukeredzi 2009). These reflective questions prompted thoughts, feelings, impressions, insights, and observations of what happened during the fieldwork. Mortari (2015) indicates that reflections are vital for connecting incidents occurring during data generation phase.

The second stage, the post-data generation analysis constituted the main data analysis phase that I undertook after completing all fieldwork and capturing all data to enable a full picture to emerge (Mukeredzi 2009). I pooled all data from the six focus group discussions and the three interview-series with all 12 participants for analysis. This helped to avoid repetition and the omission of data. This post-data generation analysis which adopted open coding was accomplished in eight steps that are presented in Figure 4.2. An open coding approach is defined as data analysis which focuses on the coding, categorization and conceptualization of phenomena through an intensive analysis of the data (Vollstedt and Rezat 2019). In other

words, open coding is an interpretive process by which raw research data are systematically divided into chunks, coded, categorised and then clustered into themes.

Surveyed literature (Zucker 2021) defines open coding as an essential methodological tool for qualitative data analysis that was introduced in grounded theory research. This approach enabled a deeper engagement with and understanding of data. In reviewed literature by all Terry *et al.* (2017: 17), they assert that "good open coding is inclusive, as it involves identifying and labelling all segments of interest and relevance within the data set, and everything that is of relevance within those segments." This allowed the classification of possible categories and themes according to the research questions and the central phenomenon to ensure accurate alignment. Although open coding is an important tool for qualitative data analysis, it is very time consuming and tedious (Khandkar 2009). However, notwithstanding that the process is draining and time consuming, it was worthwhile as it provided me great learning that would not have been the case if computer software had been used.

Step one: Transcriptions

I transcribed audio records verbatim, in other words I took the words of the participants as they were. According to Hornby (2010:1587), to transcribe is to "record thoughts, speech or data in a written form." In this study I transcribed the audio-recorded data into typed prose (transcripts) verbatim, including sounds such as 'umm', 'Ohh' and 'yahh'. It took me three to five hours to transcribe a 45 to 90-minute interview. Azevedo *et al.* (2017) state that transcribing requires a significant amount of time, it is boring, and also a physically exhausting activity. In this study, during transcribing I used a room with good light, sat on a comfortable chair at a table, and took regular breaks to avoid getting tired; this improved my concentration and attention.

I transcribed the audio-recordings myself in order to be personally involved and immersed in my data; to familiarize myself with it and understand the patterns emerging before the actual data analysis. This also ensured participants' privacy. This is supported by Skukauskaite (2014: 770) who argues that when researchers passed off the transcription of audio recordings as a "chore to be done by others, they missed out on the kinds of understandings that developed as tapes [audio files] are transcribed, and as well, they lose control over some of the transcription decisions made". After each focus group discussion and face-to-face interview, I immediately transcribed the audio recordings into typed scripts and printed them. The printing of the transcripts was necessary because I wanted to take them to the participants for member

checking. I then created a folder on my computer where I saved all the transcribed documents and emailed them to myself and to the supervisor. This was done to ensure that I had all the typed scripts safe and secure in case of any unforeseen circumstances. This idea correlates with Hanior, Achor and Gire (2018) who state that information record keeping is made easy through using electronic gadgets to enhance efficiency and later retrieval. After transcribing, I had to familiarize myself with my data.

Step two: Familiarization with data

Erlingsson and Brysiewicz (2017) view familiarization with data as an important step in the data analysis process where researchers need to read and re-read the transcribed interviews while keeping the purpose of the study in focus. In this study, I also read the transcribed interviews several times and listened to the audio recordings tapes repeatedly to understand what participants said, to determine categories and themes that were emerging and to record them. Open coding enabled me to compare/contrast the categories and themes and to repeat the process with each transcript.

As I was familiarizing myself with the data, I listened carefully and looked out for patterns and meaning in each interview transcript, while making notes that I would use when I began data analysis (Braun and Clarke 2006, 2012; Terry *et al.* 2017). I also engaged in bracketing and reduction of my own biases by keeping an open mind and focusing on the purpose of the research in order to enter the unique world of the participants interviewed (Cohen, Manion and Morrison 2018). I further wrote down expressions which were in line with the research questions and asked myself questions such as: What are the quotes saying in relation to the research questions? What does that mean to me? What exactly did the participants learn? What is the key message I am getting from the quote? All these questions helped in understanding and familiarizing myself with the data, and in understanding the emerging themes before the actual data analysis. Thorne (2000) points out that a researcher's capacity to think deeply is a pre-requisite in data analysis. I was guided by the reflective questions indicated above which prompted critical thought during the analysis process.

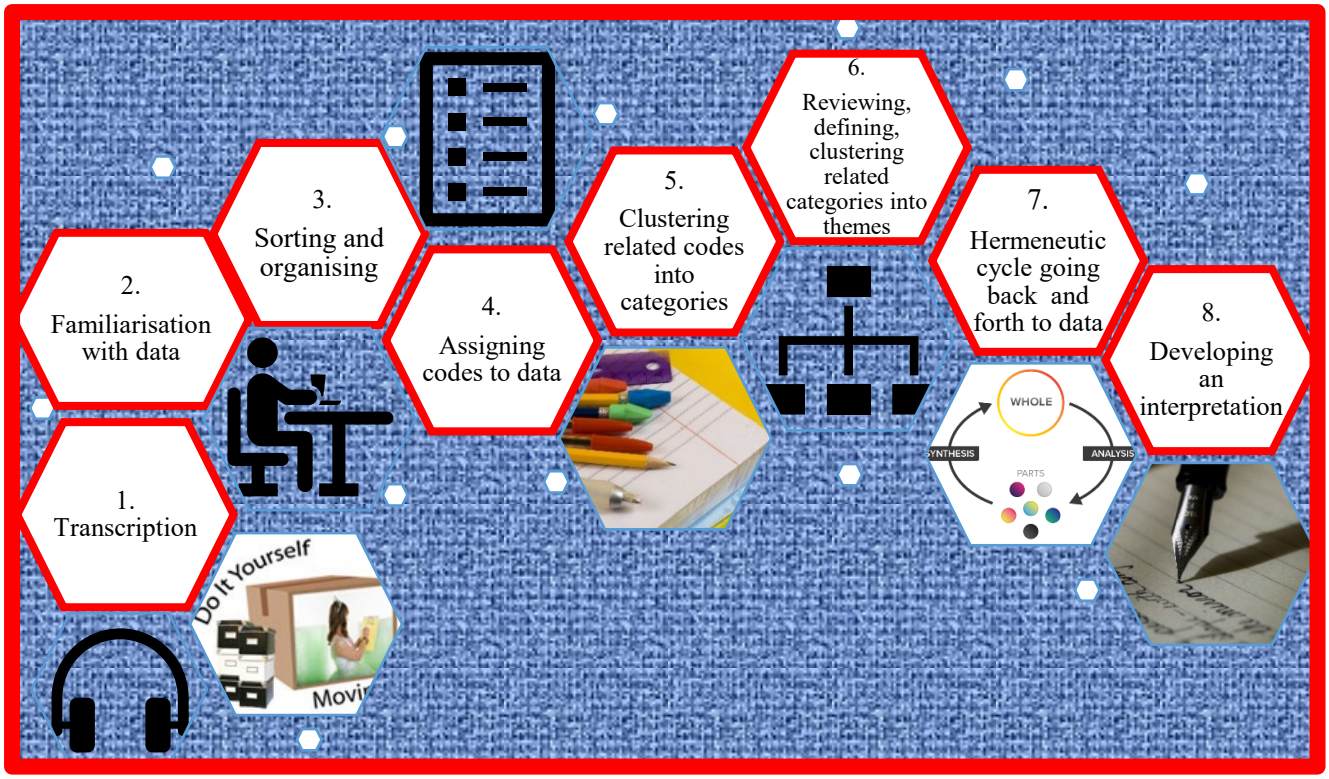

Figure 4.2: Steps followed in data analysis

Source: Researcher (2021)

Step three: Sorting and organizing data

At this stage, I sorted and organized data according to the research questions. This was to ensure that I had adequate data that addressed each research question. Notwithstanding that, I pooled the data across the participants during the process of sorting and organising according to the research questions, I kept the data from the different contexts separate under each question and marked the data in such a way that I could easily identify data from a particular context. Organizing and sorting data under each research question enables the researcher to see the similar patterns and themes at a glance (Cohen, Manion and Morrison 2018). Sorting and organizing data according to the research questions helped in managing and accessing data quickly during the subsequent data analysis processes. Keeping data in small units saved time as I did not always need to go back to the chunk of data but could go straight to the organized data for the specific theme and research question. Erlingsson and Brysiewicz (2017) indicate that when sorting and organising data, answers to questions of social and theoretical significance are obtained. Thus, keeping research purpose and questions clearly in focus, helped me divide up the text into units of meaning.

Step four: Assigning codes to data

A code is defined as "a textual description of the semantic boundaries of a theme or component of a theme" (Guest, Namey and Mitchell 2013: 50) or a label that is attached to a phrase or a short sentence of the data being analysed (Blair, Imai and Zhou 2015). For this reason, coding is also known as indexing. First, I marked different key words, and phrases with highlighters according to the research questions. Second, I then assigned names (codes) next to the data using participants' real words. After this, I wrote the codes in a column adjacent to the sorted and organized data. I then went through identified codes and clustered similar codes to formulate main topics, different topics, and outliers. Literature reviewed, Farooq (2018) purports that during the coding process the researcher could experience him/herself gradually becoming immersed in the world of the texts (interview transcripts) as s/he moves from the parts (codes and themes) to the whole (interview transcript) and back again. I went back to the transcripts, comparing with the sorted and organized data to check whether I had captured all the codes. The highlighting of codes and the initial names assigned helped me to quickly extract appropriate quotes during the write up process. I sent all the identified codes to my supervisor to identify any discrepancies, errors, or omissions to enhance dependability.

Step five: Clustering related codes into categories

The coded data were revised and cross-checked before I clustered assigned codes into categories. I had to look at text data and segmented the sentences into categories and labelled each category with a term or phrase which emerged from the participants' actual words. I thus re-examined every single transcription in order to answer the question, 'what is this about?' (Creswell 2008). Alase (2017) asserts that this stage is described as the category phase which allow the researchers to narrow down to extremely few words the responses of the participants. I did as Alase suggested, which helped me to capture the central meaning of the participants' 'lived experiences' in one or two words. This open coding helped me to reduce the bulky data into smaller pieces of purposeful data as I looked only for the underlying meanings.

Step six: Review, redefine and cluster related categories into themes

The sixth stage of data analysis was to review, refine and cluster related categories into themes. Mukeredzi (2017) views this as a stage of scrutinizing categories of relevant meaning into themes and attaching names to those themes. I, therefore, compared the codes and categories in order to examine and check for relationships between them and whether these themes were

representing the entire data. This process helped me to formulate names and clear definitions of each theme. I further clustered various themes together under one major theme and thus created sub-themes. One of the benefits of using open coding data analysis is its flexibility. The researcher can identify themes, revise, and modify them in various ways, and the data will still deliver rich and detailed results (Braun and Clarke 2012). Therefore, in this study I managed to capture the FP teachers' experiences of professional learning, the domains of knowledge they gained and how their learning influenced their classroom practice.

In Table 4.3: below I illustrate how I coded, categorized, and developed themes and sub-themes.

Table 4.3: Research Question One: What is the nature of professional learning practices of FP teachers outside formal programmes?

Data	Codes	Categories	Theme
-She used to come to me and explain and sometimes ma'am came to my classroom to demonstrate	Explain Demonstrate	Collaboration	Collegial collaboration
-we work as a team and discuss what you are going to teach each week, we just sit down together and make a lesson plan for the grade, each grade had three classes.	Teamwork Discuss Plan together	Collaboration	
-I learn from my principal she acts as my mentor. She mentors me, as to how I go about teaching, planning and behaving as a professional teacher.	Mentoring by principal	Collaboration	

Step seven: Hermeneutic cycle

Hermeneutics is often described as a theory of both understanding and interpretation (Robinson and Kerr 2015) as it offers researchers both a 'philosophy of understanding' and a 'science of textual interpretation' (Walshaw and Duncan 2015). At this stage I went back to the themes, reviewing, comparing, and contrasting them, checking for overlaps, and scrutinising the themes again for distinctness to decide whether splitting or combining was necessary, scrutinized the themes again for understanding, continuously moving back and forth throughout the codes, and

categories, to see whether they were all represented in the themes. This is supported by Peat, Rodriguez and Smith (2019) who argue that the hermeneutic underpinnings of interpretative phenomenological analysis (IPA) offer researchers the opportunity to go beyond surface level description of findings, to offer insightful interpretative accounts of the lived experiences of participants. Reviewed literature (Cohen, Manion and Morisson. 2000; Flick 2006) suggest that at this stage there is need for involvement of an independent judge for verification of categories of relevant meaning, relevant to research questions. I therefore engaged my supervisors to verify and confirm themes to help in eliminating errors, and discrepancies, and to identify any omissions.

Step eight: Development of an interpretation

The final stage of data analysis involved the conceptualization of themes and development of a narrative (Holmlund, Lesseig and Slavit 2018). I had to step back to reflect and examine the emerged themes from each of the three contexts in order to identify the differences and similarities. This guided me to organize the narrative that depicted the experiences of FP teachers outside the formal programmes, what they learnt and how the learning influenced their teaching. In my write up, I had to insert evidence of the themes from the data by including sufficient data extracts from focus group discussions, individual face-to-face interviews, and photo elicitation to illustrate the prevalence of the theme using vivid examples of quotes which captured the essence of the points I wanted to demonstrate (Bekker and Clark 2018). I reported data thematically according to research questions in order to avoid repetition of similar quotes, patterns and themes from the participants across the three contexts. These themes were then linked and connected to the concepts and principles drawn from the theoretical frameworks and literature reviewed which helped me to provide a rich and thick description (Tracy 2010) of FP teachers' experiences of professional learning and how the learning influences their classroom practice. Finally, I started writing up, using headings and sub-headings from the themes and sub-themes and arranged the text according to the points considered salient.

Having discussed data generation and analysis, next I discuss the limitations of the study.

Limitations of the study

Every study has its own limitations. It is the duty of the researcher to acknowledge them and explain how they were addressed in the study to minimize their impact on the findings. Two

major limitations were identified in this study related to: being a former tutor of the study participants and methodological limitations.

First, being a former tutor to the participants may have influenced some of the FP teachers to respond to interview questions in ways they thought would please me and not reflect their actual professional learning, what they learn and how the learning influenced their practice. This made me take time throughout data generation to explain that what I wanted was their honest and true opinions and experiences. I also tried to shift my role from being their previous tutor to become a researcher, maintaining an open mind, and bracketing my own notions and opinions about teacher professional learning, thereby minimising bias (Mukeredzi 2009) and regulating any power dynamics (Mukeredzi 2009). In the first meeting, I explained the nature of the study and its purpose in order to be taken seriously and be respected for my role as a researcher.

Second, methodological limitations also played a part as findings of this study may not be generalised given the methodological choices. The philosophical and methodological orientations including sampling designs and sample size, removed generalizability of the findings. However, the strength of these research findings rests in the multiple-site case study design adopted for the study. Furthermore, a description of the research settings was provided, including thick descriptions in reporting findings to allow readers to make decisions on transferability and applicability of findings to other similar settings. Thus, transferability of the findings of this study may be applicable to similar specific groups, contexts, communities and /or circumstances (Creswell 2008) and the decision will be left to the researcher or reader to confirm findings based on their understanding and experiences. The next section discusses ways of enhancing rigour that were adopted in this study.

Trustworthiness of the study

Lietz and Zayas (2010) suggest that qualitative studies should not focus on validity and reliability but should achieve ‘trustworthiness’. Qualitative studies do not look at internal and external validity because they have no hypothesis, but only focus on whether the study is trustworthy. In this study, trustworthiness was addressed through the four aspects that work together: credibility, transferability, auditability, and confirmability (Lietz and Zayas 2010).

Credibility

Credibility refers to the degree to which a study's findings represent the meanings of the research participants (Lietz and Zayas 2010). Drisko (1997: 191) suggests that qualitative "interpretations must be authentic and accurate to the descriptions of the primary participants." As a researcher I maintained an open mind, bracketed my own opinions, experiences, and knowledge to reduce the risk of bias and avoid in any way influencing the direction of the conversation ensuring that discussion remained on topic. On a similar note, it was important for me to obtain confirmation from participants about the accuracy of transcriptions through member checking. As defined above, member checking involves one or more participants in the study checking the accuracy of the account (Creswell 2012).

In this study, to enhance quality of the qualitative data all the transcripts were taken to participants to check whether the data transcribed were exactly what they had said in the interview. Padgett (2008) adds that, to achieve credibility, qualitative research must manage the risk of research reactivity and bias. Research reactivity refers to the potential for the researcher or the study procedures to exert an impact on the participants, thereby changing the findings of the study (Lietz and Zayas 2010). Qualitative researchers may seek to achieve credibility, by trying to make their data gathering efforts less conspicuous and intrusive without deceiving the respondents. The audio-recorder should not attract participants' attention to such an extent that they end up making statements only to impress the researcher. However, the audio recorders were placed on top of the table because participants themselves requested that the recorder be on the table so that their voices could be captured accurately.

In this study, individual face-to-face interviews and focus group discussions were audio-recorded. This is in line with Bertram and Christiansen (2014: 189) who argue that "using an audio-recording device to record interviews verbatim, means that the transcripts are more accurate than if the researcher simply jots down notes during the interview." Credibility was thus also enhanced through use of the audio recorder which captured accurate raw data. In addition, qualitative researchers manage the threat of researcher bias as they seek to achieve credibility by engaging in reflexivity and seek to build self-awareness regarding their own influence on the research project (Drisko 1997). I kept a research journal where I reflected on the process and documented all that had happened after every interview in my researcher diary. I also engaged in dialogues with other doctoral studies peers and had continual consultation with my supervisor, all of which promoted reflexivity.

Transferability

Transferability refers to the degree to which the findings are applicable or useful to theory, practice and future research (Lietz and Zayas 2010). On a similar note, Sandelowski (1986) refers to transferability as 'fittingness' suggesting that it has to do with the degree to which findings fit situations outside of the study. Devers (1999: 1165) suggests that for findings to achieve transferability, "...context must be similar. Therefore, it is the role of the researcher to identify key aspects of the context from which the findings emerge and the extent to which they may be applicable to other contexts." Transferability in this study was left to the reader, bearing in mind that this would be based on the understanding that findings were limited only to specific similar groups, contexts, communities and/or circumstances. The thick descriptions that were provided in describing the research sites, and also in presenting the findings, assisted in enhancing transferability for this study. Tracy (2010) explains that the purpose of thick description in achieving transferability involves providing enough detail to the readers and requires the researcher to be accountable for the complex specificity and circumstantiality of their data. Hence, I used thick descriptions to discuss research contexts, to present data and findings of the study.

Auditability

Lietz and Zayas (2010) identify the third criteria for ensuring trustworthiness as auditability. Auditability is the degree to which research procedures are documented, allowing someone outside the project to follow and critique the research process (Padgett 2008). Some strategies used to increase auditability include keeping an audit trail and engaging in peer debriefing. An audit trail is a written account of the research process that includes reporting what occurred throughout the research project along with a demonstration of reflexivity (Lietz and Zayas 2010), which I referred to above. I checked, reflected, and added to my brief notes while everything was still fresh in my mind. Literature surveyed, Pandey and Patnaik (2014) argue that it is important to keep an audit trail to show a transparent description of the research steps taken from the beginning of a research study to the development and reporting of findings. In this study, keeping of an audit trail also assisted me to rectify mistakes, improve interviewing processes and time management skills throughout the journey of data generation and the development of the research report. I consulted with my supervisor frequently and sent her all interview transcripts, as previously mentioned, in order to get clear guidance which assisted me to keep focused.

Additionally, a qualitative researcher requires to seek support from other professionals willing to provide scholarly guidance, like members of academic staff, peers, the postgraduate dissertation committee and the department in charge (Anney 2014). In this study, I repeatedly presented my research to my year group and research supervisors at different stages of the study from proposal development to data analysis, getting feedback which prompted reflection on my work from which I learnt. This also enhanced auditability. In addition, I continuously consulted and obtained guidance from my supervisor through MS teams meetings, individually and as a group where we presented our research and received guidance. Peer debriefing sessions for students without our lecturers/supervisors also helped to enhance auditability through the WhatsApp platform. Peer debriefing helps to stimulate reflexivity, allowing researchers to become informed on the effects of their socio-political position (Lietz, Langer and Furman 2006). Thus, by discussing research decisions, procedures and getting important feedback can be provided and enhances the quality of the research (Anney 2014).

Confirmability

Confirmability is the ability of others to confirm or corroborate the findings (Lietz and Zayas 2010). In the same vein, Heery *et al.* (2019) vowed those verbatim quotes enhanced the confirmability of the findings, whereas Roman *et al.* (2020) indicate that, "each of the main themes was defined and illustrated with representative quotes from the participants" (p. 405). In this study, I demonstrated that the findings and data were clearly from participants by taking direct quotations of what the participants said, inserting and discussing them in the presentation of findings. Further, I derived themes and sub-themes from the key findings in data generated. Research shows that confirmability is influenced by reducing or at a minimum explaining any researcher influence on the results by applying and meeting standards of rigour such as triangulation, member checking, and peer debriefing (Johnson, Adkins and Chauvin 2020). In this study, triangulation, member checking, and peer debriefing were all incorporated to enhance confirmability.

This section has discussed trustworthiness as a way of enhancing rigour, the following section focuses on ethical issues that were considered throughout the study.

Ethical issues

Weis (2019) argues that solid up-front ethics that are approved by institutional advisory boards are crucial to ensure that researchers have done their best to identify possible ethical issues

prior to data generation and offer deontological safeguards. In this study, I first sought permission from the Durban University Technology to undertake this research as highlighted under the heading 'gaining access' above. Cohen, Manion and Morrison (2018) state that ethics is concerned with that which is right and wrong, good and bad, what the researcher ought and ought not to do in their research. In other words, ethical issues and considerations are not a once-and-for-all matter which can be valued before the research begins or when the proposal is submitted to an ethics committee, and then forgotten (Brooks, te Riele and Maguire 2014) but rather, they are continuously followed throughout the whole research process and beyond. Hence, as a researcher I tried to exercise professional competence, being responsible for each step which I took during the research process and in the write up. I also respected participants' dignity, rights, diversity (Cohen, Manion and Morrison 2018) and their positions as teachers. The teachers studied were of different races (Indian and black), so I had to plan accordingly to respect their culture and religions, for example, Shembe people and Muslim people do not eat all kinds of food, which was taken into account when providing refreshments.

I adopted three principles of ethical consideration which are prescribed by Hammersley and Traianou (2012); minimization of harm; respect for autonomy (signing of informed consent); and the protection of privacy (addressing confidentiality and anonymity). With regard to minimization of harm, I tried to ensure that the teachers studied were not exposed to any harm: physical, trauma, and social infliction of pain during data generation. In relation to autonomy, I gave the participants time to read the letter of information and informed consent forms and went through each point with them to help them clearly understand before signing. Grady *et al.* (2017) state that participants should sign informed consent after the researcher has explained the purpose of the study, benefits, or dangers of their participation so that they understand before they make informed and voluntary decisions to participate in the study. It was up to the participants to weigh any risk or harm and benefits of participating in the research and decide whether to take part. However, all participants expressed willingness to participate in my study by signing the consent letters. Further, I explained that the audio recordings would be saved on a memory stick, printed scripts, and photographs would be collected and handed over to my supervisor for safe keeping and kept in locked storage, with all the items destroyed after five years. Files saved on my laptop would be saved in a password-protected folder for five years. This is in line with literature surveyed where Cohen, Manion and Morrison (2018) posit that files, audio data, questionnaires, video data, computer files must be stored during the research and destroyed sometime thereafter.

Lastly, the confidentiality, anonymity and the rights of the individuals were maintained and upheld. I explained to participants that they could at any stage withdraw their consent and participation without prejudice, if they so wished. Pseudonyms/ codes like Participant 1 Rural, Participant 8 Township, Participant 17 Urban, etc. were used to ensure confidentiality and anonymity. Significant findings emanating the research process would be made available to all participants on request.

Chapter summary

This chapter presented the research design and methodology within the interpretive research paradigm, multiple-sited case study research design and the qualitative approach which framed and guided the study. It also outlined the sampling process and the sample for the study. The data generation process – through a multi-modal approach in which data were generated using focus group discussions, individual face-to-face interviews and photo elicitation interviews – was also described. The challenges experienced during the research were also highlighted, followed by the steps of data analysis and the limitations of the study. The last section discussed how rigour was enhanced through aspects of trustworthiness: credibility, transferability, auditability, and confirmability. Ethical issues considered throughout the research were then presented and elaborated on.

The next chapter focuses on data presentation and analysis addressing Research Question One about the nature of professional learning.

CHAPTER FIVE
DATA PRESENTATION AND ANALYSIS: THE NATURE OF PROFESSIONAL LEARNING PRACTICES THAT FP TEACHERS ENGAGE IN OUTSIDE FORMAL PROGRAMMES

Introduction

This study focused on how FP teachers professionally learn outside formal programmes. To address this aim, data were generated from three contexts; rural, township and urban schools through focus group discussions, and three interview series complemented by photo elicitation interviews. These data were analysed deductively through open coding to identify themes and sub-themes.

The previous chapter provided the details of the research design and methodology. This chapter presents and analyses data addressing the Research Question One. The data from all sources and participants are pooled, presented, and discussed together as responses were broadly similar. The major finding from the data is that FP teachers learnt through collaboration and interaction within two major sites: restricted (the school) and wider professional sites (outside the school).

This study focused on one key question: How do FP teachers professionally learn outside the formal programmes and how does the learning influence their classroom practice?

This key question was addressed through the following sub-questions:

1. What is the nature of professional learning practices that FP teachers engage in outside formal programmes?
2. What domains of professional knowledge do the teachers gain?
3. In what ways does the professional learning influence their teaching practice?

In this study, Research Question One constitutes a chapter due to its length, and Research Questions Two and Three form two sections in Chapter Six. This chapter discusses and presents the findings that address Research Question One about how the FP teachers professionally learn. In discussing and presenting findings, I draw on theoretical frameworks which were discussed in Chapter Three: Biggs' (2003) deep and surface learning strategies and Illeris' (2009) types of learning – cumulative (or mechanical); accommodative; assimilative and transformative to unpack and understand the data and explain my findings to show how they

may be viewed through a theoretical lens. In addition to theories, I also draw on literature reviewed in Chapter Two to illustrate any concurrences or contradictions with my findings.

The first section discusses teacher professional learning within the restricted site (in the school). The chapter then proceeds to discuss the nature of professional learning within wider professional sites (outside the school). In the discussion, to enhance anonymity and confidentiality, participants are identified by codes, for example, Participant 1, 2, 3 etc.
Table 5.1 below summarises participants' responses (see full version in Appendix Five) regarding the nature of their professional learning reported during focus group discussions, individual face-to-face interviews, and photo-elicitation interviews.

Table 5.1: Number of times that participants' comments suggested the nature of learning

	Strategy		**Type of Learning**			
	Deep learning	**Surface learning**	**Assimilative learning**	**Accommodative learning**	**Cumulative learning**	**Transformative learning**
Total number of participants	24	9	20	7	9	3

Table 5.2: Themes and sub-themes

Themes	**Sub-themes**	**Total number of teachers**
Classroom practice	Lesson planning	24
	Lesson delivery	21
	Use of teaching resources	16
	Use of teaching strategies	24
	Classroom management	13
	Assessment of learners' work	19
Reflection	-	20
Records of practice	-	23
Research and reading	-	24
School meetings	Phase meetings	19
	Grade meetings	14
	Whole school meetings	24

Key: Codes (Participant 1 to 24) were used for confidentiality.

Drawing from Table 5.1 above and Appendix Five, the nature of learning practices of the majority (24) of FP teachers was assimilative (20) through a deep professional learning strategy. A surface professional learning strategy, as well as cumulative and accommodative types of professional learning were engaged in by less than half the participants. In addition, very few teachers (3) gave responses that suggested transformative professional learning. This may imply that in as much as these teachers engaged in deep assimilative professional learning, they did not experience transformation given that this type of learning – also known as expansive or transitional learning (Larkin 2019; Engeström 2004) – is about personality changes, or changes in the organisation of the 'self' (Mukeredzi, Bertram and Christiansen 2018). Drawing on Illeris' (2009) theoretical framework, this kind of learning implies a break orientation that typically occurs as the result of a crisis-like situation caused by challenges experienced as urgent and unavoidable, making it necessary to change oneself in order to progress. Thus, given that it was deep assimilative professional learning, teachers' learning involved adding on to what they already knew, adding to their existing schemas, and as such they did not experience any crisis-like situations which required profound personality changes.

Teacher professional learning within the school

Regarding professional learning within the school, five themes emerged, as reflected in Table 5.2, namely professional learning through classroom practice; reflection; records of practice; research and reading; and through meetings. Each theme and its related sub-themes are discussed, analysed and concluded in the respective order. The full version of Table 5.2 can be found in Appendix 6.

Professional learning through classroom practice

In this study, classroom practice is understood as involving all activities, processes and engagements undertaken by FP teachers that benefit and enhance learner learning in the classroom. Seven sub-themes emerged around classroom practice: professional learning through lesson planning; lesson delivery; teaching resources; teaching strategies, classroom management and assessment of learners' work. These are illustrated in Figure 5.1 and discussed in turn below.

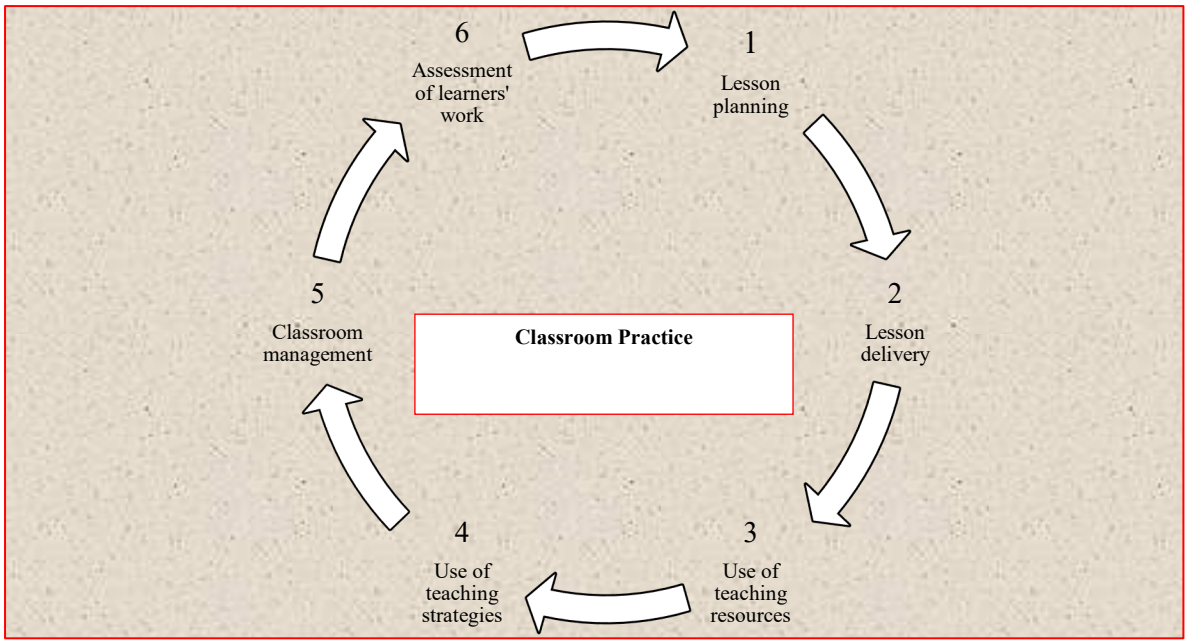

Figure 5.1: How Foundation Phase teachers learnt through Classroom Practice

Source: Researcher (2021)

Professional learning through lesson planning

Lesson planning is the process of devising a lesson plot or schedule where a teacher gives a detailed explanation of what will is going to happen during the lesson. According to Cox (2019) a lesson plan is a detailed, step-by-step guide that outlines the teacher's aims for what the learners will achieve during the lesson and how they will achieve it. On the same note, it also encompasses the preparation of materials and all resources required for lesson delivery in the classroom. In this study, the FP teachers professionally learnt through preparation for their lessons either individually or collaboratively. Kelchtermans (2011) pointed out that collaboration is a descriptive term which refers to cooperative actions, while collegiality refers to the quality of the relationships amongst staff members within a school. In this study, collaboration was highlighted when teachers shared expertise around their classroom practice to enhance teaching and learning. Collaborative lesson preparation was confirmed by Participant 20 from an urban school during a focus group discussion who said:

> *It is a big school, it was very good ma'am, I learnt how to write a lesson plan from others and it's helpful. I learnt through preparing lesson plans together with others. We use teamwork so that we learn to prepare what we are going to teach for the whole week. We sit down and make lesson plans for the grade; each grade has three classes.* (Participant 20 Urban)

Professional learning through lesson planning reflected above was through engagement in collaborative planning with colleagues in developing weekly lessons. Learning was from developing lessons for the grade. Another participant during focus group discussion also explained:

> *We plan together, yes. We come up with different ideas, we share and then we select [the] best ideas. From that I learnt to select good ideas from what we share...* (Participant 13 Township)

The response reflects that the FP teachers professionally learnt through joint lesson preparation. Joint planning also involves reflection as teachers assess their own responses, consult, and keep each other in check which brings about adopting a deep learning strategy. Participant 20 further stated that she learnt to prepare lessons in advance, this would enable maybe pre-playing the lessons in her mind or making some modifications before teaching the lesson. This is in line with literature consulted (Mukeredzi 2013b: 97) which indicates that planning enables thorough preparation and through "self-interrogating, stepping back, 'pre-playing' and pre-evaluating classroom practice, teachers develop new knowledge and beliefs on content, pedagogy and student learning." This implies that the teachers engaged in learning through Biggs' (2003) deep professional learning strategy through lesson preparation and planning, sharing, and learning critical ideas with and from colleagues during this process. However, from Illeris (2009) the nature of this learning was assimilative given, that these teachers already knew how to plan but they were sharing ideas to add on to the existing schemas. Furthermore, collaborative planning for the grade implies that the FP teachers wanted their learners to learn the same content.

Other teachers worked on their own, for example Participant 4 from a rural school said during an individual interview, "I learnt a new practice, after the children have left, I start doing my preparation for the next day". Thus, Participant 4 professionally learnt to do lesson plans after the learners had left so that she could concentrate and be able to pre-play the lesson. Preparing lesson plans beforehand might also have helped her to ensure that teaching materials were in place for the lesson to be taught the following day. It also gave the participant time to analyse how all the teaching materials and content linked together to make it a reality in the classroom. This finding supports literature surveyed, (Ashcraft 2014: 1) which claims that "Lesson planning is at the heart of being an effective teacher." This FP teacher, therefore, reflects Biggs' (2003) use of the deep professional learning strategy during advanced lesson preparation as

this allowed the participant to interact and synthesise content, a process which enhanced their understanding of concepts to be taught. Again, this kind of learning from Illeris' (2009) theory would be viewed as accommodative learning as the participant experienced a new practice through lesson preparation. On the other hand, Participant 17 from an urban school explained the nature of their learning in a focus group discussion as follows:

> *Ok, I learnt to prepare my work beforehand. When the transport [has] dropped me, I go to the office to sign [in] after which I proceed to my classroom to prepare for the lesson, I then do photocopies in the morning before teaching can start.* (Participant 17 Urban)

Participant 17 Urban, like Participant 1 Rural above, professionally learnt through classroom practice preparing for lessons beforehand. This finding supports Jansen (2017), consulted in literature, who argues that a teacher with lesson plans becomes more confident because s/he has gathered all information and teaching resources beforehand. Thus, this teachers' response displays Biggs' (2003) deep professional learning strategy given that they would have time to analyse and evaluate the lesson plans beforehand. It also implies that the participant engaged in assimilative learning (Illeris 2009) given that they were previously able to develop a lesson plan, advance planning added a new approach.

However, Okurut (2012) consulted in literature, reports that teachers who reside outside the schools often face problems related to late arrival and early departure which may impact negatively on planning, teaching, and learning time. While Participant 17 Urban suggested early arrival ("when transport [has] dropped me") it appears she lived outside the school community. She, however, further talked about signing in, an indication of some professional practice. This supports Mampane (2013) who reveals that signing in the time book indicates the late arrivals and early departure times which helps principals to control and monitor the educators' movements, thereby ensuring adequate teaching time.

At another rural school, one participant in Interview 2 explained her professional learning through lesson preparation and planning. She commented:

> *I learnt how to prepare detailed lesson plans, that is, in your lesson plan, you mention the details like you will use groupwork. If you are teaching sounds of the letters in [on] that day for example, you tell them you are, on 'g' sound, 'x' sound, 'q' sound and so on. If this is a day for writing spellings, you must write*

on the prep (the lesson plan) that they are writing spelling according to groups.
(Participant 2 Rural)

From the quote, the teacher engaged in professional learning within classroom practice through the process of developing a detailed lesson plan. According to Serdyukov and Ryan (2008) and Xiao, Surasin and Prabjandee (2020) a detailed lesson plan is a document with an in-depth description of a teacher's instructions for a particular class of learners. In a detailed lesson plan the teacher is able to add all details that would help her to teach and monitor each group according to the content (sounds) they were learning on the day. This suggests that the FP teacher professionally learnt through a deep learning strategy (Biggs 2003) as she would determine how the different lesson elements fit together to ensure effective learning; she would then closely monitor and evaluate the group learning. From Illeris (2009), this is assimilative learning as the teacher added to what she already knew.

From the discussion above, the FP teachers engaged in professional learning through lesson planning either collaboratively or individually. Foundation Phase teachers in large urban schools collaboratively experienced professional learning through joint preparation. On the contrary, rural schoolteachers professionally learnt through individual lesson planning. Most of this learning was through a deep professional learning strategy (Biggs 2003) and this was an assimilative type of learning (Illeris 2009). Some FP teachers also experienced professional learning in classroom practice through advance lesson planning and from developing detailed lesson plans. The foregoing also demonstrated that the teacher's context outside the formal programme mediated the ways of learning, for instance many classes in one grade provided opportunities for collaborative professional learning, while single class grades enabled individual professional learning. The following section discusses teacher professional learning from classroom practice through lesson delivery.

Professional learning through lesson delivery

Foundation Phase teachers indicated that they experienced professional learning through lesson delivery. Lesson delivery refers to learning activities which allow learners to understand and teachers to participate to reinforce content acquisition. According to Mukeredzi (2009; 2013) in literature, lesson delivery is simply facilitation of learning by the teacher. For some FP teachers professional learning in classroom practice was experienced through teaching

syllables for language (literacy) lessons. For example, Participant 3 from a rural school in an Interview 1 stated:

> *... teaching of syllables step by step so that all the learners can gain because in IsiZulu it is extremely difficult. If a learner does not grasp the syllables, then they do not know how to write a word.* (Participant 3 Rural)

This was also evident from comments made during Interview 2 by another participant from an urban school, who said:

> *... learning from emphasising those letters of [the] alphabet, then you identify all the vowels from there they understand it. I use their fingers to name the vowels then I start to build a word. I learn ....* (Participant 3 Urban)

Participant 7 from a rural school during focus group discussion also added:

> *I learnt from teaching them to use left fingers to say 'a, e, i, o, u' if you are writing the word umama, you must say it first u it's vowel number 5 which means I must start with u, they see m then they say umama it needs the first vowel that is a, I must write a.* (Participant 7 Rural)

The issue of learning from teaching syllables to FP learners emerged from all three data sources: individual interviews, focus group discussions and photo elicitation and research contexts. These teachers experienced professional learning through classroom practice in lesson delivery through a step-by-step method of teaching syllables to enhance learner understanding. Participants in all three contexts also indicated in focus group discussions that they emphasised teacher professional learning in teaching these FP children vowels to lay a solid foundation for later learning. Teaching them vowels was meant to benefit learners because failure to grasp syllables would hinder word formulation (and hence spelling skills).

Van Rooy and Pretorius (2013: 283) argue that "there are very few single syllable words in African languages, multi-syllable words are the norm, and it is common for early IsiZulu readers to contain 3, 4 and 5 syllable words." This implies that the FP teachers needed to professionally learn and be able to provide a strong syllable foundation, teaching them syllables step-by-step, as explained by Participant 3 above. Drawing on Illeris (2009), this indicates an assimilative type of learning, and according to Biggs (2003) this reflects a deep professional learning strategy from teaching syllables and reflecting in practice to determine whether

learners have mastered the concept before moving forward. This concurs with Blair, Rupley and Nichols (2007) in literature, who state that explicit teaching and consistency in articulation of syllables increases a learner's ability to write and read fluently. African languages are also important since they are the language of learning and teaching (LOLT) for some schools in the FP (Mbatha 2014; Plüddemann 2015).

On the other hand, Participant 1 from an urban school during Interview 1 talked of professionally learning through learners who had language barriers. She said:

> *... when I came here, I noticed that they had a barrier with English. I thus learnt to pronounce my words correctly ... and had to do it over and over again. Repetition is essential for kids [children] to catch up [on to concepts].* (Participant 1 Urban)

Classroom practice enabled teachers to professionally learn through addressing language barriers in lesson delivery. Repetition provides the practise that children need to understand new skills. Having mastered new skills, it increases their confidence and strengthens the connections in the brain that help children learn (McFarland 2015). Pronunciation is essential for clear articulation. This realisation of the communicative competence is the goal of language teaching and learning. Poor pronunciation significantly hinders language learning, which suggests that getting it right makes effective learning possible. This finding showed that Participant 1 experienced Illeris' (2009) learning by assimilation through Biggs' (2003) deep professional learning strategy as she tried to address learner language challenges. This finding supports literature surveyed, Danielson (2014) who argues that no single approach would be useful in every situation, for each set of instructional purposes, or with all individuals or groups of learners. Hence, engaging in professional learning outside the formal programmes enabled teacher learning through the choices and decisions that they made.

Another participant in a rural school also confirmed professional learning from classroom practice during lesson delivery when she commented in Interview 1:

> *For example, sometimes when I am facilitating learning in class, I used to give more help, but I learnt that sometimes one should give learners work and keep quiet, leaving the learners to use their minds. Where one finds that it is good enough, they leave it, while they help where there is a problem.* (Participant 2 Rural)

Lesson delivery seemingly brought about teacher professional learning through different ways of learning scaffolding and facilitation. Facilitation is a way of enabling learning using various strategies and approaches while making learning less difficult, assisting learners to achieve success in concepts that would be very difficult for them to accomplish by themselves. This participant indicated that she used to give as much assistance as possible. However, she learnt that she had to give children time to try on their own and only help them when necessary. This shows an attempt to break the cycle of dependence, as pointed out by Baxen and Green (1999). This teacher seemingly practised Biggs' (2003) deep professional learning strategy which, when viewed within Illeris' framework (2009) portrays some transformative type of learning in lesson delivery. From an analysis of her approaches, she realised that learners needed opportunities for trying to do activities on their own and thus she changed her approach to learning facilitation.

Participant 2 from an urban school further indicated during Interview 2 professional learning from classroom practice through collegial lesson observation when she explained:

> *…she [a colleague] taught a lesson for me to observe. I learnt a lot from the way she taught rhymes and poems, you know, storytelling, explaining to the kids, then asking them questions and when they are [were] answering they are [were] bringing more information…* (Participant 2 Urban)

This teacher professionally learnt through observing a colleague's classroom practice. Specifically, she professionally learnt through observation of a lesson on rhymes, poems, and storytelling. Observation is an important part of learning how to teach as it presents an opportunity to see a real-life teaching situation which one may then imitate. This teacher thus became aware that learning can occur from watching and observing colleagues at work. Using poems, rhymes and storytelling helps teachers to make language come alive for young learners (Watts 2016). This teacher thus experienced learning through a deep professional learning strategy (Biggs 2003) this being observing a colleague, which was categorised as assimilative learning (Illeris 2009) as this added to what she knew already. Reporting on observing a colleague teaching was an acknowledgement that one is a learner and is a sign of an openness to learning. Thus, this teacher demonstrated openness to learning (Guskey 2004).

From the discussion above, through lesson delivery the FP teachers from rural, urban and township schools professionally learnt through the use of step-by-step teaching strategies.

Findings showed that through classroom practice in lesson delivery, teachers professionally learnt through a deep professional learning strategy (Biggs 2003) which pointed to assimilative and transformative types of learning (Illeris 2009), given that this learning was by addition. These FP teachers professionally learnt from facilitating and scaffolding teaching and learning, in teaching complicated aspects of language using strategies of enhancing learner involvement. The following section focuses on teacher professional learning through the use of teaching resources.

Professional learning from teaching resources

Teaching resources refer to materials available to a teacher in class on the particular day that they are conducting a lesson (Guloba, Wokadala and Bategeka 2010). In this study, they could be charts, objects or cubes that help to mediate learning. Foundation Phase learners are still at the beginning stages of learning which include the stage that requires concrete objects. These teaching resources, the concrete objects, became a source of professional learning for these FP teachers.

For example, Participant 1 in a rural school describing her professional learning in a focus group discussion stated:

> *I realised some of them could not count. For weak learners, I learnt to go back to the basics, like using building blocks or give [giving] them counters, to count* ... (Participant 1 Rural)

Teacher professional learning took place through identifying learners who could not count and going back to basic strategies of teaching counting using blocks or counters. This finding links with Machaba (2013) who claims that by using concrete objects, learners will be able to count and identify the objects they possess. Thus, learners will understand the concept of quantity easily using counters or objects. In this case, the teacher professionally learnt in classroom practice within the school through identification of learning difficulties and then going back to basics. The finding suggests that a deep professional learning strategy was adopted in the analysis of learners' difficulties and determining what to do differently to help them (Biggs 2003). The nature of this learning related to assimilation (Illeris 2009), given that it was learning by addition.

In addition, another participant in a rural school sharing her professional learning experiences in Interview 2 said:

> *... learning from using books to take vocabulary words to put on the chart. And for the other week, I remove these ones and use the other ones from the other book.* (Participant 4 Rural)

Teacher professional learning emerged from using books, identifying, and extracting vocabulary to put on charts and this process promoted their learning through analysis. Day (2002) concurred that; to awaken a desire to read, the texts presented should ideally be as varied as possible for the learners who read them while addressing reading objectives. Thus, through making such decisions they experienced professional learning. Varied reading material not only encouraged reading, but it also encouraged a flexible approach to reading and teaching. The response above indicates that this FP teacher's learning practices related to Biggs' (2003) deep professional learning from analysis of and decision making on what to take and what to leave. This also showed that the teacher learnt by addition (Illeris 2009).

Furthermore, Participant 1 from a rural school also explained in Interview 1 that she professionally experienced learning from devising ways of using bottle tops to make learners understand, she explained:

> *I have got a box with so many lids (bottle-tops) so when we are doing Maths, I taught them that they have to go there and then put the lids in front on their desks so that when we are starting Maths it will be easy for us to add or to subtract. So, I learnt that learners understand better when we use real objects*. (Participant 1 Rural)

From this approach to teach subtraction and addition in Mathematics for better learner understanding, the teacher learnt professionally. Moore (2013) posits that deep understanding and the ability to devise and apply learning to new situations require conceptual understanding that is grounded in direct experience with concrete objects. Often when the learners are asked to bring 'things' (teaching resources) from home, the rationale behind this is to convey a better understanding of what they are going to learn, as was the case in these lessons. Hence, the FP teacher's learning involved Biggs' (2003) deep professional learning strategy as she learnt to evaluate and apply new ways of teaching learners for deeper understanding, using discarded materials. Illeris (2009) calls this learning by assimilation, where Participant 1 professionally

learnt through utilizing teaching resources to enhance deep conceptualisation of Mathematics in her learners.

Another participant from a township school also talked, during a focus group discussion, of experiencing professional learning through using resources. She stated:

> *...I learnt from using what is readily available (resources) in my teaching. When I am teaching my learners, I make use of all that material that may have been disposed of as useless: the empty boxes of Colgate [toothpaste], empty fish tins and cardboard boxes to demonstrate and to make them understand. I use all, everything, in the classroom, for example, objects, when I am presenting a lesson.* (Participant 16 Township)

Classroom practice through lesson delivery enabled teachers to professionally learn through use of teaching resources that were available to them. This kind of approach to make-do by using any of the available teaching resources called for improvisation of the readily accessible waste materials. This process of improvisation created space for analysis, reflection, and consequently professional learning. Bušljeta (2013) states that teachers are encouraged to be creative, innovative and improvise by creating some of the teaching resources from locally available materials instead of relying on purchased objects, a process which offers them professional learning. The demonstrations mentioned also expose the teacher to learning through making links between what to demonstrate and the concepts to be learnt.

This finding supports literature surveyed, Hattie (2012) who indicates that demonstration through teaching resources provides learners with experiences of real events and raises their interest and motivation. Using waste material requires analysis and evaluation first, to determine relevance of the waste items to what will be taught and learnt. Hence, teacher professional learning involved deep mastery. Biggs' (2003) indicates that where there is analysis, selection, and utilisation of real objects to enhance teaching and learning processes in the classrooms, this involves deep learning. This finding relates to Illeris' (2009) assimilative learning which happens by adding new knowledge to previously gained skills.

In relation to teaching resources, teachers professionally learnt through development and use of such resources. It appears that teachers studied in all the contexts professionally learnt through the deep learning strategy (Biggs 2003) which portrayed professional learning through

assimilation from Illeris' (2009) types of learning. Participant 3 from an urban school added in Interview 3:

> *I learnt from making a lot of charts and having to know how they will be, like which one to use for the whole week. And so, every day to use a different chart with a particular group…* (Participant 3 Urban)

Teacher professional learning through classroom practice emanated from using and developing teaching resources in the classroom. Charts (visual tools) are often used as a starting point to achieve interactive and stimulating learning environments. This links with Makwara (2015) who advises that FP teachers should always construct and use appropriate teaching resources in order to accommodate all children. Hence, the construction and use of teaching resources promoted the FP teachers' professional learning through the use of these charts with different groups when teaching language. This finding depicted assimilative learning (Illeris 2009) where their learning added to what they knew already. From Biggs' (2003) perspective, this was a deep professional learning strategy where they had to analyse and decide on appropriate charts for particular groups and particular means of learning. The next section discusses teacher professional learning through teaching strategies.

Professional learning through use of teaching strategies

Code switching

In the context of this study, teaching strategies are the methods used by FP teachers to help learners to learn the prescribed content for Grades R to Grade 3, through which they experienced some professional learning. A participant from an urban school, explaining the nature of their learning through teaching strategies, put it this way during Interview 1:

> *It was tough; …language barrier. The children didn't know English, and I couldn't speak IsiZulu. So, when I spoke, they just looked at my face, when they spoke, I just looked at them, we didn't understand each other. Until I learnt isiZulu, [I] had children that [who] help[ed] me to code switch, [and] that helped me.* (Participant 3 Urban)

Through classroom practice, the teacher professionally learnt from the realisation that learners could not speak English. In this case, the learning within the school helped the participant to professionally learn through code switching to enhance her effectiveness in teaching and

learning. Simasiku, Kasanda and Smit (2015) perceive code switching as a practice that increases academic achievement because it boosts learners' understanding, improves the way learners answer questions, and enhances teaching and learning of English as a second language. This finding supports literature surveyed (Lee 2012), which indicates that code switching brings better learning outcomes than English-only instruction among English Second Language (ESL) learners. It thus revealed that teachers whose mother tongue differed from that of learners, could have learnt the learners' language for meaningful teaching and learning to take place. In other words, outside formal programmes, FP teachers will always be forced to learn how to teach in learners' languages. From Biggs (2003) and Illeris' (2009) theories of learning the teacher engaged in a deep professional learning strategy from analysing and learning to speak IsiZulu and this type of learning was accommodative given that it was something new. However, code-switching which the teacher adopted has both strengths and weaknesses for example, if the teacher is not a native IsiZulu speaker she might not use the concepts properly. Literature sourced (Narasuman, Wali and Sadry 2019) suggests that teachers' code-switching can confuse students and consequently affects their lesson comprehension. In some cases, there may be other children in the class who might not understand IsiZulu, and such learners would not effectively learn. Effective utilisation of code switching occurs when both the teacher and learners in a particular class understand the same home language or when the teacher is sufficiently multilingual to be able to switch from one home language to the other in the process of accurate code-switching.

Whole class teaching

Participant 10 in a township school highlighted during a focus group discussion that the whole class teaching strategy had offered her professional learning:

> *Yah, I learnt from using the whole class method because I have got a lot of slow learners in my classroom that's why I use the whole class activity all the time to boost those who are slow.* (Participant 10 Township)

In this instance, classroom practice enabled the teacher to professionally learn through whole class teaching strategy. Rosenshine (1983) argues that the whole-class method allows the teacher to correct the entire group when errors are made, thereby diminishing the potential of embarrassment of individual learners who make errors. Hence, the whole class method was suitable as it helped the FP teacher to stimulate slow learners because it allowed all learners to participate while it also created space for teacher learning. This finding supports Muijs and

Reynolds (2017) who concur that the whole-class method keeps all learners involved in the lesson and teachers have the chance to monitor children' s understanding of the concepts taught. From Biggs' (2003) theory, the teacher seemed to have experienced professional learning through the deep learning strategy, while from Illeris (2009) this type of learning related to assimilation or learning by addition. However, literature consulted revealed that whole class teaching methods lead to learning through transmission of knowledge to learners which makes it difficult for shy learners to participate (Darrin 2015). This approach limits active learner participation as there is minimal teacher-learner or learner-learner interaction.

Grouping strategy

Related to the above, in a township school during Interview 1 one teacher talked about professional learning through a grouping strategy. She said:

> *I started by doing ability grouping, and then I found this difficult to [for] me, then I learnt to do the mixed ability grouping that is where [when] I saw [that] most of the learners are trying to follow.* (Participant 4 Township)

Through classroom practice this participant engaged in professional learning through different grouping strategies in their teaching and learning processes. Ability grouping is a practice that places learners into classrooms or small groups based on an initial assessment of their levels of readiness or ability (Kulik 1992), while mixed-ability grouping refers to the grouping of learners of different learning capabilities (Reese and Cox 1999). From the response above, mixed-ability grouping emerged to be effective for learners. Crawford (2017) argues that the teachers' role is to create diverse learning experiences focusing on understanding rather than memorisation. The fact that the teacher realised challenges with ability grouping and understood the effectiveness of the mixed ability grouping suggests professional learning.

Motivation of learners

Thus, teaching strategies in classroom practice promoted this FP teacher's deep professional learning from motivating learners during lesson delivery. For example, in a rural school during Interview 2, a participant explained:

> *I learnt in [about] motivating my learners. I used to buy sweets which I kept in my bag. When a learner got everything correct then I would give them a star and a sweet. I try to make them write fast and encourage them to come to school. They now [then] enjoyed coming to school.* (Participant 3 Rural)

Motivation is the act of stimulating interest in people so that they achieve their goals. This FP teacher professionally learnt from using extrinsic motivation to stimulate learners in her classroom. According to Ryan and Deci (2000: 60),

> *Extrinsic motivation is a construct that pertains whenever an activity is done in order to attain some separable outcome. Extrinsic motivation thus contrasts with intrinsic motivation, which refers to doing an activity simply for the enjoyment of the activity itself, rather than its instrumental value.*

Hence, teaching strategies in classroom practice enabled professional learning related to the value and use of extrinsic motivation to reinforce learning behaviour. With this situation the teacher was likely to devise other forms of extrinsic motivation, thereby experiencing more professional learning. From the theories, Participant 3 reflected use of the deep professional learning strategy through the application of knowledge to real classroom situations Biggs (2003). This may be viewed as assimilative learning or learning by addition as the teacher was already aware of motivation at the start (Illeris 2009).

Still on motivation, a rural school participant also talking about their professional learning from motivating learners added during Interview 2:

> *This is about motivation. I have learners' exercise books with their work, and (pointing at a photograph) look, I have stars on them. When the learner has done well, from giving him/her a star I realized that it motivates them. …sometimes put on their forehead. That keeps them motivated. They will go and show others: 'look I got a star' and I saw that other learners …will be motivated to get answers right …and get a star too.* (Participant 4 Rural)

Stiggins (2001) describes motivation as the "engine" that drives the teaching and learning process. Professional learning for this FP teacher was through motivating her learners. Therefore, extrinsic motivation seemingly became a crucial strategy for successful teacher professional learning as they realised the effect of motivation on the learners. This finding is consistent with Biggs' (2003) deep professional learning strategy as the teacher was able to analyse the situation. From Illeris' (2009) theory this was categorised learning by addition as the teacher related new ideas to previous knowledge and experiences in motivating learners.

Observing learners

Another form of teaching strategy from which FP teachers professionally learnt was observation. This was confirmed by Participant 3 in a rural school during Interview 3 where she explained how they professionally learnt from observing learners, saying:

> *I learnt by observing them on [in] how they solve problems like in Maths. They do it in different ways, sometimes the other [another] one will do it the wrong way.* (Participant 3 Rural)

Observation is a process of looking closely at someone or something or some activity. In this instance, the observation was done to identify learners' ways of learning and solving problems; this provided them space for learning. Mertova and Webster (2019) expressed that observation entails watching and writing down in a systematic way, the elements of interest in the unit of analysis. In this view, professional learning emerged from observing learners, working out the problems, monitoring their development, identifying gaps, and picking up cues which probably allowed her to take steps to address future problems where necessary (Godwin and Perkins 2013). This portrays engagement in a deep professional learning strategy (Biggs 2003) as the teacher observed, analysed, and understood the learners' ways of solving Mathematics problems.

Handwriting

Closely related to teaching strategies was the teaching of handwriting which emerged from the data. Handwriting is the art of writing letters with a writing instrument such as a pencil or a pen. According to Smith, Finn and Dowdy (1993: 194), handwriting is "the *mechanical* component of written language and it requires both motor skills and cognitive functioning." In this study, handwriting denoted writing of classwork in a way that was recommended for FP learners. This included: chalkboard handwriting and learners' handwriting in their exercise books. For instance, Participant 2 in a township school in Interview 1 said, "Yes, I have learnt in teaching handwriting because I used to write like this (pointing at an illustration of slanting handwriting), but now because its young children, I must write straight."

Kelly (2007) argued that poor handwriting, if not properly addressed, can negatively affect learning all the way through high school and beyond. Therefore, the response above demonstrates that the FP teacher engaged in professional learning through Biggs' (2003) deep learning strategy from teaching handwriting as they were able to reflect on their initial handwriting and change to appropriate handwriting suitable for FP. Handwriting in FP must be

straight while that for other grades and other teachers could be slanted handwriting. For example, Figure 5.2 below illustrates expected Grade 1 straight handwriting:

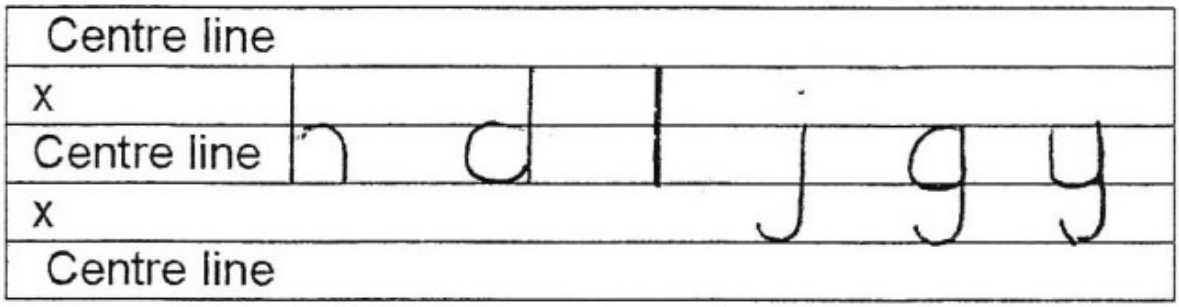

Figure 5.2: Example of Grade 1 handwriting

Source: Adapted from DBE Handwriting guide Grade R to 3 (DBE 2011b: 28)

Since teachers had to change their thinking about handwriting, moving from the slanted way they used to write to straight handwriting, some professional learning took place. Illeris (2009) calls this learning assimilation which happens when one adds on to the previous knowledge.

Also, an urban school Participant 23 in a focus group discussion echoed the professional learning from teaching handwriting saying:

> *... pre-writing is important, yes pre-writing, even in Grade 3 those who are unable to write well have to write in the pre-writing things so that they can know how to write well.* (Participant 23 Urban)

Pre-writing is a process of learning to write. The CAPS policy emphasises the pre-writing programme in Grade One, before formal writing teaching begins. This assists the development of fine and gross motor co-ordination, visual discrimination, eye-hand coordination, and body image (DBE 2011b). According to the DBE (2011b) children need to be taught the correct pencil grip, to form the letters, the correct starting points, size, shape, and direction of movement in the early years. Therefore, pre-writing is crucial in FP because it contributes to the learner's ability to hold a pencil and write given work. Through classroom practice, the teacher's professional learning emerged from understanding the value and teaching handwriting. This finding is aligned with Biggs' (2003) deep learning strategy where teachers need to utilise knowledge from evidence, inquiry and evaluation to draw conclusions from their practice. This was assimilative learning (Illeris 2009) because the teachers were simply adding to their prior knowledge. The DBE (2011b) further states that teachers are expected to guide

children to position and space letters on and between the lines and to emphasis the correct sitting position. Similarly, the findings showed that through classroom practice the FP teacher realized the value of strong handwriting skills for later learning.

Still on handwriting, Participant 2 from an urban school, emphasising their professional learning through the teaching of handwriting stated in Interview 2, "… I learnt that learners cannot write the name, although they can see the number name, they still write it upside down, and you see (pointing at the photo)". It was from this realisation that they experienced professional learning. Inverted writing is when the learner is writing upside down or from right to left. Houston (2018) and Dobbie and Askov (1995) view handwriting as a tool for personal expression of a child's growing literacy skills. Hence, this inversion needed to be corrected in the formative years – the FP. The teacher therefore professionally learnt through some of the common challenges learners had related to handwriting and from devising ways of assisting such learners with inverted handwriting challenges.

Participant 3 from an urban school added during Interview 1 how she also experienced professional learning through teaching handwriting:

> *In teaching handwriting, I noted that the fingers of some of the learners are weak so I learnt from [about] giving them more play dough to do more exercise to strengthen their fingers, or some pictures to cut.* (Participant 3 Urban)

The participant talks of professionally learning from teaching handwriting relating to developing children's fine motor skills. The fine motor skills focus on the small muscles of the body that need to be developed by teachers engaging in different activities with learners. The finding concurs with the DBE (2011b) which states that children must have enough control and co-ordination of the small muscles of their body to be able to manipulate small objects and to handle writing materials. The DBE further emphasises that small children need plenty of tasks involving the need for accuracy to develop the small muscles of their hands so that they will not experience difficulties using a pencil or writing letters and numerals. Therefore, classroom practice enabled the FP teacher to engage in Biggs' (2003) deep professional learning strategy from identifying the challenges some learners faced and then from working with them to develop their fine motor skills through different activities. This, from Illeris' (2009) types of learning was assimilative learning.

Furthermore, one participant also emphasised professional learning from teaching handwriting at an urban school when she explained during Interview 2:

> *… You see, I learnt from using the chalkboard then I say if you are writing the big [uppercase] letters, you can't start the name of the people with the small [lowercase] letter there must be capital letters first then the small letters…* (Participant 1 Urban)

From classroom practice in relation to teaching strategies the teacher professionally learnt through illustrations of writing uppercase and lowercase letters. Singh (2009: 100) points out that,

> *Charts that entice learners to read must be in good legible handwriting, displays in the classroom must be neat and with correct spelling, work on the boards has to influence learners' handwriting. One school of thought is that letters should be large, round and straight so as to show a relationship with many readers and to assist learners when they read.*

Correspondingly, this teacher demonstrates engaging in Biggs' (2003) deep learning related to handwriting by reflecting on, analysing and identifying learner challenges and then devising ways of addressing them, as portrayed by the use of the chalkboard. The type of learning portrayed is assimilative learning (Illeris 2009).

Summary of professional learning through classroom strategies

The findings above illustrated that through classroom practice the FP teachers professionally learnt through teaching strategies around code-switching, whole class teaching method, grouping strategies, motivating learners, observing learners and teaching handwriting. What emerged from this section was that deep professional learning (Biggs 2003) was engaged in with the type of learning being mainly assimilation with accommodation (Illeris 2009). The findings above emerged from all three contexts during focus group discussions, photo-elicitation, and individual interviews. The section below discusses teacher professional learning through classroom management.

Professional learning through classroom management

Classroom management is a process of controlling and organising the teaching processes so that children learn effectively, and the classes run smoothly. Larrivee (2005: vi) defined it thus:

"classroom management is a critical ingredient in the three-way mix of effective teaching strategies, which includes meaningful content, powerful teaching strategies, and an organizational structure to support productive learning." In this study, classroom management refers to techniques and skills that FP teachers use to keep learners focused on tasks during teaching and learning time.

Calling learners by their names

The FP teachers explained a variety of ways of classroom management from where they experienced professional learning. For example, Participant 18 from an urban school put it this way in a focus group discussion:

> *Eeeh, I have learnt that if there are learners that are making [a] noise in the classroom, you do not have to shout, for them to keep quiet. No, you must look at one learner and then say for example, "Ruth, stop talking". ...you also make [a] noise when you say "hey, shush stop talking!"* (Participant 18 Urban)

Through classroom management, the teacher professionally learnt to control learners, showing them that they were aware and calling them by name. Kim and Lee (2011) state that teachers' careful attention to each child's name is critical to build a supportive environment and children develop sense of self and be accountable for their responsibilities. Discipline's "most typical current meaning seems to be most associated with the notion of bringing children into line" (Skiba and Peterson 2003: 66). Hence, discipline can be viewed as a way of controlling learners to behave according to stipulated rules and how teachers achieve that is often determined by norms about how children learn, grow, and develop. From Biggs' (2003) theory one needs to engage with the task in an appropriate and meaningful manner for deeper understanding, in other words engage in deep learning strategy. However, given that the teacher was aware of discipline, professional learning in this case was assimilative (Illeris 2009).

Disciplining learners

It emerged that participants engaged in professional learning from employing different class management strategies. For example, one participant in a rural school explained her professional learning saying during a focus group discussion:

> *I learnt that if you want to discipline the child, you must not discipline the child in front of others, maybe you must call the child alone and talk to her or him [then] [he or] she will not do it again.* (Participant 8 Rural)

Participant 1 from an urban school in Interview 1 also indicated her professional learning from classroom management when she said, “Umm, I learnt from classroom management how to handle difficult children.”

For Participant 1 like Participant 8 above, classroom management enabled these FP teachers to professionally learn from disciplining and handling difficult learners. Mehta (2016) explains that difficult children are learners who are rude, disrespectful and lack self-discipline. It emerged that Participant 8 professionally learnt through disciplining learners privately while Participant 1 learnt to handle difficult learners. From Biggs’ (2003) theory, these teachers developed a deep understanding of dealing with complex discipline issues and they discovered new skills for handling difficult learners. The type of learning depicted here was assimilative which occurs by addition to earlier experienced practices (Illeris 2009). This is in line with Sullivan, Cleary and Sullivan (2003) who argue that there is a link between teacher practice and how they treat their students, which is expressed through their classroom management behaviours.

Handling difficult learners

Participant 2 in a township school, in Interview 3, added how she also experienced professional learning through classroom management:

> *I am using classroom rules. That is the first thing I learnt to do at the beginning of the year because when they know these rules, they are easy to control. The rules helped me to keep my class disciplined.* (Participant 2 Township)

The teacher engaged in professional learning through classroom management. This participant professionally learnt from teaching classroom rules to learners. The use of classroom rules assisted the teacher and learners with discipline and self-control. Alter and Haydon (2017) argue that classroom rules are identified as an integral part of effective classroom management as they are relatively simple to implement and focus on preventing challenging behaviours before they occur. From Biggs’ (2003) theory, the teacher showed that she practised a deep professional learning strategy which was assimilative in nature (Illeris 2009).

Summary of professional learning through classroom management

The findings highlighted that most of the FP teachers in all the three contexts engaged professional learning practices through three forms of classroom management: calling learners by their names, disciplining, and handling difficult learners. What emerged most was the

adoption of Biggs' (2003) deep professional learning strategy and assimilative type of learning (Illeris 2009). The following section discusses teacher professional learning through the assessment of learners' work.

Professional learning through assessment of learners' work

Assessment of learners' work also emerged under classroom practice as a source of teacher professional learning. Assessment involves giving feedback on learners' work which can take the form of marking written work, scoring a presentation or assessing knowledge of phonics. Pujiawati (2019) defines assessment as a general term which includes all methods used to evaluate children's progress, abilities, knowledge, understanding, motivation, and attitudes towards learning.

Assessing learners' work and assessment procedures

In this study, the FP teachers professionally learnt through the use of a variety of assessment methods to evaluate the learning progress of learners. A participant in a rural school during Interview 3 confirmed professional learning through assessment saying:

> *Yes, assessment, we learn … before learners write, we send it (the assessment) to the principal to see if it is right to assess this after teaching, whether it is right to assess the learners with this [these] type of questions.* (Participant 1 Rural)

According to South African Certification Council (SAFEST 2003: 11) moderation can be defined as "a quality assurance process of ensuring the validity of the assessment instruments, fairness of the assessment processes and reliability of the assessment decisions by all assessors, according to agreed standards." In this case, Participant 1's assessment tasks were moderated before administration. The process offered her professional learning through moderation of those tasks and the principal's comments on the questions. Moderation of tasks helped to eliminate errors, and the moderator made comments and modifications where necessary, exposing the originator to reflect on comments and modifications leading to learning. Therefore, this prompted teacher professional learning through Biggs' (2003) deep learning strategy around assessment tasks from comments, reflection, and analysis after the principal's moderation. The type of learning, according to Illeris (2009), was assimilative.

Moderation of tasks

Forehand (2010: 2) defines Bloom's Taxonomy as a "multi-tiered model of classifying thinking according to six cognitive levels of complexity." From the quote above, the teacher suggests an awareness of Bloom's taxonomy as she mentioned 'types' of questions. Understanding of Bloom's Taxonomy assists teachers to learn through inclusion of lower-level questions which required lower order thinking skills and higher order level questions which required critical thinking skills. These decisions brought about professional learning.

Still on assessment, Participant 12 in a township school explained during a focus group discussion that she experienced professional learning through *Jika iMfundo*:

> *The other thing in Jika iMfundo is that, …eh, in order to finish marking in time, all the learners in the classroom are going to write: date, name, then numbers – 1 up to number 5 in Maths or IsiZulu. Then they are all going to write number 1 (the first question), when they write, start from one group to mark, then ask whether everyone has finished. Once all are finished with the first question, we then move on to number two. No one is going to be left alone at number one, and that makes things easier, yes, you can also finish marking with them.* (Participant 12 Township)

Jika iMfundo was a new curriculum launched in 2018 for FP and fully implemented across all other Phases in 2019 to complement CAPS (DBE 2015). Classroom practice related to *Jika iMfundo* thus promoted professional learning through marking learners' work group by group and moving with all learners. From the response, the participant shows that she engaged in Biggs' (2003) deep professional learning strategy given that she was able to identify an approach which did not leave any learner behind and helped her to manage her marking. The nature of learning through this policy addition was by accommodation (Illeris 2009) because *Jika iMfundo* was a new curriculum which teachers were learning individually in their contexts.

Similarly, Participant 2 in a rural school, in Interview 2, confirmed professional leaning through assessment when she explained:

> *I learnt from marking the work as learners are busy writing, like Mathematics; I was moving from desk to desk, seeing individual learner problems. I tell them my instructions as well as class rules. My instruction is that if you finish the work raise your hand, then I know who [is] are fast [and] who are [is] slow,*

> *can go to them and help them. It is easy to move from one desk to another, and it pushed them to work. After finishing the work, I write the corrections.* (Participant 2 Rural)

Similar sentiments also emerged in the township context during focus group discussions where Participant 9 explained her professional learning by saying:

> *I learnt from marking, you must collect the books and mark later. In this case, you will see if this learner has got a problem, you can see the problem…* (Participant 9 Township)

These responses above suggest that the FP teacher professionally learnt by marking learners' work, moving from desk-to-desk monitoring and scaffolding their learning. Thus, marking fostered professional learning and the teacher was able to identify challenges of particular learners, give on-the-spot guidance and devise workable approaches for different learners. Participant 9 collects the books and marks them later while Participant 2 mentioned close monitoring and offering on-the-spot remediation, guidance and writing corrections. This also offered professional learning through handling diversity. Kavlu (2016) propounds that when teachers carefully monitor learners' work, they can provide scaffolding on the learning. Concomitantly, the nature of this strategy of professional learning related to Biggs' (2003) deep professional learning as she showed the ability to identify learner capabilities, progress and give feedback. Viewed against Illeris' (2009) types of learning this deep professional learning was assimilative in nature. On-the-spot remediation is when the teacher observes the learner, identifies the error and provide immediate correction (Mbatha 2018). This strategy assisted the teacher to pinpoint and rectify problems as the learners worked. The rural FP teacher therefore recognised the advantages of marking in class as the learners were writing rather than taking the work home to mark.

Summary of professional learning through assessment of learners' work

The discussion above indicates that through assessment, FP teachers professionally learnt through new ways of assessing learners, assessment procedures, and through moderation of learner tasks according to Bloom's taxonomy. Drawing on Biggs (2003), some of the FP teachers engaged in a deep professional learning strategy and the learning related to assimilation and accommodation (Illeris 2009) from assessment. This was most common in

rural and township contexts. The next section discusses teacher professional learning through reflection.

Professional learning through reflection

Reflection refers to a way of critically thinking about and re-playing an experience (Mukeredzi 2013). In this study, reflection denotes a situation where the FP teachers thought about, re-played, and analysed their teaching and learning experiences and practices and how they could do it differently the next time to improve learners' understanding. Hence, learning through reflection is derived more from reflecting on or contemplating the experience rather than from the experience itself (Mukeredzi 2015; Masinga 2012).

Reflection on lesson delivery

Professional learning through reflection was illustrated by Participant 3 in a rural school during Interview 1, who said:

> *The reflection helps me a lot because it helps to know how the lesson went when I was teaching the children. It's where I rate myself as a teacher. Where did I go wrong and what did I do right? Then I learn from modifying and changing the methods of teaching.* (Participant 3 Rural)

This was also confirmed by another participant from an urban school during the focus group discussion who explained:

> *We do reflection, and I see who is getting it right, and then how many who (sic) got it wrong. I learnt from my reflections that if most of the children got it wrong you must know that something went wrong with your teaching, then you use a different method.* (Participant 20 Urban)

This teacher realised professional learning through reflection. The participant, therefore, professionally learnt through reflection by critically analysing her lessons. Schon (1987: 68) refers to it as "reflection-on–action". From the response, the process (of reflection-on-action) involves looking back on what transpired during the lesson, including identifying the failures or weaknesses during the lesson. Learning emanates from developing better ways of doing something the next time to improve or uphold the good. Kelly (2006) calls this kind of learning a 'constructive process' which involves internalisation of experiences through reflection to contribute to gaining knowledge in practice. Therefore, the quotes from the teachers suggest

that reflection offered space for teacher professional learning. Reflection implies the use of a deep professional learning strategy (Biggs 2003) where the teachers think about and replay their practice.

In addition, Participant 2 from an urban school in Interview 1 mentioned experiencing professional learning from reflection, saying, "…what I learnt is that reflection enables a replay of matter taught and how it could as well be taught differently to help student learning and content delivery."

This participant, like participants 3 and 20 above also experienced professional learning from reflection, thinking back and determining how to teach differently in the future. de Klerk, Eggen and Veldkamp (2014) argued that the practice of professional reflection requires teachers to have the capacity to focus on their own teaching and to identify problems in their own practice; this, in turn, requires an existing level of professional knowledge. Through reflection, the teacher engaged in Biggs' (2003) deep professional learning strategy as she learnt through the synthesis and evaluation of her teaching. From Illeris' (2009) theory, this was assimilation as the participant would add to what she already knew about children's learning and lesson delivery through reflection on her teaching practices. Kolnik (2010) views reflection as a way of gaining skills and knowledge on a regular basis through the teachers' daily activities or encounters within their environments, i.e. the classrooms.

Reflection through learner behaviour and classroom management

On the same note, Participant 1 in Interview 2 also talked about professional learning from reflection. She explained:

> *We must always reflect after every lesson we conduct. In our Jika iMfundo trackers, I learnt to write how the kids [children] behaved in that lesson, and whether all the work got finished. If it was not, what will I do to cover that work [must be recorded].* (Participant 1 Township)

The participants engaged in professional learning through reflection on lessons taught, in particular on learner learning behaviour and their completion of work. A tracker is a reflective journal where the teachers jot down their reflections after teaching each lesson. It also helps the teacher to keep pace with the time requirements and content coverage. As alluded to under professional learning through assessments of learners' work, *Jika iMfundo* was a new curriculum launched by the DoE to complement the CAPS document. The finding above is in

line with de Klerk (2014) who asserts that, teachers' reflections on their lessons on a weekly basis helps them to identify what went well, what did not go well and what needed to be done differently.

Teachers' reflections are intended to promote teacher professional learning by developing their capacity to think about what and how learning could have happened in the lesson to help improve or uphold the good performance in subsequent lessons. Biggs and Tang (2007) stress that if the FP teachers complete the trackers or reflective journals without comprehending in detail the needs of children, this might result in surface learning. Drawing on Illeris (2009), this is cumulative learning where the teacher completes the tracker without full comprehension, without providing the background and context of the work. The earlier evidence suggesting reflection as being embedded in all teacher activities alluded to before points to the presence of deep professional learning.

Summary on professional learning through reflection

The discussion above revealed that the FP teachers in this study engaged in professional learning through reflection on their experiences related to lesson delivery, learner behaviour and classroom management. It emerged that the teachers engaged in both deep professional learning and surface learning strategies (Biggs 2003) and the learning was both assimilative and cumulative (Illeris 2009). Reflection emerged as a topic in focus group discussions, individual interviews and photo-elicitation interviews and from participants across all three contexts. The following section discusses teacher professional learning through records of practice.

Professional learning through records of practice

The use of CAPS document

Records of practice are the official documents which were used by teachers for teaching and learning practice. The official records of practice in this study were: Curriculum Assessment Policy Statement (CAPS), work schedule, mark book, class register, and time book. From the data generated, it emerged that most participants experienced professional learning through these records of practice. This was confirmed by Participant 2 from a rural school during a focus group discussion who explained, "I learnt from … following [the] CAPS document in delivering lessons". Similarly, Participant 4 in a rural school in Interview 2 pointed out that:

> *I learnt from the CAPS document, because it guides us as to where to start when we teach learners from January up until November. ...the CAPS document specifies what you must do with your learners and the activity that you should also do.* (Participant 4 Rural)

The participants engaged in professional learning from using the CAPS document during teaching and learning processes. The CAPS is a South African national curriculum document for Grade R–12. This comprehensive curriculum policy replaced the Subject and Learning Area Statements (SLAS), Learning Programme Guidelines (LPG) and Subject Assessment Guidelines (SAG) for all the subjects in 2011 (DBE 2011a). The SLAS, the LPG and the SAG formed the components of the then curriculum called the National Curriculum Statement (NCS) which was repealed in 2011 and replaced by CAPS. The CAPS document offers teachers detailed guidelines of what topic to teach, when to teach it and assess this on a grade-by-grade and subject-by-subject basis. It also provides detailed week-by-week planning for teachers to follow. In other education systems this could be called the school syllabus or scheme of work.

The teachers described above seem to have adopted Biggs' (2003) deep professional learning strategy as the participants interacted vigorously with the official record of practice, the CAPS document for understanding what, where and when to teach. This type of engagement is related to assimilative learning as the new knowledge in the CAPS was linked with the previously existing schema (Illeris 2009).

The use of attendance register

Another record of practice emerged as having offered space for professional learning. Participant 4 from the urban school during Interview 3 stated, "When I am recording marks, I am learning about the child, if she is improving or dropping." The quote reflects that the teacher professionally learnt from analysing learners' marks. Professional learning is effective when it helps teachers to evaluate their own learners' performance and address changes needed in teaching and learning in their schools (Hirsh 2009). This process leads to the evaluation of materials and methods, and reflection and consequently brings about professional learning. Haney (2020) states that record-keeping supports teaching decisions and illustrates learners' progress and educational achievement.

Records of marks

In this study, records of practice offered professional learning spaces for FP teachers through recording marks in mark books from School Based Assessments (SBA), class tests and

examinations (formal assessment tasks) and diagnostic tests. These records may help the teachers to reflect and self-evaluate their materials and methods and consequently learn from the evaluation and reflection process. In a situation where learners are underperforming, the FP teachers might offer remediation, and for the 'highflyers' extension work should be made available. Such activities offered the FP teachers professional learning within the school. Thus, this was a deep professional learning strategy involved in recording, analysing and checking learners' marks and progress through an assimilative learning process. Shumbayaonda and Maringe (2000) concur that progress records assist the teacher in preparing and planning future teaching and learning processes.

Furthermore, one participant in a rural school in a focus group discussion echoed professional learning from marking the class register saying:

> *The importance of the class register is to check if the learner is attending the class. I learnt to mark it accurately because it helps to see if the learner has many absentees [absences] and make a follow up on that learner.* (Participant 7 Rural)

This was also confirmed by Participant 3 in urban schools in Interview 3 who put it this way:

> *You see who is absent, who is at school regularly, who is staying away, and if you see the child is missing for too many days, we used to phone the parents to find out what's going on. You start learning whether there is a pattern that's going on.* (Participant 3 Urban)

Participant 3 urban, like Participant 7 rural engaged in professional learning through marking the register. The findings suggest that these FP teachers engaged in professional learning from monitoring and following up on learner absenteeism. Attending school regularly is crucial for the learners to complete the educational curriculum and benefit from school experience. When learners are absent on a regular basis, they miss learning and risk failure. While this marking of registers appeared to have involved a surface learning strategy, according to Biggs (2003), these teachers may have adopted a deep professional learning strategy in identification and application of school rules and principles in handling learners' absenteeism. This was thus assimilation or learning by adding on (Illeris 2009).

The DoE (2009) states that inaccurate marking of the register might have legal implications for the school and must therefore be done accurately. Such implications could include, issues of accountability should anything happen to the learner outside the school when the register recorded their presence. Thus, records should always be accurate. It is therefore important for the school to monitor learners' regular attendance, to show interest in every learner's welfare and to remain alert to problems that might affect their attendance. The FP teachers in this study professionally learnt through marking the register accurately and from involving the parents or guardians if the learner was always absent.

Modise (2015) argues that the most significant thing a child can do to attain academic success is to minimise or avoid absenteeism. Hence, it was vital for teachers to mark the register correctly to ensure tracking of learner attendance and in the process, they experienced some professional learning. The DoE (2009) states that a class teacher who believes that a learner is absent without any valid reason must make a reasonable effort to contact the parents of the learner and request the learner's return to school, in accordance with the policy.

Summary of professional learning through records of practice

The above discussion revealed that the FP teachers in the study from rural, township and urban schools professionally learnt from the process of keeping records of practice. They engaged Biggs' (2003) deep professional learning strategy and the learning was assimilative (Illeris 2009) stemming from the use of CAPS documents, class attendance registers and records of marks. The next section discusses teacher professional learning through research and reading.

Professional learning through research and reading

Research is a way of thinking about and vigorously examining various aspects of your day-to-day professional work, to gain answers to problems and test new facts that contribute to the advancement of one's practice and profession (Ranjit 2011). In this study, the FP teachers researched information to enhance their professional learning and teaching practices. Urquhart and Weir (2014) viewed reading as a process of looking at a series of written symbols and getting sense from them. In this study, reading could be viewed as a way looking for appropriate information from different teaching and learning materials to improve one's understanding and consequently their teaching.

Research and reading

This was confirmed by Participant 1 from a rural school who, in Interview 1, talked about professional learning through reading. She stated:

> *From reading textbook[s] for different Grades, I saw the best textbook concerning time. As a multi-grade teacher, I had to compare the different content in Grade 1, 2 and 3.* (Participant 1 Rural)

From the quote above, professional learning was engaged in through reading books. Interacting with different teaching material in the phase gave the teacher new insights and provided professional learning. Hence, the teacher here professionally learnt from reading and comparing content in different FP textbooks. Literature consulted (Yoon and Armour 2017; Day 2002) purports that the quality of teaching clearly depends on teachers' continuing professional learning as teaching contexts, learner behaviour and expectations of teachers change. Therefore, this professional learning by addition (assimilative) (Illeris 2009) where there was intrinsic interest, portrays Biggs' (2003) deep professional learning strategy seen in the way that the teacher vigorously interacted with content.

Other FP teachers' professional learning was also engaged in through reading various books. This was confirmed by Participant 1 from an urban school who stated in Interview 3, "I am developing myself by reading different books based on how to teach, I gain more ..." This teacher professionally learnt to develop herself from reading various books. This is in line with Sumuer (2018) and Vail (2011) who stress that self-directed learning arises as the fundamental feature of life-long learning of teachers. Engaging in reading outside the formal programmes fostered the participants' professional learning. Reading different books suggests Biggs' (2003) deep professional learning strategy and Illeris' (2009) assimilative learning as the teacher sought to understand different material for professional growth.

Furthermore, Participant 4 from a township school in Interview 1 mentioned professional learning through reading IQMS books. She explained, "I have taken the IQMS books to read, yes, in order to gain more knowledge about it". Therefore, this teacher professionally learnt through reading IQMS books outside the formal programmes. Drawing on Illeris (2009), this was assimilative professional learning through a deep professional learning strategy which involved interacting vigorously with IQMS content.

Conducting internet search and accessing content on YouTube

Apart from learning through reading, the FP teachers also talked about professionally learning through research. For instance, Participant 2 from an urban school explained her professional learning during Interview 2, saying:

> *I use the internet and read more information around that lesson I will teach. I used to go on YouTube and learn something close to that and it gives me an idea on [off] how to teach the lesson. With social media you pick up a lot, you don't actually need to meet someone to know something, you just have to open your phone and you get the information. I have no time to go to the libraries, I learnt from reading the books on my phone.* (Participant 2 Urban)

The teacher here engaged in professional learning from searching for information on the internet and watching videos on YouTube. Cell phones emerged as a source of teacher professional learning in their own contexts. Literature surveyed (Yates 2017) showed that more teachers take part in professional learning on their own initiatives, or at their own expense and out of their school hours. In this study, most of the FP teachers reported that they used their cell phones to download the video clips and search information about what they needed to learn. Through internet searches, the FP teachers professionally learnt from selected, relevant video clips around teaching and learning. YouTube offers limitless opportunities to watch and learn from a multitude of lessons (Utecht and Keller 2019). Hence, professional learning outside the formal programmes involved learning through reading, internet searches and YouTube. Watkins and Wilkins (2011) posit that YouTube videos can be utilized as realia to stimulate educational lessons, enhance exposure to World Englishes, and promote authentic vocabulary development. The use of technological tools (cell phones) was found to be a source of teacher professional learning outside the formal programmes. This finding suggests that the participant engaged in both Biggs' (1989) deep professional learning strategy and Illeris' (2009) assimilative type of learning which represented personal commitment to understanding material reflected in using a variety of learning strategies such as combining different reading resources and reading widely.

Summary of professional learning through research and reading

The discussion above indicated that the FP teachers professionally learnt through research, reading textbooks, and conducting internet search, accessing content on YouTube and using their cell phones. Only the FP teachers in township and urban schools were able to use internet

and YouTube due to the limited network in rural areas. Biggs (1989) argued that deep professional learning is represented by personal commitment to understand material which is reflected in combining different reading resources and reading widely. This was professional learning by addition/ assimilation (Illeris 2009) through internet searches, reading and research. The following section discusses professional learning through meetings.

Professional learning through meetings

Meetings enable professional learning through interaction among teachers. Three types of meetings that offered professional learning within school sites were: Phase meetings, Grade meetings and School meetings. Collegial interaction refers to learning which occurs when teachers work together to achieve a common goal related to their teaching (de Jong, Meirink and Admiraal 2019; Wood and Bennett 2000). These sub-themes are presented in a diagram and then discussed in Figure 5.3.

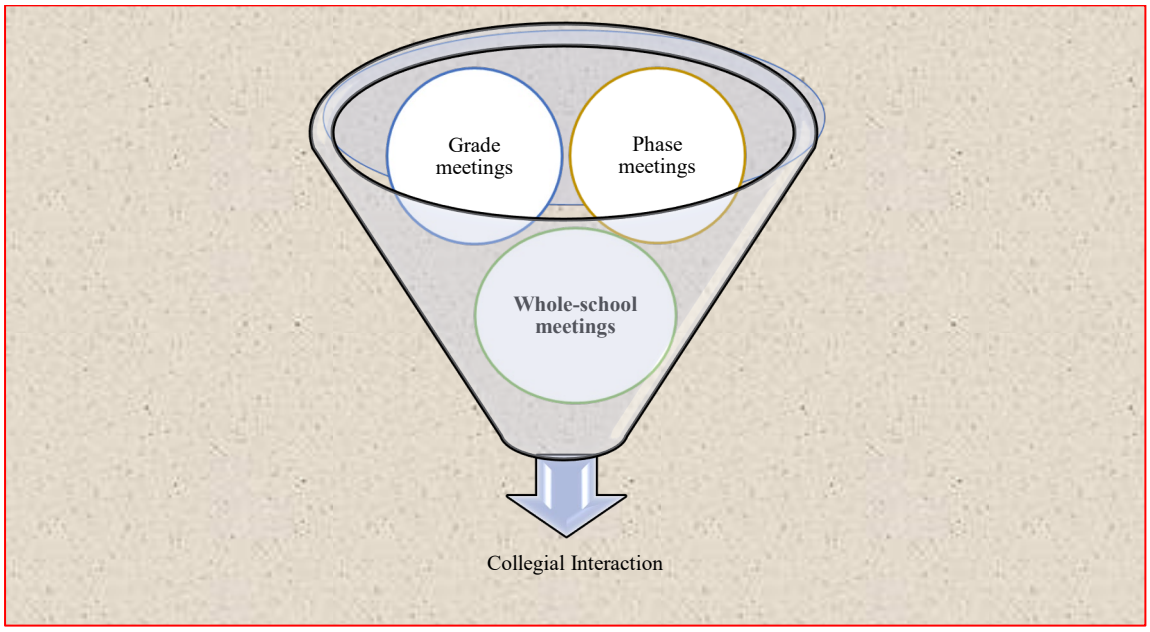

Figure 5.3: The sub-themes that emerged from teacher professional learning in school meetings

Source: Researcher (2021)

Professional learning through interaction in phase meetings

Phase colleagues are teachers who teach within the same phase in this study – from Grade R (Reception) to Grade 3, including their Heads of Department (HODs). Data showed that most teachers who participated in this study professionally learnt from sharing expertise with colleagues within their phase (FP).

The FP teachers' professional learning was experienced through collegial interaction. For instance, Participant 14 in a township school explained the following in a focus group discussion:

> *I work hand in hand with the Grade 2 teacher because she taught Grade 1 in the past years so, she helps me a lot and I learnt a lot from her as she also tells me to use other teaching methods.* (Participant 14 Township)

Another participant from a rural school echoed the occurrence of professional learning from attending phase meetings in Interview 1, saying:

> *In our phase meeting, when we are having problems, let's say you are teaching division and you see that learners don't understand, then in our meetings you ask the others to help you and I learn from that …* (Participant 3 Rural)

From the quotes above, these teachers' professional learning occurred from consulting colleagues within the FP. Participant 14 indicated that she experienced professional learning from an experienced former Grade 1 teacher. This links with Biggs (2003) who asserts that individuals who lack independence rely on consultations with colleagues to learn certain things, which suggests surface learning. Illeris (2009) calls this type of learning cumulative learning – where the participants tend to learn in order to accomplish tasks. Hence, these teachers seemed like they relied on other colleagues as they talked about *'learning a lot from others'* as well as *'waiting to ask others in meetings.'* On the contrary, research consulted reveals that collective participation can make changes that contribute to teachers' professional learning (Topolinski 2014).

The issue of professional learning through collegial interaction also emerged in urban schools. For example, Participant 4 from an urban school explained her professional learning during Interview 1, saying:

> *…I didn't know how to fill [in] that [form], then I went to another teacher and she showed me. It was a Grade 2 teacher, she says, "this is how you fill [in] the form for the weak learners," and I learnt from that because Grade R also needs to fill that in, [to provide details] on how we help the weak learners.* (Participany 4 Urban)

The participant experienced professional learning from interacting with a colleague. The teacher professionally learnt from completing the form with the assistance of a colleague. The form required the teacher to enter details regarding the learners' performance and the remedial work that the teacher would undertake to help the weak learners. From the response, this was another form of surface learning where the teacher experienced professional learning through consultation about technical aspects of their work (Biggs 2003). Illeris (2009) views this type of learning as cumulative or mechanical learning, where one learns with an intention to accomplish the task without a motive for in-depth understanding.

Engaging in professional learning activities with phase colleagues was also confirmed by another urban school participant during Interview 2 who said:

> *This picture (pointing at the photograph) shows writing on the board, here I was having a problem with the kids [children] they were writing very small and untidy [untidily], [producing] very untidy work. So, my HOD came and looked at my … That's when I learnt from a colleague [about] making the bigger lines on the board, as you can see the black lines there.* (Participant 2 Urban)

The teacher professionally learnt from the colleague. The teacher, thereafter, wrote bigger on the chalkboard. Legible writing on the chalkboard is likely to translate into learners writing legibly. Sethosa (2001) argues that bigger writing helps learners to develop visual motor ability and contributes to reading fluency. In the FP, learners learn through imitation; therefore, sound classroom practice on writing could be imitated by learners. Through interaction in relation to classroom practice, Participant 2 above professionally learnt from her colleague how to make learners' writing bigger by modelling this through her own writing on the chalkboard. The response displayed Biggs' (2003) deep professional learning strategy given that she apparently had time to synthesise and evaluate learners' work against her own handwriting. From Illeris' (2009) perspective, the teacher learnt through assimilation as this was learning by addition.

The FP teachers from all the three contexts also engaged in professional learning during HOD-cascaded meetings. For instance, Participant 24 from an urban school explained in a focus group discussion:

> *Most of the workshops on curriculum were attended by the HODs, and then the HODs delivered [the content] to us as teachers.* (Participant 24 Urban)

Another participant from a township school confirmed professional learning through HOD-cascaded meetings when she added during Interview 2:

> *Here (pointing at the photograph) these are the FP teachers, this is [the] HOD giving us feedback about the Mathematics workshop that she attended.* (Participant 4 Township)

Participant 4, like Participant 24 urban engaged in professional learning around their classroom practice from the HOD-cascaded meetings. Learning from HODs' meetings could result in a deeper understanding as these teachers share the information at their level of understanding. They might use examples drawn from their own context and perhaps language that they easily understand. Both participants seem to have engaged in Biggs' (2003) deep professional learning strategy in handling new curriculum and problem-solving skills through HOD-cascaded meetings. The nature of learning depicted here was through assimilation (Illeris 2009). Christie and Monyokolo (2018: 154) state that the "HODs are expected to use what they have learnt to assist their teachers to improve their understanding of curriculum delivery which happens during their grade meetings." Therefore, through these HOD-cascaded meetings the teacher experienced professional learning by synchronising the basic curriculum documents (DBE books and CAPS) outside the formal programmes. Participant 4 from a township school also talked about professional learning from colleagues in grade meetings. She put it this way during Interview 1:

> *The grade meetings developed me very well because in the grade meetings we used to talk about curriculum, even if the HOD attend[ed] the workshop she came back and told us what is [was] happening, what they were talking about in the meetings, and I also learnt from that.* (Participant 4 Township)

This finding indicated that the FP teachers engaged in their professional learning from the HOD-cascaded workshops within their schools. This is evident from Metcalfe (2015) who concurs that the HOD and a lead teacher from the school in the subject (Languages or Mathematics) attended the training and used the facilitators and participants' packs to report back to the FP teachers as part of their leadership responsibilities. The above finding suggests what Biggs (2003) calls deep professional learning strategy which occurs from interacting vigorously with a curriculum. However, cascaded meetings may also result in surface learning as these teachers may miss some facts and take a narrow view, concentrating on details and not

go through all the materials carefully or diligently as per instructions given to the HOD at the workshops. Illeris (2009) views this as assimilative learning as the teachers engaged in professional learning through addition. On the other hand, it could be cumulative learning where the teacher may focus only on requirements of the curriculum without a deeper understanding of what needs to be done effectively.

Furthermore, Participant 2 from an urban school also expressed her professional learning experiences during Interview 1, saying:

> *[It's] Not really [that the HOD workshops us], [the] HOD just gives us an idea how it [Jika iMfundo] works, you just go through the three books and learn from following that, and we did that, we didn't have to go for the workshops. [The] HOD didn't really workshop us, we understood it.* (Participant 2 Urban)

The participant's statement reveals that teacher professional learning derived from HOD-cascaded meetings were not uniform because of the way the HODs disseminated the information differed. The teacher professionally got ideas and learnt to follow the DBE book, *Jika iMfundo* and the CAPS document obtained from HOD-cascaded meetings. This teacher displayed Biggs' (2003) surface learning strategy through the cumulative or mechanisation process (Illeris 2009) from the HOD-cascaded meetings. Mthiyane, Naidoo and Bertram (2018) concur that the HODs have the task of supporting their teachers to achieve curriculum coverage as was the case of participants in this study above, but many indicated that this task was not possible in the normal hours of the school day, given the fast pace of the curriculum. Participant 24 in a focus group discussion referred to earlier experiences of professional learning from an HOD-cascaded workshop on *Jika iMfundo*. However, other teachers professionally learnt from reading (three different) books on their own.

From the discussion above, the FP teachers professional learning practices emanated from engaging in collegial interaction while completing forms, discussing teaching methodologies and chalkboard work. The FP teachers from all three contexts seemed to have engaged in professional learning through Biggs' (2003) surface learning strategy and the learning was cumulative. However, it emerged that these FP teachers also engaged in deep professional learning (Biggs 2003) from interacting and engaging with phase colleagues which was also assimilative (Illeris 2009). The HOD-cascaded meetings gave rise to FP teachers experiencing both Biggs' (2003) deep professional and surface learning which encompassed both

assimilative and cumulative (Illeris 2009) learning. While the cascaded model of professional learning, has the advantage of reaching many teachers in a short space of time, it presents a particular risk that 'knowledge' shared may be diluted or distorted as it passes from programme originators to the HOD and then to the teachers (Mukeredzi 2015). The following section discusses teacher professional learning within the school from grade meetings.

Professional learning through interaction in grade meetings

Grade colleagues refers to teachers who teach the same grade at the same or different schools. In this study, grade colleagues are those teachers teaching the same grade, for example Grade 2, in the same school. Topolinski (2014) argues that when teachers work cooperatively with each other they make changes in their knowledge and classroom practice. Data generated indicated that the majority of FP teachers in this study professionally learnt through interaction with grade colleagues in their schools. Participant 17 from an urban school during expressed the following during a focus group discussion:

> *We would be only Grade 1 teachers, we sit together, and I learnt from planning for the assessments. We discuss what we are going to assess, how to make the resources, how to assess, like phonic[s] cards.* (Participant 17 Urban)

Also related to in-school professional learning from grade colleagues, Participant 3 from an urban school during Interview 1 revealed:

> *It is very helpful when we have two classes of [in] the same grade. We discuss what we are going to teach and different ways of teaching it.* (Participant 3 Urban)

Experiencing collegial interaction from two classes of the same grade offered an opportunity for these FP teachers to professionally learn through sharing ideas. Professional learning was engaged in through discussions on content and the appropriate pedagogy. In other words, this implies that the teachers were discussing and sharing PCK. These findings support (Peterson 2012) who argues that when teachers engage in interactive professional development, they become confident in developing their teaching and learning skills. From Biggs' (2003) theory this showed that these teachers engaged in deep professional learning strategy within the school from analysing and synthesising the assessments and content before they were taught or written. Drawing from Illeris (2009), the nature of learning relates to assimilation by adding on skills from handling assessments.

Participant 4 from an urban school, during Interview 2, added how she also engaged in professional learning:

> *I learnt something from there because I didn't know how to convert those marks. I always worry her [grade colleague] about that, and she showed me how to convert learners' marks.* (Participant 4 Urban)

The teacher engaged in professional learning through colleagues relating to the conversion of marks. Professional learning from colleagues in the conversion of marks took place when marks were calculated as uniform percentage mark from different raw figures. Christie and Monyokolo (2018) state that teachers need to use a checklist for the term to record learner marks where teachers indicate which specified skills their learners have achieved. Although they supplied a sample mark sheet to record learner marks according to the South African School and Administration Management System (SA-SAMS), the teacher reported that she was learning through collegial guidance. Graham (2019) argues that teachers of the same grade level who engage in professional learning activities have the potential to enhance their knowledge, skills, and classroom practice. In this regard, collegial interaction enabled this teacher to engage in Biggs' (2003) deep professional learning as the intention was to understand how the system worked. In this interaction, teachers professionally learnt through engagement with complex material – conversion of raw marks. This learning links to accommodative learning as the teacher talked of experiencing new knowledge of converting raw marks (Illeris 2009). Given that it was a new curriculum being implemented, most of the FP teachers had some challenges on how to calculate marks according to SA-SAMS, therefore teacher interaction within the school bridged that gap.

The findings indicated that the FP teachers engaged in professional learning through collegial interaction with grade colleagues. They professionally learnt from preparing assessments, using teaching resources and discussing appropriate teaching methodologies. The FP teachers engaged in professional learning through both deep and surface learning (Biggs 2003) related to assimilation, accommodation, and cumulative learning (Illeris 2009). From the findings, learning from grade meetings benefited FP teachers in urban and township schools only and not those in rural schools. The next section discusses professional learning through interaction in whole-school meetings.

Professional learning through interaction in whole school meetings

School colleagues denotes all the teachers who teach or work within a school. Leclerc *et al.* (2012) argue that schools must develop a culture supported by the partnership of all participants, bringing the principal and the teachers together to work as colleagues while seeking to continuously learn from one another. From the data generated, it also emerged that the FP teachers in their schools professionally learnt through interaction with school colleagues outside their phases or Grades. This was confirmed by Participant 3 from a township school during Interview 1, who stated:

> *I always ask for help from the Grade 7 teacher who knows Maths very well. I also ask him about the curriculum if there is something that I don't understand, how to do this, which method must I use to [for] the young learners, and hence, I learnt a lot of ideas from engaging with him.* (Participant 3 Township)

Professional learning was engaged in by consulting a school colleague about the curriculum. Learning from consultation might lead the teachers to discover new information about their teaching practices. In this case, the FP teacher engaged in professional learning related to interaction. Interaction across different grades gives teachers the opportunity for gaining fresh insights and support on various types of subject content (Jones 2012). This corresponds with Biggs (2003) who posits that deep professional learning strategy is driven by some need to learn and could be observed as a way of engaging in learning with careful attention to understand. From Illeris (2009), this portrays assimilative learning to better understand the Mathematics curriculum.

On the same note, Participant 4 from a rural school in Interview 3 added: *"I learnt from my principal about teaching, planning and behaving as a professional teacher."* This response indicated that professional learning through interaction with school colleagues (the principal) revolved around practice and professionalism. Literature consulted, Bell and Gilbert (1996) highlight that strong socially mediated professional development through support of knowledgeable 'others' give teachers an increasing capacity for professional autonomy and power to determine their own learning growth pathways as they are initiated into the status quo by more experienced colleagues. From the theory, this participant reflected a deep professional learning strategy (Biggs 2003) to experience the assimilative type of learning (Illeris 2009) given that she already had some knowledge of these processes.

The FP teachers also talked of engaging in professional learning activities in attending whole school meetings. Whole school meetings are those meetings held by all academic staff members within the school to discuss issues regarding teaching and learning. The findings showed that the FP teachers professionally learnt from the whole school meetings. This was confirmed by Participant 3 from a rural school who said the following during Interview 1:

> *I learnt from working with people, how to handle them, how to write the minutes, how to put [express] your opinion in [a] meeting.* (Participant 3 Rural)

From attending whole school meetings, the FP teacher engaged in professional learning through working with other colleagues and writing minutes. The teacher professionally learnt to interact and communicate with different colleagues from attending staff meetings. Surveyed literature in Chapter Two shows that the teachers informally learn from engaging in professional learning activities. This participant showed that she professionally learnt to interact with other colleagues. Hence, in attending whole school meetings the FP teacher engaged in professional learning through Biggs' (2003) deep professional learning strategy. This teacher talked of sharing opinions which involves following up on discussions and also reflecting upon them. Hence, the nature of learning was assimilative as it added on to previous knowledge (Illeris 2009).

In addition, the issue of professional learning through whole school meetings also emerged in urban schools. For instance, one participant from an urban school talking about her professional learning in Interview 2 added:

> *Every Tuesday and Thursday we meet as a staff and then we brief each other of [on] what's happening inside the school and outside the school. I learnt everything that concerns the Department of Education and all stakeholders, and I learnt from these meetings.* (Participant 3 Urban)

In whole school meetings teachers engaged in professional learning again from sharing ideas about the school, the community and from the DBE. Frequent meetings kept teachers informed, up to date and provided opportunities for them to share problems and concerns at hand. Such activities often facilitated professional learning and created cohesion in the school. However, when meetings become too numerous, this may reduce teaching time and staff may lack interest. Zuber-Skerritt (2018) explains that learning within an organisation enables people to continually discover how they can generate new ideas and transform their practices. Therefore,

engaging in teacher professional learning activities within the school allowed these teachers to experience both deep and surface learning strategies. Biggs' (2003) surface learning strategy manifests when teachers adopt a narrow view, concentrating on what has to be done at that point particularly in listening to updates. Deep professional learning strategy manifests when the teachers view information seriously, reflecting on it, examining its applicability, and acting accordingly (Biggs 2003). Through this, the nature of surface learning implies mechanical learning where individuals learn with no context of meaning nor personal significance but just to fulfil the task.

Furthermore, Participant 22 from an urban school commented during a focus group discussion about her professional learning from in-school staff development workshops. She stated:

> *In our school we have staff development workshops. … all the teachers sit together and discuss the problems that we are facing in our classrooms and in the whole school and that helps us in our teaching, with discipline. Then I learnt from these discussions.* (Participant 22 Urban)

The teacher realised professional learning through attending staff development workshops. Staff development workshops are professional learning spaces where teachers develop knowledge and skills to address learners' learning challenges and school improvement goals. These gatherings provide opportunities for teachers to work together through the change process, rethinking and creating new school structures. It is about interaction and supporting each other to create an effective environment for teaching and learning. Maintaining classroom discipline is vital for teaching as disruptive behaviour interferes with effective teaching and learning. The FP teacher here talked of professional learning related to discipline through sharing ideas in the staff development workshop within the school. This teacher may adopt both deep learning (understanding and synthesis) and surface learning (technical aspects without serious thought) (Biggs 2003) and the types of learning from engaging in staff development workshops encompass both assimilative and cumulative learning (Illeris 2009). On the contrary, Shehu (2014) argues that some school workshops often fail to address teachers' needs. However, in this study it appeared that teachers' needs were actually addressed as the FP teachers professionally learnt to handle discipline issues from staff development workshops within the school. Furthermore, professional learning workshops within the school encouraged professional dialogue among teachers and boosted self-esteem and motivation.

However, in this study, only one participant from an urban school mentioned in-school staff development workshops.

Summary of professional learning through meetings

From the discussion above, professional learning reflected by most teachers was through interaction: consultation, discussion and sharing ideas. Furthermore, the FP teachers also engaged in professional learning practices during whole school meetings. Most of this learning was a combination of assimilative and cumulative learning (Illeris 2009) through deep and surface learning strategies (Biggs 2003).

The discussion on professional learning within the school illustrates that FP teachers engaged in professional learning from classroom practice: through lesson planning, lesson delivery, use of teaching resources, use of teaching strategies, classroom management and assessments. Collaboration in lesson planning, lesson observations and assessments in urban and township schools gave rise to deep assimilative learning, contrary to participants in rural schools who engaged in individual lesson preparation and consequently individual professional learning.

Furthermore, the findings revealed that the participants in the three settings, namely township, rural and urban schools experienced professional learning from employing different teaching strategies, using and developing teaching resources in their classrooms. Additionally, these teachers engaged in professional learning from a variety of classroom management skills and from applying new ways of assessing learners, assessment procedures, and moderation of learner tasks according to Bloom's taxonomy. Professional learning within the school was also experienced from using school records of practice such as progress reports and registers, and syllabus documents (CAPS). Further, research through internet searching and reading enabled the teachers from urban and township schools to engage in the deep professional learning strategy whereas in rural schools professional learning was restricted to reading books only due to limited network access. Participants also engaged in professional learning through interaction with phase, and grade colleagues and in school meetings. However, grade meetings benefited FP teachers in urban and township schools unlike in rural schools where there were single classes per grade. From school meetings, the participant professionally learnt through consultation, interaction and sharing ideas.

From the findings above, the FP teachers from all three of the settings engaged in learning through both surface and deep professional learning strategies. This learning was mainly by

assimilation where teachers added new knowledge to the prior schemas they possessed previously. There was also some evidence of cumulative or mechanical professional learning where the teachers learnt through consultation and cascaded meetings. Very few incidences of accommodative and transformative professional learning emerged, for example through learning new curriculum and lesson delivery. The next section discusses teacher professional learning from wider professional sites.

Teacher professional learning from wider professional sites

This section focuses on teacher professional learning in wider professional sites. In this study, wider professional sites refer to spaces which offer professional learning outside the school. Three themes emerged from data on professional learning through: workshops, cluster meetings, and social gatherings.

Table 5.3 below summarises participants' responses (see full list in Appendix Six) regarding the nature of their professional learning reported during focus group discussions, individual face-to-face interviews, and photo-elicitation interviews.

Table 5.3: Number of times where participants' comments suggested the nature of learning

	Workshops	**Cluster meetings**	**Social gatherings**
Total number of participants	21	24	19

Key: Codes (Participant 1 to 24) were used for confidentiality.

Drawing on Table 5.3 above, professional learning which was experienced by the majority of FP teachers was through cluster meetings (24), workshops (21) and social gatherings (19).

These sub-themes are presented in Figure 5.4 and discussed in turn below.

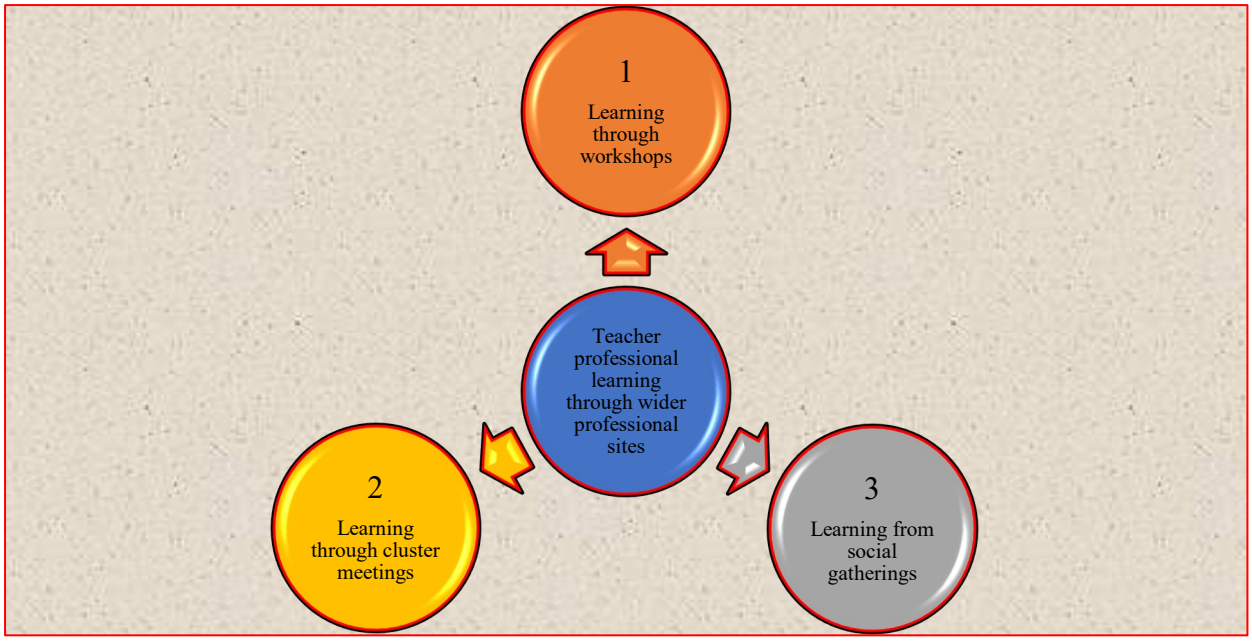

Figure 5.4: The sub-themes that emerged from teacher professional learning through wider professional sites

Source: Researcher (2021)

Professional learning through workshops

Workshops are non-formal gatherings which are often planned, structured, organised and coordinated to discuss areas of concern or interest, for instance in a subject; or new policies that need to be implemented. The learning therefrom is usually nonbankable nor creditable. In this study, while some FP teachers also learnt about the curriculum through HOD-cascaded workshops, 21 out of 24 reported that they attended workshops organised for learning and sharing expertise around teaching and learning. This was evident from some participants, for example one participant from an urban school highlighted during a focus group discussion that:

> *At the workshop, we share ideas with teachers from different schools. … we share the ideas on how to handle the learners who act like this or that, and I learn a lot of ideas.* (Participant 19 Urban)

Attending workshops allowed some FP teachers to informally engage in professional learning from sharing ideas with colleagues from other school contexts. From workshops, Participant 19 engaged in professional learning related to learner discipline. Learner discipline, as mentioned earlier, refers to learner control within the classroom and not from outside. Like all teachers, FP teachers need to understand the value of learner discipline to ensure routines are

maintained, school rules are enforced, and learners are in a safe learning environment. This allows learners to learn and adapt their behaviours to meet expectations in the classroom, while simultaneously teaching them how to make better choices in their path to further learning. In other words, from the response above, professional learning from this wide professional site exposed teachers to strategies that help to instil control in the classroom. The reviewed literature (Darling-Hammond 2009; 2012) concurs that workshops provide teachers with an opportunity to professionally learn by sharing and discussing ideas and challenges they encounter in their classrooms with colleagues, in a collegial environment. From engaging in collegial interaction these teachers professionally learnt new or different solutions to challenges they come across in their classrooms. Therefore, engaging activities in wider professional sites enhanced interaction and professional learning among teachers.

However, the participants seemingly engaged in learning through Biggs' (2003) surface learning strategy given that they took a narrow view and concentrated on technical details of learner discipline. Should they have seriously considered handling diversity and managing learner discipline in ways that fostered children's learning they would then have experienced deep professional learning. Illeris (2009) calls accomplishing and learning technical aspects of learner control, cumulative learning. This is characterised by mechanisation processes that are used in contexts which are mentally related to a learning situation, in this case the classroom.

Participant 4 from an urban school in explaining her professional learning through workshops said the following in Interview 1:

> *I did attend one of the workshops where they [facilitators] told us that the learners are not the same. …when you are planning for group work you mustn't give the same work because the excellers [highflyers] need challenging work; the mediocre [learners] need moderate work while slow learners need less challenging work. The organisers instructed us to sit in pairs and gave us flip charts to prepare our lessons for different learners and thereafter gave feedback. This was when I learnt to plan for the excellers to count in threes, the mediocre in twos and the slow learners [to count] in ones with the help of educator.* (Participant 4 Urban)

The teacher professionally learnt through the workshop in relation to handling diversity. Diversity means a belief that all learners have the potential to learn and succeed (Boelens, Voet

and De Wever 2018). This teacher showed a deeper understanding of diversity which is important for enhancing individual learners' performance. Handling diversity effectively in the classroom may help prepare learners for good citizenry as it will prepare them to understand and appreciate different people from various cultures and social groups. Therefore, this implies that the FP teachers need to understand strategies for differentiated instruction and beliefs about designing blended learning to address student diversity (Boelens, Voet and De Wever 2018). The participant engaged in professional learning around learner differences and group lesson planning. Often an awareness of different needs of learners enhances teachers' choices of a variety of teaching methodologies to fulfil these needs particularly, in the FP where children come from different educational backgrounds.

Therefore, the FP teachers need to understand how to cater for learners' individual needs. The participant engaged deep professional learning which was assimilative from the workshops outside the formal programmes. This is in line with Scrivener (2011: 69) argues that "When we plan lessons, we need to remember that we are planning something that may not be appropriate for some learners and may be easy or difficult for others, which is why the planning is only one part of structuring a lesson." Also, Participant 4 from a rural school highlighted professional learning from attending workshops, in Interview 1, she echoed: "In workshop[s], I learnt about shared reading. And I learnt that reading is [comes] in different forms. There is shared reading, group reading and reading aloud."

Participant 4 engaged in professional learning from attending workshops in the wider professional sites. Shared reading is when the teacher reads with the whole class or a group of learners during story time. Group guided reading involves a small group of learners supported by the teacher as they read, talk and think imaginatively through the text. Reading aloud is when the teacher reads to the whole class using material that is at the listening comprehension level of the learners (DBE 2011a; South Africa. Ministerial Committee on Transformation and Social Cohesion and the Elimination of Discrimination in Public Higher Education Institutions 2008). South Africa's reading crisis has been a topical subject for some time and several proposals for improvement have been put forward, for example: promoting a culture of reading; encouraging parents to read to their children; making books accessible in schools and improving initial teacher education (Sun 2020). Hence, engaging in teacher professional learning in wider spaces enhance teachers' understanding around reading strategies. This is in line with literature surveyed, Vail (2011) argues that engaging in workshop professional

learning activities produced teachers as knowledge transformers in their own classrooms. According to Illeris (2009), this finding implies an assimilative teacher professional learning, by adding to their prior knowledge as they already had an idea of teaching reading. The finding is confirmed by the DoE (2012) which states that teachers have attended workshops organized by the DoE on how to use reading strategies. This teacher, therefore, engaged in deep professional learning through vigorous collaborative engagements on the types of reading and reading principles.

On the same note, Participant 1from a rural school confirmed during Interview 1 that professional learning from workshops, putting it this way: "This thing is continuous because in workshops, every year, I learn how to teach the young children, ... and the department officials teach us how to teach."

Continuous, in the quote, refers to a process that is on-going unlike a formal qualification which has a definite start and end date. Hence, this participant showed that workshops were a continuous process of professional learning about their practice. This concurs with Villegas-Reimers (2003: 10) who views professional learning as "a long-term process that includes regular opportunities and experiences planned systematically to promote growth and development in the profession." However, if these workshops are held annually without monitoring and follow up then their effectiveness would be doubtful. Guskey (2004) advocates for effective professional learning that has in-built monitoring, follow up and many classroom-related activities.

From the quote above, how to teach young children would be drawing on principles of child development – what these young learners would be expected to know or not know. An understanding of child development would enable these FP teachers to make appropriate choices of content, pedagogies, and learner activities. These teachers would then be able to do more than facilitating learning but, help learners to understand themselves to maximise their future well-being. In contrary, Mkhwanazi (2014) argues that workshops offer limited professional learning as they do not place emphasis on teaching skills or subject content. Meanwhile, Mockler (2013) stresses that engaging in collaborative professional learning may be a primary vehicle for ensuring that the practices of schools, school leaders and teachers are continually refreshed to ensure their ongoing effectiveness in promoting the learning that today and tomorrow's young people will value and need. Workshops, therefore, offered space for teachers to professionally learn.

On the other hand, Participant 1 from an urban school during Interview 1 explained the nature of professional learning through workshops said:

> *I have improved a lot; I went for lots of workshops [where] the facilitator asked us to sit in groups of four per grade level, then we were given tasks to do and present it [them] after our discussions. This is where I learnt how to do assessments, as I now know how to record it [results] and how to use different ways to teach.* (Participant 1 Urban)

The participant talked of being professionally developed through workshops. The participant engaged in professional learning from assessments, recording and using a variety of teaching strategies from these workshops. The assessment that the teacher refers to above is assessment of learning. While this kind of assessment may provide evidence of achievement to parents, other educators, the students themselves etc., additionally, it offers teachers a basis for determining what they need to do next to move student learning forward, for example, modifying their methods, materials, and students' learning processes in response to the assessment information. In assessment for learning, teachers use assessment as an investigable tool to determine what their students know and can do, and what confusions, preconceptions, or gaps they might have. On the other hand, assessment as learning which is ongoing self-assessment by teachers to monitor their own professional learning, is characterized by teachers reflecting on their own practice, and making adjustment so that they achieve deeper understanding. Thus, these forms of assessments and issues of reflection that emerged from the teachers' responses bring about professional learning. Ramazhamba, Mashiane and Dlamini (2018) propound that the teachers should be properly trained and retained through workshops and seminars on different aspects of educational assessment in order to ensure high quality work. Through these workshops, teachers collaboratively engaged in professional learning to do with assessments and teaching strategies; this was apparently the deep professional learning strategy where learning was assimilative.

Still on workshops, a participant in a rural school in Interview 3 mentioned that she engaged in professional learning through these wider sites around curriculum changes:

> *Even the workshops are also helpful in [for] other things that we cannot get from the university. Because there are so many things, changing of curriculum and things from the department so, I learnt that every year from the facilitators'*

presentations and others during short breaks at the workshops. (Participant 3 Rural)

Participant 1 in a township school during Interview 1 also engaged in professional learning through workshops. She said:

> *Workshops helped me, where we are coming from… I don't know how to put it, but we are coming from very far now we were doing different curriculums [curricula], from OBE, RNCS, NCS and we are using CAPS and …now we must collect them all together and use them to get a (sic) better knowledge and skills.* (Participant 1 Township)

This quote makes an argument which seems valid given that there have been many changes to the curriculum since 1994. In 1997, the South African education sector introduced the Outcomes-Based Education (OBE) to overcome the curriculum divisions of apartheid. The government further moved on to modify this new curriculum to the Revised National Curriculum Statement (RNCS) 2002, then the National Curriculum Statement (NCS) in 2005 and in 2011 they developed the CAPS document which was created for each subject to replace SLAS, LPG and SAG (as alluded to earlier under the professional learning from records of practice) across the Grades R–12.

Darling-Hammond (2012: 12) argued that teachers do more than just sharing teaching tips during workshops, but they "design and evaluate curriculum and instruction together, in a way that allows them to share their expertise deeply and in a sustained and ongoing fashion". Therefore, drawing on Darling-Hammond and the responses by Participant 3 and Participant 1 in a township school, these teachers engaged in a deep professional learning strategy through the new curriculum. The nature of learning reflected was a combination of assimilative and accommodative learning.

What emerged from the above discussion is that most teachers in this study in all three of the contexts reported professional learning through workshops. These FP teachers engaged in professional learning through a combination of Biggs' (2003) deep and surface learning strategies and the learning was both assimilative and cumulative (Illeris 2009) through interaction with colleagues from other schools during workshops in wider professional learning sites. It was also noted that the workshops bridged the gap between the theoretical learning

from university and classroom practice. The next section discusses teacher professional learning through cluster meetings.

Professional learning through cluster meetings

Chikoko (2006) defined clusters as grouping of schools within the same geographical location, with the sole goals of promoting or improving their teaching skills and subject content knowledge for the improvement of learners' academic performance. In this regard, cluster meetings in this study are gatherings where teachers of the same grades or subjects from different nearby schools meet to share their expertise and experiences. In this study, cluster meetings allowed all the FP teachers an opportunity to professionally learn through sharing ideas around their teaching with other teachers from different schools. For example, Participant 1 in a township school in Interview 1 echoed:

> *Yah, we have cluster meetings especially when we were using CAPS, we had cluster meetings with other schools where we sat down and made[designed] tasks for Grade 1... I learnt from making these assessment tasks with others.* (Participant 1 Township)

Participant 1 engaged in professional learning from developing assessment tasks in collegial interaction during cluster meetings. Professional learning here was through participation. When these teachers engage in collegial discussions, they professionally learn, both consciously and unconsciously. The development of assessment tasks in reference to above not only fosters professional learning but gives rise to ownership and enhances retention as well as the smooth implementation of those tasks in their classrooms. This also promotes teachers' self-efficacy, often vital for effective FP teaching. Mkhwanazi (2014) claims that the cluster meetings helped teachers to communicate with their colleagues from outside their schools and set task activities and assessments. Engaging in professional learning activities during cluster meetings is likely to have led to the use of a deep professional learning strategy which was assimilative (Illeris 2009) as teachers engaged, listened to different opinions and views of colleagues from other schools on issues that they knew already.

Furthermore, Participant 4 from a rural school, explained her professional learning during Interview 1 by saying: "We have the cluster meeting … what I learnt from working together was how to attack the syllabus and everything like that." This response also confirms teacher professional learning through interaction during cluster meetings. By "attacking" the syllabus,

the participant implies they were unpacking and decoding the syllabus, i.e. giving it a meaning and breaking down topics into teachable units. This interactive process offered them professional learning in these wider spaces. This teacher, from working with others, discussing and unpacking the curriculum, also engaged Biggs' (2003) deep professional learning strategy. This concurs with literature reviewed, Mukeredzi (2016) states that clusters promote inter-school interdependence and the sharing of teaching material and psychological mediational tools. In this study, psychological mediation tools refer to the FP teachers' experiences and knowledge which is used during the cluster meetings. Similarly, Participant 3 in a rural school in Interview 3 added:

> *When I was teaching Grade R, we used to have clusters, those cluster meetings were very important. We were learning to write a lesson plan, …how to present a lesson and how to deal with learners, you learn all this from the cluster* (Participant 3 Rural)

Furthermore, one participant from an urban school in Interview 1 expressed her professional learning practices as follows:

> *We were having cluster meetings with Grade R teachers from other schools. Then the coordinator for Grade R will come and teach us some of the other things [such as] how to make [write] the report for Grade Rs. I learnt that the Grade R reports are not the same as the Grade 1 [reports], because we must tick [boxes relating to skills in] physical, hand and eye coordination, touching, you see because these learners learn by touching and doing.* (Participant 1 Urban)

Teacher professional learning through clusters enabled Participant 3 to professionally learn through a variety of tasks which included lesson planning, lesson presentation and learner discipline. Lesson planning and managing of diverse learners were discussed in detail under classroom practice and classroom management. On the other hand, Participant 1 also confirmed professional learning from cluster meetings through developing Grade R reports and the realisation of the distinction between Grade R and Grade 1 reports. This is because Grade R reports involve many other elements that relate to the holistic development of a child. This links with Jita and Mokhele (2014) who state that, through clusters, teachers were able to collaborate and share their classroom experiences related to their subject or learning phase.

These authors point out that the focus of these cluster interactions included such activities as curriculum analysis, lesson planning, lesson presentation, assessment, lesson studies, sharing ideas on CK and PCK. This was the case in this study, as reflected by Participant 3 and Participant 1 above. The nature of learning reflected here was assimilative where participants added new learning to their prior knowledge. Given the engagements in a variety of tasks as reflected in the response above, they seem to have engaged Biggs' (2003) deep learning and understanding around classroom practice through cluster gatherings.

From the discussion above, all participants from urban, rural and township schools mentioned professional learning through attending cluster meetings. Their professional learning was through participation. It appears that the FP teachers in the study, from urban, rural and township schools engaged in professional learning through Biggs' (2003) deep learning strategy through assimilation and accommodation as propounded by Illeris' (2009) types of learning. Professional learning occurred through developing assessments tasks, lesson plans, teaching activities and writing reports for Grade Rs. The following section discusses teacher professional learning through social gatherings.

Professional learning through social gatherings

Social gatherings in this study were meetings where these people came together for furthering a common goal. Nineteen (19) FP teachers reported that they benefitted from these opportunities as spaces for professional learning. For example, Participant from a township school explained the nature of their professional learning from attending social gatherings saying during the focus group discussion: "In the church meeting and during Sunday school, I learnt how to care about children…"

Participant 8 from a rural school confirmed in a focus group discussion that she had experienced professional learning from church meetings when she said:

> *We had church meetings like we call them (Inyangathathu) that [where we meet] after every 3 months. … from those church meetings, I learnt to humble myself, listening to others and respect them as a leader (Nomthebe) of ladies. …and when I go back to school, and I learnt to teach my learners to listen and respect others and the community.* (Participant 8 Rural)

The teacher engaged in professional learning about caring for learners and humbling herself from attending church meetings. These FP teachers professionally learn from women or ladies' meetings, youth conferences, general Sunday services and Sunday school meetings. The women's meetings attended by some of these FP teachers were held every two to three months, when they visited the sick or bereaved families, delivered food hampers, donated school uniforms and prayed for them. Other participants went to the temple to feed the poor once a month and delivered donated clothes and food. From these church meetings the FP teachers engaged in professional learning through sharing ideas around these social responsibilities. Participant 23, from an urban school explained during a focus group discussion about her professional learning through these social events when she said:

> *It helps you in understanding learners. There are lots of children that are coming without eating anything in the morning. And yah they don't have food – they are coming from backgrounds where they cannot have breakfast.* (Participant 23 Urban)

Seidl *et al.* (2015) propound that given this social context, it is imperative that universities and colleges recognize that they cannot prepare multiculturally competent teachers without the input of these social aspects. The implication is that communities are useful and integral partners in the endeavour of developing teacher professional learning outside formal programmes. Hence, these FP teachers experienced deep professional learning through assimilation.

On the same note, Participant 5 from a rural school talked about engaging in professional learning in community meetings during a focus group discussion. She explained:

> *I learnt about culture from attending the community meetings, so in the school it helps me to tell learners about our culture. So, the learners know our culture and the things that are good for our community.* (Participant 5 Rural)

The teacher engaged in professional learning about culture in attending community meetings. Culture is generally understood as a social behaviour of a group of people or a community which may reflect both the negative and positive aspects of that group. Zimmermann (2017) defines culture as the characteristics and knowledge of a group of people, encompassing language, social habits, religion, cuisine, arts, and music. Learning and understanding other people's culture is important as it keeps the teacher from projecting her own values onto others

in ways which may be annoying or may hinder the teaching and learning process. Furthermore, knowledge of culture often motivates and creates interest in understanding differences and similarities between each other's cultural values. This also includes cultural diversity where teachers learn from one another in order to facilitate teamwork and cooperation which stimulates effective learning experiences. Therefore, these community meetings provided space for learning where the teacher engaged in professional learning through a deep professional learning strategy as they developed an understanding of both learners' and colleagues' cultures. One is inclined to think that this was new knowledge, i.e. learning from churches which could be by accommodation (Illeris 2009) as it may have had some elements of this, and assimilation given that some of the learning was by adding on. Learning in wider professional sites helped the FP teachers to professionally understand how to handle diversity in their classrooms and to relate cordially to different cultures.

In this section on professional learning through social gatherings, most of the findings emerged from the focus group discussions within all three contexts. This could be partly because the participants were motivated to share other views that were common among them within their communities. Participants engaged in professional learning through a deep learning strategy (Biggs 2003), which offered assimilative learning (Illeris 2009) from attending church meetings such as women's meetings, conferences, general Sunday services and Sunday school. The following section discusses a summary of teacher professional learning in wider professional sites.

Summary of professional learning in wider professional sites

In wider professional sites, the FP teachers engaged in professional learning through workshops, cluster meetings and social gatherings. The FP teachers from all three contexts reported professional learning through these spaces which promoted learning through interacting with colleagues from different schools and engagement in activities like developing assessment tasks. The FP teachers in the study also engaged in professional learning from social gatherings where learning was mainly informal, through religious meetings, women's meetings, and youth conferences.

Professional learning in wider professional sites was both non-formal and informal deep professional learning. The involvement of both individual and collaborative critical reflection and trialling prompted implementation of the deep learning strategy. In contrast, surface

learning involved reproducing some content, ideas, and information passively (Biggs 2003). Findings also revealed that the FP teachers' learning was assimilative as it was relatively easy to recall and apply new knowledge to the existing schema or pattern (Illeris 2009). There were also a few instances of deep accommodative professional learning where individuals gained new knowledge which they could recall and utilize in similar challenging situations. Cumulative or mechanical learning (Illeris 2009) was also experienced. The following section concludes the chapter.

Chapter summary

This chapter discussed the findings addressing Research Question One. Professional learning within restricted spaces occurred through classroom practice, grade and phase meetings and through school meetings. With regards to classroom practice, learning was from lesson planning and delivery which included developing learner motor skills in pre-writing and handwriting activities, and teaching handwriting, in classroom management and learner discipline. Learning further emanated from developing teaching resources, using strategies that promoted learner engagement in teaching complicated concepts, in whole class teaching, group teaching, motivating, observing, and monitoring learner progress.

With regards to grade meetings, having more streams per grade promoted collaborative professional learning through grade meetings where the teachers engaged in joint lesson planning. This was popular in township and urban schools as contrary to single classes in the rural context where teachers worked individually. Phase meetings also prompted them to adopt the deep professional learning strategy through engaging in discussions on various aspects of classroom practice such as developing assessment tasks according to Bloom's taxonomy, using different teaching methodologies and chalkboard work within their phase, offering on-the-spot learner guidance and feedback to deepen learner understanding. Professional learning was also achieved through maintaining records of practice as well as from reading and online research and watching YouTube videos accessed via cell phones. However, this was limited to urban and township FP teachers only as rural teachers had internet access challenges.

With reference to professional learning through school meetings, the FP teachers included in the study from the three contexts experienced professional learning through interaction with school colleagues during such meetings. Findings also indicated that teachers engaged in professional learning through participation in technical activities for instance, completion of

forms, registers and other records of marks and reading the relevant CAPS document. Notwithstanding the surface cumulative learning in these activities like completion of forms, the FP teachers also engaged the deep and surface learning strategies through collegial interaction within these school meetings. However, this was common mainly with urban teachers studied. The FP teachers in township and rural schools mostly engaged in professional learning through interaction with phase and grade colleagues. The findings also revealed that the FP teachers studied from all three contexts engaged in professional learning through reflection on lesson delivery which made reflection a vital element of their professional learning outside the formal programmes.

In the wider professional sites, the FP teachers studied in all contexts reported three spaces through which they engaged in professional learning: workshops, cluster meetings and social gatherings. Their professional learning was through DBE and cluster workshops and meetings held for different grades. These workshops and meetings were reported mainly by FP teachers from township and rural schools. The FP teachers in the study also experienced professional learning from social gatherings such as church meetings and conferences. These learning spaces were reported by FP teachers from all three contexts.

From the discussions above, the participants from the three contexts engaged in professional learning within and outside their schools. In the next chapter, I discuss findings that address Research Questions Two and Three.

CHAPTER SIX
DATA PRESENTATION AND ANALYSIS: DOMAINS OF PROFESSIONAL KNOWLEDGE FOUNDATION PHASE TEACHERS GAIN HOW PROFESSIONAL LEARNING INFLUENCES THEIR TEACHING PRACTICE

Introduction

My study sought to explore Foundation Phase (FP) teachers' professional learning practices outside formal programmes. Chapter Five discussed and presented the findings answering Research Question One which was about the nature of FP teacher professional learning that they engage in outside formal programmes. This chapter presents the findings that address Research Questions Two and Three, commencing with Research Question Two about the domains of professional knowledge that the FP teachers gain through professional learning.

The second section of the chapter focuses on data presentation and analysis answering Research Question Three, about how professional learning influences the teachers' classroom practice. The two sections used data generated through the three methods: focus group discussions, face-to-face interviews and complementary by photo elicitation interviews. These data are presented and discussed together to avoid repetition and overlaps.

In discussing and presenting findings on Research Question Two, as explained in Chapter Three, I draw on conceptual frameworks around domains of teacher professional knowledge from Shulman (1987) complemented by some aspects from Cogill (2008) and Banks, Leach and Moon (1999). I also draw on reviewed literature to show how the findings relate to existing research.

This first section addresses Research Question Two: *What domains of professional knowledge do the FP teachers gain?* Preceding the discussion on knowledge, is Figure 6.1 which reflects the different domains that emerged from the data, which were gained within the restricted site (the school) through classroom practice. There follows Table 6.1 which offers some examples and indicators of the domains of knowledge that depict what FP teachers reported during data generation. Following that, is Table 6.2 which reflects the number of times that participants' comments suggested the domains of knowledge gained. The chapter closes with a summary which draws the threads together.

Section one: Domains of knowledge gained

Five themes depicting the domains of professional knowledge emerged from the data, namely: pedagogical knowledge (PK), pedagogical content knowledge (PCK), curriculum knowledge, knowledge of learners and knowledge of educational contexts, as depicted in Figure 6.1. These themes and their sub-themes are discussed and summarised in that respective order.

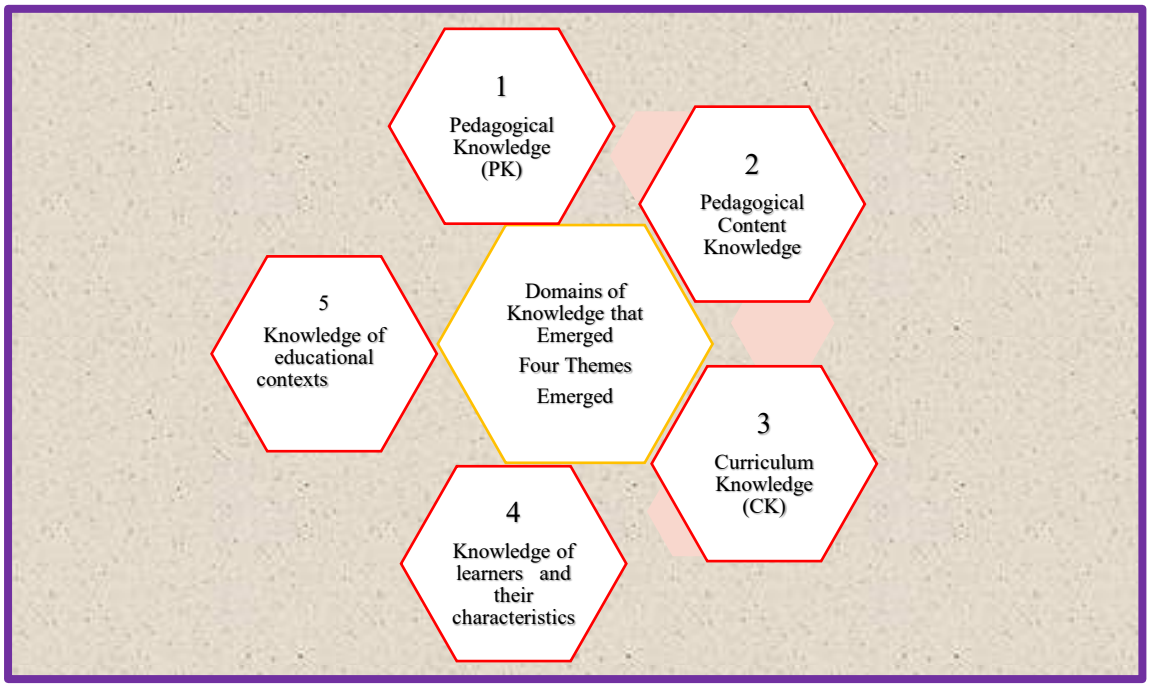

Figure 6.1: The domains of knowledge gained by FP teachers

Source: Researcher (2021)

The indicators and italicised examples of specific domains of knowledge are provided in Table 6.1 to illustrate what the FP teachers reported during data generation.

Table 6.1: Indicators of knowledge domains that emerged from data

Knowledge domain taken from Banks, Leach and Moon (1999); Cogill (2008) and Shulman (1987)	**Indicators**	**Example from the interviews**
Pedagogical knowledge	Comments made during the interviews that suggested that the FP teachers acquired PK	*I learnt to group the slow learners altogether so that I can give them more attention because highfliers can work alone.* (Participant 19 Urban)
Pedagogical content knowledge	Statements that reflected the use of different teaching methodologies to deliver certain content or topics. (The blending of content and teaching strategy.)	*I learnt to teach shared reading using [the] whole class rather than learners reading alone because when you do shared reading, other learners learn faster when we read together.* (Participant 24 Urban)
Curriculum knowledge	Comments that suggested learning curriculum knowledge – what to be taught to learners in a certain period.	*I learnt from the CAPS document, because it guides us as to where to start, when we teach learners, from January up until November. …the CAPS document specifies what you must do with your learners and the activity that you should also do.* (Participant 12 Township)
Knowledge of learners and their characteristics	Comments that suggested gaining knowledge of learners and their characteristics	*…this learner (pointing at photo) struggles with school, does not come to school every day, it is difficult to help him because he misses parts of some topics…* (Participant 3 Rural)
Knowledge of educational contexts	Statements that reflected an understanding of specific context, for example, knowledge of the school context, identification of learner problems, backgrounds, families and interests.	*It was a farm school before, now parents do not care about schooling. I learnt that some of these parents cannot read nor write, so it is very challenging to work with parents like that. They do not understand. I was trying to explain to John's grandmother (pseudonym) and she answered me, 'oh no mam, he can leave school'.* (Participant 1 Rural)

Table 6.2 below shows the number of FP teachers who referred to acquiring the particular domains. The full table in Appendix Seven provides more detailed information on specific participants and their particular domains of knowledge.

Table 6.2: Number of times where participants' comments suggested the domains of knowledge

Domains of Knowledge	PK	PCK	Curriculum Knowledge	Knowledge of learners and their characteristics	Knowledge of educational contexts
Total number of participants	24	13	14	20	18

From Table 6.2 and in Appendix Seven, PK was the highest (24) domain of professional knowledge that FP teachers reported to have gained. This might be because the participants found it easier to express their professional learning related to their practice – the 'how to' knowledge rather than explaining concepts. The majority also reported gaining knowledge of learners and their characteristics (20) and knowledge of educational contexts (18). Having lower reports of learning knowledge of context than PK, could be attributed to the fact that professional learning through work is intricately intertwined with the fabric of the school and its environment. Consequently, it becomes largely invisible because it is either taken for granted or not appreciated as learning and the learners (FP teachers) may be unaware of their own learning through working and consequently overlook that particular kind of learning (Mukeredzi 2020). Pedagogical content knowledge (13 out of 24) and curriculum knowledge (14 out of 24) were the least mentioned, by slightly above half the number of participants in the study. Responses of participants did not suggest gaining knowledge of content; as such that domain is not discussed in this chapter. The next section discusses teacher professional learning related to pedagogical knowledge.

Pedagogical knowledge

This is the kind of knowledge viewed by Shulman (1987) as encompassing broad principles and strategies of classroom organization and management. Pedagogical knowledge (PK) generally involves 'how to' perform an act or carry out a responsibility. Eraut (1994: 15) "calls this type of knowledge 'practical know-how' – knowledge about how to present in the action of teaching itself." Eraut further states that, "…it is a combination of what one knows, does and learns from doing." Grossman (1990: 6) calls it "general pedagogical knowledge which includes the body of general knowledge, beliefs and skills related to teaching, knowledge and beliefs concerning learning and learners, as well as knowledge of the general principles of instruction." In this study, PK is understood based on the understandings of these authors. All

24 of the FP teachers indicated that they professionally gained PK – the 'how to' – to engage in different teaching processes and activities in the classroom.

The domain of PK is discussed through four sub-themes: professional learning related to grouping, handling diversity, teaching resources and improvisation. These sub-themes and the number of participants who made references to them are presented in Table 6.3 (see Appendix Eight for the full list) and discussed separately below.

Table 6.3: Number of times participants' comments suggested the kinds of pedagogical knowledge gained

Pedagogical skills	Grouping	Handling diversity	Teaching resources	Improvisation
Total number of participants	18	24	24	16

From Table 6.3 all FP teachers confirmed that they gained knowledge related to handling diversity and the use of teaching resources. Grouping (18) and improvisation (16) were also mentioned. Improvisation was reported mainly by rural and township FP teachers in the study. This is in line with Naude and Meier (2019) who assert that South African rural schools are still experiencing a shortage of teaching resources.

Teacher professional learning of pedagogical knowledge related to grouping

Eighteen (18) participants excluding those from rural schools indicated that they professionally gained PK through grouping. For instance, Participant 18 from an urban school highlighted in Interview 3 that professional learning offered her knowledge of PK related to grouping learners. She said, "I learnt how to group kids into the different ability groups for English, where I have charts made out for each different ability group."

Another teacher from a township school, during Interview 1, also explained that through professional learning she gained PK related to ability grouping, saying:

> *I learnt to group the slow learners together because they need attention. The activities that I give them will not be the same as the ones for other groups. …After that, I assess them as to which group is progressing more and which ones are slow.* (Participant 12 Township)

Group work increases student mastery and ownership of subject matter and builds their self-esteem and self-confidence. Consulted literature, Ali (2011) states that group work encourages deeper learning, interdependence and individual accountability. Participant 18, like Participant 12, professionally gained PK on how to group learners according to their learning abilities. Steenbergen-Hu, Makel and Olszewski-Kubilius (2016) indicate that ability grouping is a way of placing learners into different classrooms or small groups based on their achievement skills, levels, readiness, or learning abilities. While the ability grouping strategy allows teachers to tailor the pace and content of instruction for learners, the practice may also inhibit learning opportunities for some learners as they may be left stuck at a level of learning, although they have potential to advance. Setting specific activities for different ability groups allows teachers to best match the curricular needs of learners and makes teaching and learning processes much easier. However, literature reviewed, Hamilton and O'Hara (2011) show that ability grouping merely widens the achievement gap between high and low ability pupils. Furthermore, lower ability groups may be portrayed as problematic, ignorant, 'switched off' and lacking in skills required to be effective in schoolwork.

On the contrary, group work may create more opportunities for teachers to learn other group management skills through reflection-in-practice as they aim to ensure that all learners remain gainfully occupied. In other literature surveyed, Nhan and Nhan (2019) perceive group work as one of the most wide-spread educational approaches in language teaching, especially in the teaching of English to non-English speakers, as was the case in this study where ability grouping was used in the teaching of English as a First Additional Language (EFAL). Drawing on the conceptual frameworks, Cogill (2008) and Shulman (1987) concur that teachers need to understand that learners learn from the didactic exposure through group work. The didactic exposure allows learners to engage with each other and share ideas through discussions. From this finding, the FP teachers outside the formal programmes gained knowledge of grouping and handling group work strategy.

Participant 4 from a township school, during Interview 2, also speaking of having experienced professional learning related to handling group work stated:

> *Yah, during group work its true they do copy to [from] each other, but I learnt to control them by moving around and not to sit on [at] the table and say 'Write!' I move around the classroom, yah.* (Participant 4 Township)

This participant professionally learnt PK related to monitoring and checking learners' work during group work. Walking around the classroom allowed the teacher to monitor learners' progress, performance levels and to analyse their learning behaviour. Consulted literature, Kaendler *et al.* (2016) concur that the monitoring of cooperative, cognitive and meta-cognitive learners' group activities by teachers is crucial for fostering their learning. However, this finding also contradicts the reviewed literature by van Leeuwen *et al.* (2015) who view this approach as ineffective because teachers cannot uninterruptedly monitor all groups at the same time but must divide their attention and decide which group to support and monitor at any given point in time. Therefore, moving from group to group could hinder the support to all learners as the teacher may need more time with one group than the other to evaluate their learning before moving to the next group. Hence, while the teacher gained PK around the group teaching strategy for effectiveness, they would need to combine group teaching with explanations to cater for learners in different groups. From the conceptual frameworks, Cogill (2008) and also Shulman (1987) indicate that group teaching and monitoring group work, retention of classroom control and learners' learning behaviour are aspects of classroom management, which is a key aspect of PK.

From the discussions above, the knowledge domain that the FP teachers professionally gained related to grouping. Only the FP teachers in urban and township schools gained PK related to grouping learners according to their abilities. Teachers in rural schools did not make any reference to grouping in their responses. It also emerged that teachers in township schools gained PK around handling of the group work strategy through close monitoring to ensure gainful learning for all learners and to assist those in need of teacher scaffolding. The next section discusses teacher professional learning of PK around handling diversity.

Teacher professional learning of pedagogical knowledge related to handling diversity

Diversity is an understanding of an individual learner's uniqueness and recognizing learners' learning differences. Mashiya (2014) and Sharma (2016) view handling diversity as the ability to adapt or prepare the material for curriculum delivery in such a way that the needs of all learners – the gifted learners, and those with learning disabilities – are adequately met. Participant 11 from a township school mentioned her professional learning of PK related to handling diversity during Interview 2, saying "…if the learner is absorbing very, very, slowly I learnt to teach that learner individually. I learnt that I must sit with that learner and teach him/her alone."

In this study, participants in urban, rural and township schools all highlighted that they professionally learnt to manage slow learners who absorbed concepts slowly, as compared to others. As such, learners needed more individual attention to master concepts and move to the same level as other learners. Literature surveyed, Stronge (2018) shows that this kind of scaffolding and or remediation is important and possible only when the teachers understand the bases of learners' difficulties. Therefore, this teacher professionally gained PK related to how to help learners who could not move at the same pace as the others in the class. Furthermore, some FP teachers showed that they gained PK related to individual learners' characteristics, knowledge of student cognitive, motivational, and emotional heterogeneity as well as their motor skills (Guerriero 2014). For instance, one teacher from an urban school said in Interview 2:

> *In this picture (pointing) you can see, the child cannot trace over the line and cannot colour inside lines. So, I learnt to teach pattern writing, giving learners individual attention, making them practise patterns.* (Participant 19 Urban)

From the quote, the teacher professionally learned how to teach pattern writing to learners who could not trace on lines or colour in pictures accurately. This teacher professionally learnt to give individual attention to such learners and to provide them with pattern writing activities to improve their fine motor skills. At FP level, pattern writing and tracing on the line are important activities because they give learners an opportunity to practise the shapes of the letters which they will learn to form thereafter (Kgomo 2013). Figure 6.2 shows some examples of pattern writing styles which FP teachers often use when managing learners who cannot trace on lines or colour within lines.

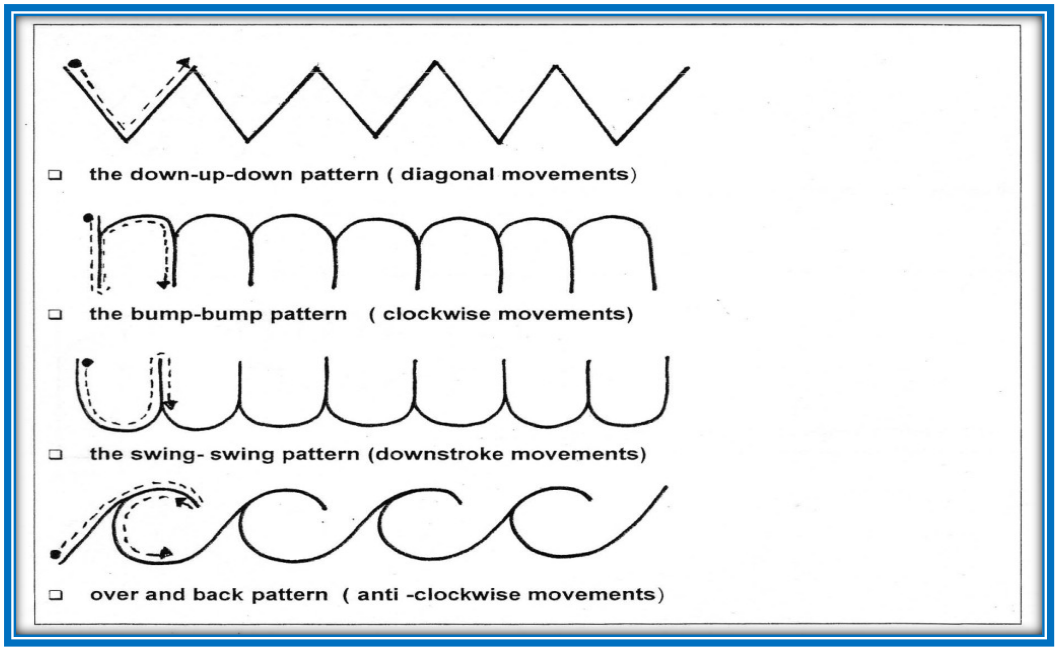

Figure 6.2: Examples of pattern writing styles in the DBE Handwriting guide for Grade R to 3

Source: DBE (2011b: 25)

In relation to PK, the participants experienced professional learning on how to manage learners with learning difficulties. Participant 3, from a township school professionally learnt how to assist individual slow learners, giving them individual attention and more practise while Participant 3 from an urban school professionally gained PK related to writing skills to develop learners' pencil gripping skills. A good pencil grip facilitates writing legibility, writing with speed, good letter formation and writing endurance. It appears that learners taught by Participant 19 had problems in pencil gripping. Literature consulted, DBE (2011a) and Annandale (2019) argue that pattern writing skills are essential for the child to develop the ability to hold and move a pencil correctly, smoothly and effectively to produce legible writing. Therefore, when developing the muscles in learners' fingers, teachers need to ensure that the pattern has the starting and ending points, must be even, and the movements are flowing (DBE 2011b). Thus, these teachers professionally acquired PK related to the management of learners with tracing and colouring challenges which Cogill (2008) regards as helping learners with difficulties. Literature reviewed, Guerriero (2014) also argues that teachers need to use a command of various teaching methods, knowing when and how to apply each method. Hence, the FP teachers outside the formal programmes also professionally learnt PK related to managing slow learners and teaching pattern writing.

Furthermore, Participant 19 from an urban school also explained that she professionally acquired PK on how to use paper tearing and paper cutting activities to develop learners' pencil grip skills. She said:

> *I learnt how to teach them paper tearing, holding a piece of paper, and using two hands, while tearing in a particular direction. ...I also learnt to give them a lot of paper cutting to do. It helps a lot because the child can develop a better grip on the pencil.* (Participant 19 Urban)

When FP learners have weak hand strength, simple learning tasks can become difficult. Hence, Participant 19 professionally gained PK on how to teach paper tearing and paper cutting which could help develop the learners' pencil grip. Figure 6.3 illustrates how some teachers used paper tearing to develop better pencil grip. However, the paper tearing can be done in different directions depending on what the teacher wants to achieve, according to the learner's learning difficulties. Literature surveyed, Guerriero (2014) showed that teachers need to possess PK of learning processes and learner activities, supporting and fostering individual learning progress by having knowledge of various cognitive levels and motor skills. Figure 6.3 and Figure 6.4 illustrate the activities which the FP teachers often carry out with their learners to help develop their pencil grip. Informed by the conceptual framework, Participant 3 gained PK as she portrayed an understanding of children's modes of learning and viewed them as imitators (Cogill 2008), in this case teaching them to do paper tearing and paper cutting in different ways. Figure 6.3 shows a teacher demonstrating paper tearing activities.

Figure 6.3: A picture of a teacher demonstrating how learners can do paper tearing activities

Source: Researcher (2021)

Drawing from Figure 6.3, FP teacher Participant 19 could probably have professionally learnt PK on how to teach learners paper tearing from top to bottom, as illustrated above. Figure 6.4 shows how a teacher demonstrated paper cutting to develop learners' fine motor skills and consequently pencil grip skills. This could also have been one of the activities related to PK that some of these teachers gained.

Figure 6.4: A picture of a teacher doing paper cutting

Source: Researcher (2021)

Literature consulted, Banumathe, Sharma and Binu (2016: 20) explain that "poor fine motor skills often lead to illegible handwriting and an insufficient pencil grip". Drawing on the conceptual framework, the teacher experienced PK skills on how to help children with learning challenges (Cogill 2008), in this case related to colouring and tracing accurately by giving them paper tearing and paper cutting activities.

Concomitantly, Participant 20 from an urban school expressed during Interview 1 that she gained PK saying, "I learnt to use scaffolding. Scaffolding is very helpful to those who are struggling. Especially those who were struggling to write."

Participant 4 professionally gained PK related to scaffolding learners who had writing problems. Scaffolding is a process where teachers help learners step-by-step to understand concepts or perform certain learning activities. Scaffolding generally helps teachers to build learners' confidence and often results in improved understanding, performance, and goal attainment. This finding is aligned to literature reviewed, van Driel, Slot and Bakker (2018) where scaffolding is perceived as a way of providing temporal support to help a learner to

establish and perform a learning task that he or she cannot yet establish alone. Hence, this participant professionally seemingly gained PK on the methods of scaffolding learners who were struggling to write. Cogill (2008) postulates that teachers need to understand how to help learners with learning difficulties, which could encourage learners to raise their expectations.

In the section above, FP teachers reported professional learning around handling diversity, in urban and township schools where they identified learners who were struggling with mastering concepts. Township schoolteachers seemingly gained PK on handling slow learners while teachers in urban schools reportedly gained knowledge on how to teach pattern writing to learners who could not trace on lines or colour pictures. Teachers in rural schools did not comment about this, possibly because they did not view this as an important aspect. Findings suggest that teachers in urban schools gained PK related to developing learners' pencil grip and scaffolding learning which viewed from the conceptual framework, suggests that these teachers gained knowledge of handling learners' learning difficulties (Cogill 2008). The next section discusses teacher professional learning of PK related to the use of teaching resources.

Teacher professional learning of pedagogical knowledge related to teaching resources

Other forms of PK which the participants reported as having professionally gained were around the use teaching resources during the lessons. All 24 FP teachers from rural, urban and township schools from the data indicated that they professionally understood the value of using real objects in their classrooms as teaching resources. Participant 13 in a township school during focus group discussions confirmed her professional learning of PK around the use of teaching resources saying:

> *I learnt to introduce a theme or a topic using real objects so that learners can see and feel, because some of them can understand better when they see the real objects, others, can hear you but they do not understand if they don't see it.* (Participant 13 Township)

From this response, the teacher professionally gained PK on the use of real objects as teaching aids to enhance conceptual mastery. For example, when introducing the vowel '*a*' they could start by showing a real apple and then move on to a picture of an apple with the vowel '*a*' underneath, then use the word '*apple*'. When teachers provide learners with the opportunity to see and manipulate real objects, they allow learners to explore and create their own knowledge. The real objects may also enable the teacher to stimulate learners' critical thinking and dialogue. Literature surveyed shows that Yakubova, Hughes and Shinaberry (2016) argue that

the process of learning from concrete objects, then representing information through images and finally transforming information to a formal or abstract level, builds an understanding and mastery of concepts which makes the teachers' work easier. In other words, manipulation of objects normally helps learners to understand concepts when they move from known to unknown. Cogill (2008) argues that teachers need to possess PK on how to manage lesson introductions and view children as managers of their own knowledge during teaching and learning processes in the classroom. From the above response, the participant professionally gained PK around the use of real objects during the teaching and learning processes to ensure learner understanding.

Also confirming the use of real objects to enhance teaching and learning, Participant 7 from a rural school explained her professional learning of PK during focus group discussion by saying:

> *I have learnt to use real objects when I am teaching EFAL since it is not my children's mother language. Even if I tell them that there is something that is called a wheel, … they must see the real wheel of the car, so I learnt that resources help me to make my learners understand what I am talking about. I allow the children to see and hold it, to get to know the name of the thing.* (Participant 7 Rural)

Another participant from an urban school also confirmed professional learning of PK related to use of teaching resources in Interview 1. She echoed:

> *When I am presenting my lesson, I learnt to start by using media that make the topic easy for learners to understand. After that, I give them the media to practise what I told them.* (Participant 18 Urban)

From the responses above, Participant 18 like Participant 7 and Participant 13 professionally gained PK on use of concrete teaching resources during lessons. The above response by Participant 7 also reflects that she professionally gained PK around the use of real teaching resources to facilitate the teaching and learning of EFAL. It is in rural and township schools that EFAL was taught, and teachers used teaching resources to promote mastery of different concepts given learners' limited exposure to English. These teachers thus, seem to have professionally gained PK on using concrete teaching resources in order to promote teaching and learning of EFAL since learners at FP were taught in their mother tongue. Literature consulted, DeGraff (2016) argues that when learners are taught in a language that they do not

understand, their learning is often limited to rote memorization without creativity. The use of concrete resources may have minimized the rote approach to learning. While Participant 7 indicated that she professionally gained PK on how to teach EFAL using different resources and techniques, literature surveyed, Lenyai (2011) contradicts this finding by revealing that the resources that teachers use to teach EFAL, often do not develop children's comprehension and communication skills.

From the discussion above, the FP teachers in township schools professionally learnt the use of teaching resources during lessons. Literature reviewed, Boggan, Harper and Whitmire (2010) and Makwara (2015) argue for teaching from concrete, to representational and lastly to abstract (CRA) which caters for different levels of learners' understanding. It emerged that only rural and urban FP teachers experienced PK related to the use of manipulatives when introducing concepts to make learners understand, given that they were teaching EFAL. The FP teachers in this study from all three contexts indicated that they professionally gained the domain of PK which Banks, Leach and Moon (1999) define as central to teachers' understanding of the "when, why and how" in their classrooms and which Shulman (1987) highlights as one of the key components of teachers' knowledge for teaching. These findings support Kelly (2007, cited in Maboya 2014:14) who highlight that "teachers need to know when, why, and how to use manipulatives effectively in the classroom as well as [creating] opportunities to observe, first-hand, the impact of allowing learning thorough exploration with concrete objects." The following section discusses learning related to improvisation.

Teacher professional learning of pedagogical knowledge related to improvisation

From data generated, it emerged that there were limited teaching resources in rural and township schools. Teachers in this study reported professional learning of how to improvise. Improvisation is a process of making an artefact for use from whatever is available and accessible (Mukeredzi 2013b). For example, Participant 9 from a township school explained her professional learning related to improvisation in Interview 1, saying: "I learnt how to improvise for myself in order to enhance and do the teaching correctly."

Similarly, Participant 2 in a rural school also, in Interview 1, talked of professional learning of PK from developing teaching resources to alleviate the shortages. She said,

> *"I learnt how to make my own teaching resources. Like papier-mâché with cardboard, matching cards, dolls and flash cards, because there were no resources at all at the school…"* (Participant 2 Rural)

From the quotes above both participants professionally experienced the PK around improvisation of finding or creating teaching resources. The issue of improvisation may enhance teachers' professional learning as teachers reflect and critically analyse their situation, and then take initiative which brings about professional learning. This was evident from the two participants in rural and township schools. Papier-mâché is a malleable mixture often made of old newspapers or guava papers and glue, or flour, and water, that becomes hard when dry, used to make boxes, toys, trays, or ornaments. Literature consulted, Makwara (2015) views the making of teaching resources that teachers would use for their teaching as a learning process. The scarcity of teaching resources in rural and township schools prompted the FP teachers studied to prepare resources which offered opportunities for professional learning. Figure 6.5 below illustrates the process of making papier-mâché which some rural FP teachers may use.

Figure 6.5: A picture of a teacher illustrating the process of making papier-mâché
Source: Researcher (2021)

Consulted literature, Motitswe (2012) states that teachers go to the extent of improvising and making resources that are attractive and learner-friendly to arouse learner curiosity, and which every learner can have use. In the construction process, teachers professionally learn. Cogill (2008) refers to such processes as emanating from teachers' personal dispositions, while Banks, Leach and Moon (1999) describe this as an interrelation of PK, school knowledge and subject matter knowledge which Shulman (1987) views as knowledge of educational contexts as the teachers understand their contextual environment and try to improvise in order to complete their learners' curriculum. These rural FP teachers, therefore, seemingly professionally gained PK skills on how to improvise outside the formal programmes and were able to make and use their own 'home grown' teaching resources to enhance teaching and learning in the classroom.

They professionally gained PK skills around making dolls, matching cards, flash cards and other different teaching resources.

From the discussion above, the FP teachers in the study professionally gained PK related to improvisation. Only teachers in township and rural schools apparently gained PK related to the improvisation of teaching resources. This relates to what Shulman (1987) and Cogill (2008) view as making efforts to present work in a way that interests and motivates learners and to provide suitable conditions so that learners understand material.

The discussion above indicated that outside formal programmes, each of the 24 FP teachers studied in all three contexts professionally gained PK. The FP teachers in township and urban schools professionally gained PK on the ability grouping of learners. It also emerged that teachers in township schools further gained PK related to handling of group work, monitoring and checking group work activities to ensure learning. The township schoolteachers also gained PK on how to provide appropriate class activities for different ability groups.

Findings further revealed that the FP teachers in the study, professionally gained PK related to handling learner diversity where they managed learners with learning difficulties. Teachers in township schools reported professionally learning how to manage slow learners whereas, urban teachers learnt to give such learners individual attention. In addition, urban schoolteachers explored gained knowledge of teaching pattern writing to learners who could not trace on lines and colour inside the lines of pictures. Only FP teachers in urban schools gained PK around paper tearing and paper cutting to develop learners' pencil grip skills as well as scaffolding learners with writing problems. The silence from the participants from the other two contexts (rural and township) could probably be explained by lack of resources.

Findings also revealed that all teachers studied in the three contexts gained professional learning of PK related to the use of teaching resources. Limited resources particularly in rural and township schools also offered the teachers in the study an opportunity to develop and improvise their own teaching aids which further promoted their professional learning. Banks, Leach and Moon (1999), Cogill (2008) and Shulman (1987) concur that teachers need to possess the knowledge around the 'how to' so that they present different topics to learners in ways which make pupils understand and enjoy learning. The next section focuses on teacher professional learning related to pedagogical content knowledge (PCK).

Pedagogical content knowledge

Thirteen of the teachers in this study reported professionally gaining PCK, which is a combination of subject content and teaching strategies. Pedagogical content knowledge as defined by Shulman (1986: 6) requires the teacher to know "the most useful forms of analogies, illustrations, examples, explanations, and demonstrations, the ways of representing and formulating the subject in order to make it comprehensible to learners." In this study, from their professional learning, the FP teachers reported gaining this knowledge of matching subject content with different approaches to make the concepts understandable for learners in teaching various topics. From the data generated, 13 out of the 24 FP teachers learnt how to intertwine content with pedagogy for delivering different concepts.

For instance, Participant 2 from a rural school expressed her professional learning of PCK related to use of pictures to teach subtraction in Interview 3, saying:

> *Yes, I learnt to use pictures first to teach subtraction. Let me say we are working out 5 minus 1, you take 5 pictures then you cancel 1 picture then we are left with 4 pictures. Then they write 5-1= 4 by counting the pictures that are not cancelled. After that they will start to use numbers only.* (Participant 2 Rural)

From the response, the participant professionally gained the domain of PCK using pictures, illustrations, analogies, explanations, and demonstrations to teach subtraction before moving to numerical figures (numbers). Picture/illustration strategy helped this teacher to learn to convey complex ideas to make them comprehensible to learners, an approach which often stimulates learner learning in the classroom. This strategy also helps learners to engage with the material which enhancing tactile hand-eye-mind connections that improve the ability to retain learning of concepts. Consulted literature, (Hughes 2011 and Machaba 2017) shows that the use of pictures supports brain work, helps to bridge and scaffold learners to work on a simplified scenario which enhances acquisition and the retention of Mathematics concepts. Drawing on the conceptual framework, the teacher professionally gained PCK which Shulman (1987) and Cogill (2008) say originates in the wisdom of practice illustrated by the teacher used pictures to teach subtraction.

Among the thirteen (13) participants, some commented that they professionally gained PCK on how to use rhymes to teach subtraction in Mathematics. For example, Participant 4 in a rural school in Interview 3 illustrated:

> *In Grade R, I learnt to teach subtraction as a [form of] play in Mathematics. Let's say 'eee 6 little monkeys jumping on the bed, 1 monkey fell down, mama called the doctor, the doctor said, 'no more monkey jumping on the bed.' 5 little monkeys … (and so on). That is subtraction in Grade 1 while in Grade R it's like a rhyme; they learn subtraction using a rhyme.* (Participant 4 Rural)

Participant 4 from the above response gained PCK on how to teach subtraction using rhymes in the classroom. The rhymes include the repetition of words, skills and ideas which are important for early brain development, given that FP is meant to create solid foundations for later learning (Verbeek 2014; Hugo 2010). This quote suggests the teacher's personal talents and interests (Cogill 2008) helped to enhance the acquisition and retention of Mathematics concepts. Surveyed literature, Kumar (2018) argues that rhymes or games help to improve teaching and learning processes which enhance communication and social skills development indirectly in the learner. Participant 4 professionally gained PCK related to what, is defined by Shulman (1986: 9) as, "an understanding of what makes the learning of specific topics easy or difficult" – in this case, the teaching of subtraction using rhymes.

Eight out of 24 participants mentioned their professional learning of PCK related to teaching of Mathematics through play. Participant 14 from a township school said during a focus group discussion:

> *…sometimes we go outside to play, they learn nicely and fast if we play. So, I learnt to teach them to count numbers. We make a circle then I said count, one, two… they count on. And after that I ask them, what is your number? So, she/he can remember my number is number 39, my number is number …, they can learn.* (Participant 14 Township)

This was further confirmed by another participant from an urban school who also mentioned her professional learning related to PCK in Interview 1, saying:

> *I learnt how to teach them to write in a playful way, so they don't know that they are writing. They will make patterns on cards as part of their writing exercises. I learnt to give them a lot of writing to do and maybe I will use like making up (sic) a card, maybe someone is sick that day [and] we make a card.* (Participant 17 Urban)

The quotes above suggest that the FP teachers professionally gained PCK related to teaching of counting and writing through play. These teachers from rural, township and urban schools indicated that they professionally gained PCK on how to teach learners Mathematics. Thus, teachers professionally learnt how to integrate play in Physical Education (PE) with Mathematics to promote learners' understanding. Consulted literature, Abramovitz (2012) argues that basic Mathematics and number concepts employed in FP classrooms set the basis for learning more advanced Mathematics concepts in later grades. Therefore, these teachers showed that they understood how to develop number concepts through play which would probably help learners to understand Mathematics.

Participant 17 professionally gained PCK on how to teach writing through play, in what Cogill (2008) would view as an enjoyable relaxed atmosphere which stimulates the interest of the learners and opens the opportunity for new knowledge. Hence, these teachers, professionally gained knowledge of PCK in-practice which Bertram (2011) explains as the knowledge that is acquired through experience and mostly practised and developed in the school environment. Learning through play can improve learners' attention and motivate them to practise higher-level critical thinking which promotes meaningful learning experiences (Mashiya 2014). Literature reviewed suggests that play inspires growth and intellectual development in Language, Literacy, logic, and Mathematics (Mashiya 2014; Van Hoorn *et al.* 2014). From the conceptual framework, Cogill (2008), Grossman (1990) and Shulman (1987) agree that PCK emphasises that teachers need to understand how to ease the teaching and learning of subject content for learners, through the use of clear explanation and appropriate analogies in an interesting way. Learning through play which the teachers in the study professionally learnt was one way of easing learning and of promoting comprehension.

Thirteen out of 24 participants made comments that suggested professional learning of PCK around teaching of story work through drama. For example, one teacher from an urban school talked of experiencing such professional learning during a focus group discussion, saying:

> *After we read the story, I learnt to teach that story in dramatic play by asking learners to act. …They are getting excited because each of them wants to talk, so that is another way of making them understand.* (Participant 18 Urban)

From the response, the teacher professionally gained PCK on how to use dramatic play to teach stories. Dramatic play motivates learners and at the same time teaches and encourages

expressive language, which in turn helps build learner confidence (Mashiya 2014). Moore (2008) points out that learning through drama contributes to both learners' achievements, their interest in the subject and uplifts their overall performance. Hence, the teacher professionally gained PCK which Cogill (2008) says is about providing good conditions for pupils to understand the work. When children engage in dramatic play, they actively experiment with the social and emotional roles of life and in the process, they learn. Literature reviewed, Al Harrasi (2012) showed that children like to move and be active; they like to play, chant, sing, make things, paint, draw and do other physical activities to enhance learning. Further, engaging in dramatic play stimulates and eases both teaching and learner learning in the classroom (Shulman 1987). Informed by the conceptual framework, the teacher professionally gained PCK which again, according to Cogill (2008) and Shulman (1987) enables teachers to make learning material comprehensible for students by presenting it in interesting and motivating ways.

With respect to PCK discussed above, the FP teachers reported professionally learning the use of pictures, rhymes, play and drama to teach different topics. The issue of PCK mainly emerged around the teaching of Mathematics. It emerged from the data that it was only FP teachers in rural schools who reported professionally gaining PCK around the use of pictures and rhymes in the teaching of subtraction. However, teachers in all three contexts also professionally gained PCK related to the use of play in teaching counting and writing. Only participants studied in urban schools professionally gained PCK related to the use of dramatic play to teach stories. Thus, findings indicated that FP teachers studied in the three contexts professionally learnt PCK, which has been defined as how to link pedagogy and content (Banks, Leach and Moon 1999; Shulman 1987 and Cogill 2008). Hence, professional learning outside the formal programmes may have developed and deepened teachers' expertise around their practices. The following section focuses on teacher professional learning related to curriculum knowledge.

Curriculum knowledge

The FP teachers also reported that they gained curriculum knowledge from their professional learning out of formal programmes. Curriculum knowledge is knowledge which should be taught to pupils at a given level which requires comprehension of their learning capabilities, the national and school syllabi, teacher teaching documentation and annual plans (Cogill 2008; Shulman 1987). In the context of this study, it was the content which FP teachers needed to teach their learners in the Grades One to Three. Only 14 (out of 24) participants shared their

professional learning experiences related to curriculum knowledge. They reported that they professionally gained curriculum knowledge related to when, what, how and where to teach their learners through classroom practice (Banks, Leach and Moon 1999; Hammond 2012).

A participant in a rural school confirmed during Interview 2 that she professionally gained curriculum knowledge, saying:

> *I learnt the different topics in CAPS, like in Life Skills there are different topics. For term one in Grade R a child must learn about herself, her family and also everything that is around the environment like shopping, transport, ...* (Participant 3 Rural)

Participant 3 from the response above professionally gained curriculum knowledge related to the Curriculum Assessment Policy Statement (CAPS) document. As highlighted in Chapter Five, the definition of CAPS document and other details were presented under records of practice. The participant professionally learnt that there are different topics for Life Skills in the CAPS document. It is important for FP teachers to possess curriculum knowledge because the curriculum acts as a road map for teachers and learners to follow on the path to academic success. From the conceptual framework, Cogill (2008) says teachers need to understand what pupils need to do and to achieve. This participant, from the above response further learnt that children needed to be taught starting from their lived experiences and the immediate environment. In the consulted literature, Mukeredzi and Nyachowe (2018) argue that prior knowledge acts as mental clips or catches for lodging new information which provide foundational building blocks for new content, skills and knowledge. Therefore, it is important for teachers to understand the curriculum as it plays a crucial role in developing, implementing, assessing, modifying and shaping the school. However, in other literature consulted, Darling-Hammond and Bransford (2012) and Tambyah (2017) showed that teachers face many challenges as they attempt to interpret and translate the knowledge and skills that are specified in written curriculum documents into teaching and learning activities and processes. Nonetheless, it would appear that Participant 3 was not facing any curriculum interpretation problems.

Drawing on the conceptual framework, the FP teachers professionally gained curriculum knowledge related to “knowledge of what should be taught to a particular group of pupils”

(Cogill 2008: 5). Hence, the teacher gained curriculum knowledge while on-the-job which was outside the formal programmes.

Participant 17 from an urban school also reported her professional learning during Interview 3, saying:

> *I learnt that CAPS guides me on how many lessons I must do per term, and for the whole year. It improves my sequencing of content because I learnt to go according to the guidelines, and I know how to manage my time so that I can finish the content for the learners.* (Participant 17 Urban)

The domain of curriculum knowledge was experienced from using the CAPS document. This participant suggests that they professionally gained curriculum knowledge skills related to what to teach and when, the sequencing of content, pacing and time management. In line with international policy on greater regulation of teachers' work, the current CAPS (2011) prescribes content, sequencing and pacing. Curriculum prescriptions also include topic allocation per term, allocation of time to a lesson, lesson planning, sequencing and pacing, including the number and frequency of assessments. The pacing prescribed in CAPS was meant to guide teachers so that the grade level curriculum could be accomplished. Teachers' pacing of curriculum delivery that is either too fast or too slow may lead to much of the prescribed curriculum not being taught or not covered in-depth. This, in turn, may lead to knowledge gaps in later grades. Literature consulted states that curriculum coverage is an acknowledged problem, a central concern of government and a key policy goal of the South African DBE's Action Plan 2019 (2015) seen in Goal 18 which specifies: "Ensure that learners cover all the topics and skill areas that they should cover within their current school year."

According to Naidoo (2019) the curriculum policy on pacing and hierarchical monitoring of enactment of pacing distracts teachers from the pedagogic goal of supporting learning, which could be another factor that hinders the curriculum coverage in schools. Naidoo further pointed out that teachers are focusing solely on keeping up with the prescribed pacing although it is doubtful that average and slower learners are learning at that pace. However, whether, like Participant 17, teachers were simply following guidelines with the hope of finishing the content or not would need further investigation. From the conceptual framework, participants professionally gained the domain of curriculum knowledge related to sequencing of content, pacing and time management in line with to the CAPS document which according to Cogill

(2008) and Shulman (1987) refers to management of classes and lessons. Hence, these FP teachers seemingly gained knowledge related to the curriculum outside the formal programmes.

From the discussion above, the FP teachers apparently gained professional curriculum knowledge related to the use of the CAPS document. Participants in rural schools gained curriculum knowledge around different topics in the CAPS document and how to teach learners, moving them from the known to unknown, while participants in urban schools reported their learning around sequencing of content, pacing lessons and curriculum coverage. Teachers in township schools did not make any comments related to curriculum knowledge, possibly because they viewed it as less important than other topics. The participants seemed to have professionally gained curriculum knowledge (Cogill 2008) through their practice. The next section discusses teacher professional learning related to knowledge of learners.

Teacher professional learning related to knowledge of learners and their characteristics

Participants reported that they professionally gained knowledge of learners within their school contexts. Knowledge of learners entails an understanding of learners through their background and behaviour (Cogill 2008). Knowing one's learners is a critical aspect of teaching as such knowledge helps teachers to select appropriate teaching strategies, experiences and activities suitable for learners' cognitive levels. The knowledge of learners and their characteristics would also assist FP teachers in this study to understand weaknesses, strengths, interests, motivations and how to better help their learners during instruction. Furthermore, teachers who know their learners as individuals can help them to appropriately direct the often confusing and anxiety-filled lives that they lead in their communities (Banks, Leach and Moon 1999; Hammond 2012; Shulman 1987).

Twenty (20) FP teachers reported that they gained knowledge of learners through interaction with them in their practice. Employed in an urban school, Participant 17 described her professional learning in this way, during a focus group discussion, "I learnt about their background; I now know that some are coming from broken families where there is no guidance, or no-one who teaches them English."

The participant professionally gained knowledge of learners related to their background. This would probably help her to accommodate such learners and scaffold their learning processes

during instruction. The quote also alluded to the absence of family role models who could help or teach learners at home. Participant 17 was from an urban school where the LOLT was English. Having role models who would assist children to practise using English at home would enhance their understanding of the language in the classroom.

Literature surveyed showed that children who grow up in families where there is a degree of dysfunction are more likely to have weak attachments with guardians and often portray a tendency of engaging in risky behaviours (Reichert *et al.* 2016). Hence, such learners may engage in unbecoming behaviour because they do not have role models to imitate at home. Furthermore, Stern *et al.* (2018) highlighted that family role models are important to children as they offer constructive feedback or praise; share knowledge (competence) in the context of a safe and welcoming space for reflection, affiliation, and support, free from derision or harsh judgment (relatedness); and give them opportunities to take responsibility.

From the above response, Participant 17 suggests having gained knowledge of learners related to their home background which could help in managing such learners in the classroom. Literature on this topic by McGuirk and Mai (2016) further points out that children from single-parent families are exposed to more stressful circumstances and experiences than their counterparts living with married parents. This may result in feelings of emotional distress along with a reduced capacity to function effectively in schoolwork. These learners were more likely to develop what Cogill (2008) calls yearning for attention and trust. Related to the above quote, Participant 12 from a township school who also sharing in a focus group discussion about her professional learning of knowledge of learners said:

> *I learnt that some learners are not getting love and care at home so when the child comes to school, she could appreciate your bag, or you – for example, 'umuhle mam' (you are a beautiful lady), all that is in an effort to show love to me which she does not get at home.* (Participant 12 Township)

This response suggests that the participant experienced professional learning related to knowledge of learners who lacked parental love and support at home. Parental love and care often create a positive environment which help develop self-esteem in children and may also help them to perform better in school. Often children who do not have affectionate parents or guardians tend to have lower self-esteem or may feel alienated, aggressive and hostile which might affect their schoolwork as well as their socialisation with other learners. Literature

reviewed, Mwoma and Pillay (2015) argue that South Africa faces the challenge of providing a response that could allow the most vulnerable children to receive love and care, and adequately address their need for parental support in their well-being and education. Such learners, as in the example given by Participants 12 tend to appreciate their teachers as a way of showing love which they do not get at home.

In contrast to the above quote, Participant 18 from an urban school expressed her professional learning in Interview 1 saying: "…I learnt that if you are too lenient to [with] them, they can take advantage, and do not want to do their work". The participant professionally learnt knowledge of learners that being lenient would dissuade learners from doing schoolwork. Being lenient generally implies a mild and tolerant disposition or effect, which is mostly not severe, harsh or strict. A strict teacher is often inflexible when dealing with learners and may not tolerate any mistakes or carelessness on the part of their part. On the other hand, such teachers may produce learners who are extra careful with their work. While the finding may be linked to what Shulman (1987) calls knowledge of specific learners, their strength and weaknesses, this participant portrays a sense of being strict. As strict teachers often give learners strong motivation to make them engage and remain active in class, the belief may be that keeping them engaged can enhance their achievements. However, literature reviewed also shows that being strict is not one of the qualities of a good teacher, as alluded to by Kim, Jörg and Klassen (2019) who point out that a good teacher is smart and skilled, disciplined, has a sense of humour, is creative, friendly, emotionally controlled, a good communicator, fair, patient, and respectful.

From the response by Teacher 18, it would appear this participant may not have possessed the expected teacher qualities as outlined Kim, Jörg and Klassen instead being likely to induce fear in learners. This finding contradicts the consulted literature whereby Cashdollar (2018) argues that developing positive teacher-student relationships based on trust and care, is necessary to foster a positive and thriving learning environment that produces positive pupil outcomes. Drawing on Cogill (2008) and Shulman (1987), the teachers seemingly professionally acquired knowledge of learners and their challenges, in this case, those learners who appeared to lack parental support and love at home.

Still on the topic of the knowledge of learners, Participant 3 from a rural school, highlighted her professional learning in Interview 2, saying, "Yes, due to polio he cannot use this side, he becomes happy if you give him the chance to do something." The teacher realized the physical

condition of the learner and things that he enjoyed; knowledge which was vital for managing such learners. Poliomyelitis (Polio) is a viral disease that may cause infant death and paralysis in children under the age of five years (Gates 2009). Often such children are stigmatised, excluded and looked down upon, so getting them involved is likely to improve self-confidence and self-worthy. Therefore, teachers who engaged such learners during instruction promoted their sense of belonging and participation in their learning. Drawing from Cogill (2008), such teachers display particular personal talents related to empathy and building confidence in learners. Further, the teacher was seemingly playing a pastoral role as stipulated by the South African Education Act (DoE 2005) that teachers practise and promote critical, committed and ethical attitudes towards developing a sense of respect, care and responsibility towards learners.

Other teachers also reported that they became aware that learner activities needed accompanying learning resources for the learners to accomplish the tasks. This was explained by Participant 2 from a rural school in Interview 1, saying:

> *I learnt that if you give learners a project to do, you are also supposed to give them papers and some crayons; if you didn't do that, they won't do the work…* (Participant 2 Rural)

From the response above, the teacher professionally learnt that in rural schools, learners had to be given resources for carrying out tasks and assignments. It is vital for teachers and schools to provide the necessary resources to enhance the learning process, particularly in rural schools where communities are poor. The importance of teaching resources was discussed in detail above. This finding supports consulted literature where Kapur (2018) stated that learners belonging to marginalized, deprived and socio-economically backward areas of society, cannot afford the books and any materials required for learning. This was apparently the case with learners in this rural school. Drawing on the conceptual framework, the teacher professionally gained knowledge of learners and their characteristics (Shulman 1987).

From the discussions above, teachers in three contexts seemed to have professionally gained knowledge of learners. Teachers in urban schools reported professionally gaining knowledge related to learner backgrounds, in particular lack of role models who could assist them at home. On the other hand, teachers in township schools, from their knowledge of learners also realized that many learners lacked parental support at home. Concomitant to this, teachers in rural schools also reported professionally learning how to deal with learners with disabilities. These

rural schoolteachers also learnt that learners always needed to be given learning materials to enable them to do their class work. Thus, FP teachers seemed to have professionally gained knowledge of learners and their characteristics within different educational contexts (Shulman 1987; Grossman 1990). The next section discusses teacher professional learning related to knowledge of educational contexts.

Knowledge of educational contexts

Shulman (1987) describes knowledge of educational contexts as entailing a deep appreciation of the environment in which teachers perform their duties including an understanding of the expectations, constraints and opportunities that the teaching district imposes on the teacher. It further involves school factors that affect instruction such as setting, culture, values, norms and guidelines from the DBE. Furthermore, community factors come to the fore such as learners' backgrounds and their families' weaknesses and strengths that shape their learning. In this study, knowledge of context is understood, based on the explanations of this author. The domain of context knowledge is discussed through three sub-themes: knowledge of the school; knowledge of the community and knowledge of culture, norms, and values. These sub-themes are discussed in this order.

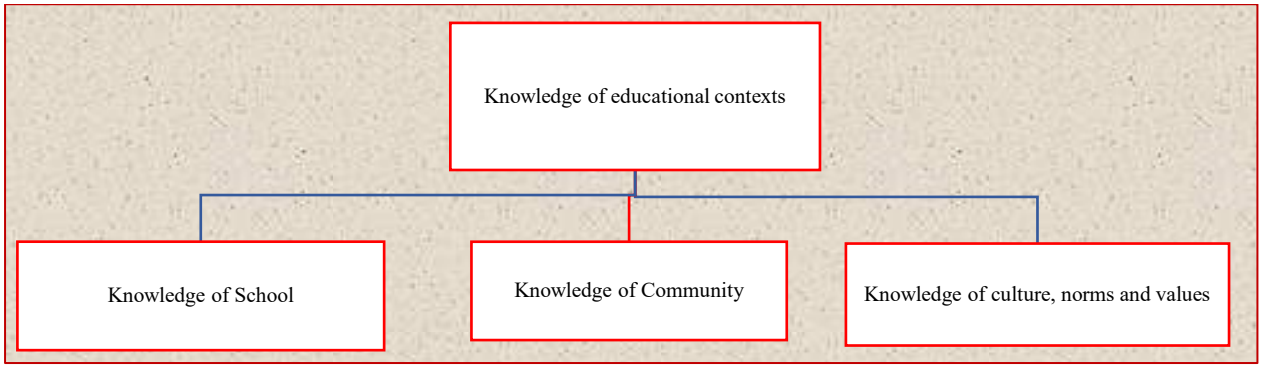

Figure 6.6: The sub-themes emerged under knowledge of educational contexts

Source: Researcher (2021)

Teacher professional learning related to school knowledge

Twenty out of the 24 FP teachers in this study reported professionally gaining school knowledge related to limited resourcing. These teachers learnt that schools were under-resourced in terms of teaching materials, financial support and computers. Rural schools emerged as struggling from severe under-resourcing where some teachers had to provide resources for their learners. This was summarised by Participant 1 from a rural school during Interview 1 who experienced professional learning related to school under-resourcing saying,

"We are in a deep rural school, eeh (laughing)… I have learnt that the resources are inadequate…"

From this comment, it can be deduced that teachers professionally learnt that the schools were under-resourced. Rural schools are generally characterised by various impeding factors including but not limited to, under-resourcing which negatively influence the delivery of good quality education. Given that severe under-resourcing, teaching in rural schools often becomes a struggle where teachers end up 'making-do' (Mukeredzi 2009) with whatever is available to produce effective lessons. While the shortage of resources in these rural schools might hinder quality teacher learning, on the other hand this may also enhance teacher professional learning through the development of improvisation skills highlighted earlier under PK. Notwithstanding, these constraints arising from the scarcity of teaching resources in rural schools is likely to negatively impact on teaching and learning in the classroom which Govender (2016) notes, limits teacher professional learning.

In this study, while participants in all three contexts, reported professional learning related to computer resources, for rural schools, there was a complete absence of computers while the opposite was true for teachers in urban and township schools. For example, Participant 3 from a rural school said during Interview 1, "Hey, no mam I am not using internet at school because we do not have access to computers."

Participant 14 from a township school also commented during a focus group discussion that there were enough computers for teachers at her school saying, "Everyone in our school have [has] got a computer. Even teachers, we have laptops to finish our work at home." From these quotes, the teachers professionally gained school knowledge related to computer resources. The computers would enable professional learning as teachers could research and learn in preparation for their work. From consulted literature, Dina and Ciornei (2013) stated that computers offer teachers the opportunity to realise didactic operations for evaluation and to deliver instructional materials which enhance learners' development and creativity. While it is not known how schools procure resources, the responses above illustrate disparities between urban and rural schools in terms of resourcing provision. Literature reviewed, (Mukeredzi 2013a; 2016) shows that rural education has been regarded as a low priority area globally because urban/township people are more vocal and organized than their rural counterparts and, so they end up drawing attention and monopolizing government focus at the expense of rural communities. Thus, education delivery in many of the rural schools generally becomes

inadequate in many respects which impacts on teacher professional learning. Informed by the conceptual framework, the FP teachers studied professionally gained school knowledge related to contextual factors and to their constraints (Shulman 1987; Grossman 1990).

Participant 10 from a township school reported during Interview 3 having gained professional knowledge related to the SGB saying:

> *From the School Governing Body, I learnt how the school is run. I have learnt that if the SGB is strong and stands for the truth, the school is going to be a good school and have good results.* (Participant 10 Township)

Teacher professional learning offered the participant school knowledge related to the roles of the School Governing Body (SGB). The teacher learnt that the SGBs had both negative and positive impacts on the school. The South African Schools Act 84 of 1996 (South Africa 1996: B-12) stipulates that SGBs are mandated to promote the best interest of the school and strive to ensure its development through the provision of quality education for all learners at the school. Generally, the SGB needs to support the teachers, principals and other staff to perform their professional functions effectively. Literature consulted, Ntuli (2017) argues that regardless of the poverty level of the community, a well-functioning SGB and parental involvement in the school governance, would guarantee a successful schooling experience for the learners. Drawing on the conceptual framework, the teacher professionally gained school knowledge around factors that influenced the school and its governance (Shulman 1987; Grossman 1990).

With respect to school knowledge discussed above, participants in rural schools apparently experienced professional learning related to the inadequacy of resources in their contexts, including computers. Teachers in urban and township schools did not refer to gaining school knowledge in relation to a shortage of resources. It also emerged that township schools had enough computers for all teachers, and it was these teachers in township schools who reported professional learning of school knowledge related to the SGB. The participants seemed to have gained school knowledge which Shulman (1987) locates under knowledge of educational contexts. The following section focuses on teacher learning of educational contexts related to community.

Knowledge of educational context related to community

Knowledge of community is another aspect which emerged under educational contexts. Civil (2016) viewed knowledge of community as an understanding of learner backgrounds, their families and the community at large. Twenty out of 24 participants experienced professional learning around the involvement of the community in school activities. However, it may not mean that the rest did not gain this knowledge; it could be that they did not view it as an important aspect.

On the same note, Participant 1 from a rural school explained her professional learning around community in Interview 3, saying, "We write letters to the parents but, I have learnt that they do not turn up."

In addition, Participant 18 from an urban school also expressed her professional learning related to context knowledge during Interview 1, saying, "The community, …during parents' meetings, you can see the interest of the parents who care, I only have about nine kids [children] in my class whose parents came."

The above response suggests knowledge of the community that the participants professionally gained related to lack of parental support for school activities. Participant 1 indicated that parents did not cooperate at all with the school while Participant 18, from an urban school, indicated that only a few parents supported school activities. This finding supports literature surveyed (Bhengu 2013) which indicates that barriers and boundaries between schools and parents still exist despite attempts to eradicate them. Nevertheless, the absence of parents' involvement in school activities is likely to hinder the performance of both teachers and learners in the classroom. Mukeredzi (2009) noted that good school and teacher-parent relations with support from both sides acknowledge parents as complementary educators; this relation is effective in fostering teacher professional learning, classroom practice and control as well as learner discipline. In this study, the FP teachers studied reported professional learning related to teaching without support from the parents. Shulman (1987) and Grossman (1990) explain that teachers need to possess knowledge of educational contexts of the wider community – families, their strengths, weakness, and interests. Thus, the lack of parental support of school activities may negatively impact the performance of learners and teachers in the classroom.

From the findings above, all the FP teachers studied across the three contexts reported professional acquiring knowledge about their communities. Poor parental cooperation emerged in urban, rural and township schools however, some parents in urban schools supported school activities. This knowledge of the community and parents' behaviour is consistent with what Banks, Leach and Moon (1999) and Grossman (1990) refer to as the value of knowledge of community and their constraints which is vital for enhancing understanding and supporting learners. Hence, these teachers seemingly professionally gained knowledge of educational and contextual factors (Shulman 1987). The following section discusses teacher professional learning related to knowledge of culture, norms and values.

Knowledge of context related to culture, norms, and values

The FP teachers also professionally gained knowledge of culture, norms and values within their contexts. In this study, 20 out of 24 participants expressed their professional learning related to culture, norms and values. This was confirmed by an urban teacher during Interview 2 who said:

> *In this photograph, we were doing cultural activities. From here I learnt that in South Africans, we have different cultures and I learnt to respect each other's religion.* (Participant 17 Urban)

Culture generally refers to the ideas and social behaviour of a certain people or society. Hofstede (2011: 3) mentioned that the word culture is defined as "collective programming of the mind that distinguishes the members of one group or category of people from others." Cultural differences may cause misunderstandings, unintended offense, ill feelings and stress between the teacher and learners. From the response, the FP teacher professionally learnt that there were different cultures and religions in South Africa. Literature consulted, Villegas (2019) indicates that multicultural diversity helps teachers to learn more from learners and be able to meet their needs and differences between their backgrounds, behaviours and attitudes. Therefore, respecting and understanding learners' religion and culture probably led the FP teacher to professionally learn different ideologies which could result in developing a happy and peaceful school environment. Drawing on the conceptual framework, it appears these teachers professionally gained part of what Shulman (1987) refers to as knowledge of educational contexts, including their purposes, culture, values, philosophical and historical grounds. The quote above suggests that these FP teachers in this study professionally learnt that learners were diverse in their cultures.

From the discussion above, the FP teachers from urban schools reported that they professionally gained knowledge of contexts related to culture, norms and values. These teachers in urban schools reported acquiring professional knowledge around various cultures and religions. Therefore, these teachers seemed to have professionally learnt knowledge of contexts related to cultures (Grossman 1990; Shulman 1987).

With regard to knowledge of educational contexts, the FP teachers across the three contexts during focus group discussions, face-to-face interviews and photo-elicitation interviews reported that they experienced some professional learning outside the formal programmes. Knowledge about school that was reported related to under-resourcing which was critical in rural schools. It also emerged that the township and urban schools had adequate resources, including computers. The township FP teachers in this study also reported that they professionally gained school knowledge related to the effect of the SGB on school-related issues while teachers in urban schools reported gaining knowledge around different cultures and religions. Poor cooperation between school and parents emerged across all three contexts, however, a few parents in urban schools were noted to be cooperative. In the next section I summarize the findings relating to Research Question Two.

Section one summary

In the section above, the findings from individual face-to-face interviews, photo-elicitation interviews and focus group discussions revealed that the FP teachers gained PK more than other domains. The PK that was gained related to ability grouping and using grouping strategies, handling learner learning diversity, use of teaching resources, and resource improvisation.

From classroom practice, the FP teachers reported having gained PCK. The issue of PCK mainly emerged around the teaching of Mathematics where the teachers reported that they gained professional learning within this domain of knowledge around the use of pictures, rhymes, play and dramatic play to teach different topics.

Concerning the domain of curriculum knowledge, only the teachers in urban and township schools reported having acquired this kind of knowledge related to the use of the CAPS document and teaching from known to unknown concepts. These teachers also gained knowledge related to sequencing of content and pacing to ensure curriculum coverage.

The findings also indicated that the FP teachers gained knowledge of learners related to scaffolding learning in the classroom. Lack of parental support in children's work at home and also lack of parental support in school activities was reported across all the contexts. Participants also realized that there were learners with disabilities, and they gained knowledge of how to manage them in the classroom.

In relation to knowledge of educational contexts, it emerged that rural schools were faced with an acute shortage of resources including computers which as research (Mukeredzi and Nyachowe 2018) indicates, inhibits effective teaching and learning. Furthermore, the FP teachers experienced professional learning related to the roles of the SGB in the school.

Lastly, findings revealed that the teachers gained knowledge of educational contexts related to culture, norms, and values. In this study, it was the FP teachers from urban schools who professionally gained knowledge related to different cultures and religions.

Having discussed answers to Research Question Two on kinds of knowledge gained, the following section discusses the findings that address Research Question Three around the influence of professional learning.

Section two: The influence of FP teacher professional learning on classroom practice

This is the second and last section of the chapter. In discussing and presenting findings in this section, I draw on Cogill's (2008) list of teaching activities, teachers' personal dispositions and the qualities of good teachers to explain how professional learning influences teacher practice. I also draw on literature to show how the findings relate to existing research. Research Question 3 being addressed is:

"*In what ways does professional learning influence their teaching practice?"*

Themes that emerged

From the data, the FP teachers' professional learning influenced their classroom practice in relation to teaching strategies. The sub-themes and related processes that emerged around this major theme related to; assessment, interaction in the classroom, teaching and learning through play, handling group teaching, teaching handwriting, teaching drawing, and whole-class

teaching. This section is organised around these sub-themes. The major theme and sub-themes that emerged from data are represented in Figure 6.7.

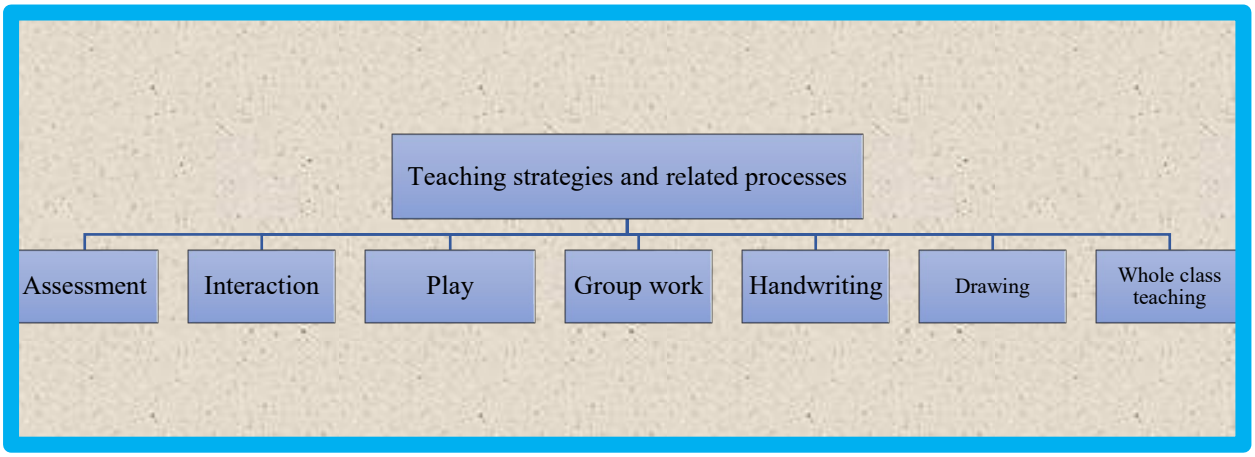

Figure 6.7: Sub-themes around professional learning that influences teachers' practice
Source: Researcher (2021)

Table 6.4 below indicates the number of participants who referred to the professional learning influence on the different teaching strategies and processes. The full table in Appendix Nine shows the number of responses for each domain. Overall, from the participants' comments assessment, interaction and learning through play, were mostly mentioned as illustrated in Table 6.4. This might be because the teachers engaged in these lesson delivery processes more than others in their classrooms and found them easier to explain.

Table 6.4: Number of times that participants' comments suggested the professional learning influences on teachers' classroom practice

	Assessment	Interaction	Play	Group work	Handwriting	Drawing	Whole class teaching
No. of Responses given	**24**	**20**	**19**	**16**	**13**	**11**	**6**

From Table 6.4, all 24 participants made references to the influence of professional learning on the assessment of learners' work, followed by interaction (20), teaching through play (19), managing a group work strategy (16) and teaching handwriting was just over half (13). Teaching drawing (11) and whole class teaching strategy (6) were the least often mentioned. The next section discusses the influence of teacher professional learning on the teachers' teaching strategies and related processes.

The influence of professional learning on teaching strategies and related processes

With regard to teaching strategies, as highlighted above, the FP teachers reported that their professional learning influenced classroom practice in relation to: assessment; interaction; play; handwriting; group work; drawing; and whole class teaching. While assessment, group work as well as teaching and learning through play were reported as having been influenced by professional learning, these aspects were discussed in detail in previous chapters, (assessment in Chapter Five, group work and learning through play in Chapter Five) therefore to avoid repetition, these aspects are not discussed in the present chapter. Hence, only four aspects: classroom interaction, teaching handwriting, teaching drawing and whole class teaching are discussed in this chapter.

The influence of professional learning on interaction

Interaction "is a transaction between two entities, typically an exchange of information but it can also be an exchange of goods or services" (Hornbæk and Oulasvirta 2017: 4). In this study, interaction is understood as a kind of dialogue that occurs between the FP teachers and learners as well as among learners themselves, sharing information for educational and or socialisation purposes. Teacher-learner as well as learner-learner interaction is important for facilitating the achievement of academic goals. It is also vital for teachers to promote learner-learner interaction so that they can build relationships, and trust, and bond with each other which may contribute to an effective teaching and learning environment in the classroom and the school.

Professional learning influenced teacher interactions in the classroom. Twenty out of 24 teachers talked about influence of professional learning related to teacher-learner interaction within their classrooms. Through professional learning the FP teachers realised that they had to increase teacher-learner interaction during the teaching and learning process. For example, Participant 3 from an urban school commented in Interview 1:

> *I realised that I needed to interact with my learners more, as a result I had to learn their language (IsiZulu) which is a tremendous help for me in the classroom.* (Participant 3 Urban)

From professional learning the teachers realised that interaction was crucial. The extract shows that professional learning influenced Participant 3 to learn IsiZulu in order to improve teacher-learner interaction in the classroom. Literature surveyed, Lenyai (2011) argues that second language learning in South African schools is of supreme importance given the multilingual nature of the country. Therefore, it is vital for FP teachers in these all contexts to learn second

languages to promote interaction within and outside the classrooms. Generally, teachers are known to be life-long learners, therefore Participant 3 could also learn through learner-teacher and learner-learner interaction. This required the teacher to be passionate about learning and to build confidence in speaking IsiZulu. This is in line with the DoE's Language in Education Policy (LiEP) of 1997 which states that children at the FP must be taught in their mother tongue in order to improve understanding. Hence, the use of learners' home language (mother tongue) in the classroom was likely to promote a smooth transition between home and school given that when learners interact, they become more involved in the learning process and this speeds up the development of basic literacy skills. Drawing on the conceptual framework, professional learning influenced the teacher's personal dispositions (Cogill 2008) and consequently motivated her to learning the language of IsiZulu and improve interaction in the classroom.

Another participant from an urban school in Interview 2 also explained:

> *When I got angry, I used to raise my voice for [at] my learners, but I noticed that when I raise my voice, they won't listen. So now I learnt to calm myself down and interact with them nicely.* (Participant 1 Urban)

Professional learning influenced the participant to re-think the effect of their voice projection on learners which made her improve classroom interaction. This FP teacher was able to 'tame' her emotions as she developed an understanding of the reactions of learners. Literature reviewed showed that teachers need to establish effective interactive relationships with each of their learners within their classroom as some learners may have psychological deficiencies which could stem from their dysfunctional family background (DBE 2014).

Further, scholars (Beilock *et al.* 2010; Frenzel 2014) emphasize the link between teacher emotions and student achievement, arguing that teachers' emotions interfere with classroom processes and affect learners' behaviours. Therefore, it becomes vital for teachers to control their emotions and be aware of the tender minds which they teach and lead. This finding links with Mumhure (2017) in Chapter Two who indicates that professional learning improves teacher effectiveness which may include teacher interactive skills. Cogill (2008), from the conceptual frameworks, indicates that teachers need to understand that learners learn from didactic exposure. Thus, effective teacher interaction exposes learners to more learning.

It would appear that the influence of professional learning on interaction was experienced in all contexts. Another teacher, Participant 13, from a township school also commented during a focus group discussion on how professional learning influenced their classroom practice related to classroom interaction. She explained: *I discovered that if you communicate with learners, they stop being afraid of you and can learn better. They become confident.* Further, Participant 1 from a rural school also talked, during Interview 1, of how professional learning had influenced interaction in the classroom saying:

> *I now try to talk to every child even if they are not raising hands, I used to pick those raising their hands, but I learnt that pointing at those not raising hands is important. I find that the child gives a correct answer. So, now I call them one by one so that everybody talks, yah.* (Participant 1 Rural)

The extracts above suggest that gaining some professional learning influenced the FP teachers to understand the need for all learners to interact in the classroom. Participant 13 was then able to interact with learners and develop their confidence. Generally, good interaction skills of teachers tend to enhance learner academic success as the teacher can explain material clearly and appropriately for learners to understand well. Professional learning also influenced these FP teachers to recognise the importance of learner participation which made them ensure that all learners interacted in the classroom, something which is expected of teachers in order to make essential connections with their pupils. In consulted literature, Pöysä *et al.* (2019) argues that the interaction that occurs between teachers and learners increases learning comfort because students feel that they are understood, heard, and appreciated. Hence, interaction is crucial for all learners because it is through interaction that they can learn and achieve good results. Informed by the conceptual framework, through professional learning, these teachers seemingly developed mature personal relationships with their learners through interaction (Cogill 2008).

From the foregoing discussion, professional learning influenced teacher classroom practice across the three contexts studied in relation to classroom interaction. The next section discusses influence of professional learning on teaching handwriting.

The influence of professional learning on teaching handwriting

The issue of handwriting emerged during all the three data generation methods in the three research contexts. According to Kgomo (2013: 13) handwriting is "an art form, a functional

tool and a taught skill that involves coding of mental ideas into visual shapes and has rules that differ from culture to culture. It is also a skill that is dependent on the relationship between the eye and hand." Only thirteen (13) of the 24 participants expressed that their professional learning influenced the teaching of handwriting in the classroom. For instance, Participant 2 from an urban school reported the following during Interview 2, "I realized that I had to change my handwriting on the chalkboard. After that, children started copying the sentences more easily and more neatly than before." Good teacher handwriting contributes to reading fluency and activates learners' visual perception of letters. Consulted literature, Kgomo (2013) suggests the need for teachers to model legible and neat handwriting as learners regularly copy what they write on the chalkboard, whether the writing is good or bad. The FP teacher realized the value of modelling good handwriting for their learners through professional learning and enacted this change.

In addition, another teacher from a township school also talked of how professional learning influenced her handwriting when she explained during Interview 1:

> *I didn't know that there is specific handwriting for FP and why it is very important to teach it. …but I now know, and I am emphasising it and doing it properly.* (Participant 4 Township)

Through professional learning the FP teacher developed an understanding of the value of appropriate handwriting for FP level and how to teach it. Legible handwriting is vital and should be taught and nurtured throughout the FP years as poor handwriting skills affect learning. Therefore, it is vital for the FP teachers to follow the guide supplied by the DBE in order to teach handwriting to Grades R to 3 learners correctly. Research shows that the more correctly and effectively handwriting is taught in the early grades, the less time will be required for teaching or correcting it in later grades (DBE 2011b). Further, Blease (2014) argues that illegible handwriting often demonstrated by educators, causes learners to copy work inaccurately and this leads to learners acquiring incorrect facts, which negatively impacts on their learning and understanding. Therefore, the FP teachers needed to be very accurate and well equipped in developing learners' handwriting skills at this level. Professional learning influenced the participant to understand what Cogill (2008) called awareness of what pupils are to do and achieve, in this case appropriate handwriting at FP level.

Experiencing professional learning outside the formal programmes influenced Participant 4 from a township school and Participant 2 from an urban school to realise the importance of good handwriting and teaching the style of handwriting appropriate for FP learners. Through their own handwriting, teachers made clear what learners were required to do and achieve (Cogill 2008). The following section discusses the influence of professional learning on FP teacher classroom practice related to teaching drawing.

The influence of professional learning on teaching drawing

Hall (2018) views drawing as an open-ended activity that offers children a flexible means of representation and communication. The CAPS document states that drawing occurs as part of all four subjects (i.e. Home Language, First Additional Language, Mathematics and Life Skills) which are offered at FP level (DBE 2011a). In this study, drawing is understood not only as part of the art section of the Life Skills subject but also as an approach used by teachers to understand their learners' creativity, feelings, experiences, thoughts, etc.

Eleven of the 24 participants across the three contexts reported that professional learning had influenced their pedagogies in relation to their teaching of drawing. For example, Participant 3 in a rural school explained during Interview 1:

> *I didn't know that drawing was part of writing. I thought drawing was a funny thing to do with learners, but I am now aware and able to teach drawing as part of writing.* (Participant 3 Rural)

Through professional learning the participant developed an awareness of the value of teaching drawing in the classroom as it allows children to express what they are thinking, feeling and failing to express in words. Therefore, learners' drawings may help teachers to understand children holistically, including aspects of their background, experiences, challenges, attitudes and beliefs, etc. Consulted literature, Mackenzie and Veresov (2013: 28) argue that

> *... if children are not encouraged to use drawings as a legitimate sign system, on its own or alongside early attempts at conventional written language, they may be unable to express their ideas or knowledge in a 'written' text format.*

Therefore, FP teachers should take drawing activities seriously and set aside time to look at children's drawings as this process forms a strong foundation for other learning areas. This is because drawing nurtures learners' interests and stimulates participation during teaching and

learning time. The influence of professional learning was also reported around drawing by Participant 4 from a township school, during Interview, 1 who said:

> *...when I was teaching Grade R I wasn't serious about drawing, but now I am changed. I am now able to teach drawing. I can now identify learners with barriers through teaching drawing.* (Participant 4 Township)

Engaging in professional learning programmes outside the formal programmes also influenced Participant 4 to be able to teach drawing in the classroom. This teacher became able to identify learners with learning barriers through drawing, as FP learners were able to express themselves in their drawings and these could reveal critical information which would not have ordinarily been revealed. Literature reviewed, Alant and Sherwood (2017) argued that drawing is a crucial part of children's development as it increases their cognitive processes. When teachers teach drawing effectively, they stimulate learners to constantly think or feel something and this builds their knowledge, confidence and visual skills. Given that these were FP teachers, from teaching drawing they probably gained awareness and insight of what was going on in the children's minds, their uniqueness and originality, which information would help them to build a strong learning foundation for the children's later learning. This finding relates to literature surveyed in Chapter Two, where Vail (2011) views teachers as leaders and change agents in their own practice. Through teaching drawing, the teacher was likely to influence the child's thinking about him/herself.

From the discussion above, professional learning influenced the teachers in all contexts in their teaching of drawing. The following section discusses influences of professional learning around whole class teaching.

The influence of professional learning on whole class teaching

Engaging in professional learning outside the formal programmes also influenced the FP teachers' teaching strategies in relation to whole class teaching method. The whole class teaching strategy involves teaching a whole group of learners in the classroom, who study together face-to-face, so that they actively collaborate and exchange ideas with their educator and with each other during the learning processes (Bovill 2019). In this study, only six teachers in urban schools mentioned that professional learning influenced them to use the whole class teaching strategy in their classrooms.

For example, Participant 1 from an urban school, in Interview 1, stated: “I realised that the groups couldn’t work for me, because if I give them work, they end up not doing the work, but making [a] noise, so I now use the whole class teaching method.” Through professional learning this teacher was able to change from a group work teaching strategy to the whole class teaching pedagogy. Literature reviewed supports this finding, for example Mercer and Howe (2012) argue that whole class teaching is seen as an ‘active teaching’ model promoting high-quality discussion and dialogue between learners and teachers. On the contrary, Bovill (2019) and De Lannoy and Hall (2012) note that the whole class teaching method may be possible only in small classes but challenging in large classes as educators may not be able to give individual attention to learners during the teaching and learning process.

In South Africa, the maximum recommended learner-educator ratio for primary school classrooms is 40:1 and for secondary schools, 35:1 (Motshekga 2012). However, this recommendation was seemingly different from the actual situation on the ground in South African schools which were experiencing extremely large numbers of learners in the classrooms. John (2013) discovered that some FP classes in South Africa had up to 165 learners in a single Grade 3 class and 140 learners in a Grade 2 class. This confirms by Venktess’ (2011: 3) prior research which indicated that learner numbers in FP classrooms range from 50 to 165. Since these FP teachers were all in urban schools, they had fewer learners in their classrooms allowing them to be able to adopt whole class teaching pedagogy, as noted by Mercer and Howe (2012). However, drawing on Cogill (2008), professional learning seemingly influenced the participants to understand strategies that would work for them in their specific contexts.

One of these six teachers from an urban school also confirmed during a focus group discussion that professional learning influenced her classroom practice and was able to change from group work to the whole class teaching method saying:

> *I am now using [a] whole class teaching method. … It’s hard for learners to focus in [when doing] group work. I must give them all full attention for them to stay focused.* (Participant 23 Urban)

Also, from this response Participant 23, through professional learning, was able to adopt whole class teaching method which seemingly enabled her to give all learners full attention so that they could maintain focus. However, this method has some disadvantages as it is more of a lecture method or teacher-centred approach where the teacher transfers knowledge and

information to learners (Waldeck and Weimer 2017). Also, considering that these were FP learners with short attention spans, it is often difficult to keep such learners focused. While Webb *et al.* (2019) agree that the whole class teaching pedagogy give the majority of learners the highest amount of their teachers' attention, other literature shows that "psychological factors like fear of making mistakes, shyness, anxiety, lack of confidence, and lack of motivation hinder students from speaking" (Juhana 2012: 100) when teachers use the whole group teaching approach. However, six participants in this study had experienced some professional learning and were influenced to change from group teaching to the whole class teaching pedagogy.

From the discussion above, professional learning influenced six FP teachers' classroom practice related to the whole class teaching strategy. Only FP teachers from urban schools reported that professional learning had influenced them to use the whole class teaching method instead of group work. The next section summarizes findings addressing Research Question Three.

Summary of Section two: Influence of professional learning

From the responses, it appeared that the influence of professional learning on teachers' pedagogical strategies and the related processes was around interaction with learners during instruction, teaching handwriting and drawing, and shifting from group work to whole class teaching.

In relation to interaction, findings indicate that the professional learning engaged in by FP teachers influenced their interaction within the classroom setting. It emerged that some teachers realised the value of interaction which caused them to learn the mother tongue of their learners to enhance interaction in the classroom.

With reference to handwriting, it was reported that the professional learning made teachers in all contexts develop an understanding of the value of good handwriting and the appropriate type of writing for FP learners. Through this realization, teachers started teaching appropriate forms of handwriting for this phase.

Findings also show that professional learning influenced the FP teachers in township and rural schools to take drawing seriously and teach it appropriately in the classroom. Through

professional learning, these FP teachers realised that drawing was part of writing which helps learners to express themselves.

Lastly, on whole class teaching, only the teachers in urban schools reported that professional learning influenced them to shift to whole class pedagogy from a group work teaching strategy.

The following section presents the chapter summary.

Chapter summary

The chapter presented the findings for Research Question Two and Research Question Three. In this study, all participants in urban, rural and township schools reported gaining different domains of knowledge through their classroom practice: PK, PCK, curriculum knowledge, knowledge of learners and their characteristics and knowledge of educational contexts.

The second section discussed findings for Research Question Three about the ways in which professional learning influenced classroom practice, as reported by the FP teachers. The findings in this section indicated that professional learning experienced outside the formal programmes influenced the participants studied in relation to teaching strategies and the accompanying processes in their classrooms – particularly classroom interaction with learners during instruction, teaching handwriting, drawing, and shifting from group work to whole class teaching strategies.

In the next Chapter, the discussion, conclusion, and synthesis of the study are discussed.

CHAPTER SEVEN
DISCUSSION, CONCLUSIONS AND SYNTHESIS

Introduction

The aim of the study was to understand how Foundation Phase (FP) teachers engage in professional learning outside the formal programmes and how that learning influences their classroom practice. Globally, teacher professional learning is viewed as a mediating tool and a driver for enhancing learner outcomes and improving teacher knowledge and teaching quality, without which the quality of teaching and learning remains low quality (King 2016; Leanard 2015; UNESCO 2015).

The importance of FP learning is lauded by many countries for instance, the National Policy for Integrated Early Childhood Development (IECD) in Nigeria took a bold step towards providing a solid foundation for the learning and development of every Nigerian child from FP (Newman and Obed 2015). However, teaching and learning at FP in South Africa has suffered prolonged, gross neglect (Green *et al.* 2011; Hugo 2014; Savides 2017). The South African Department of Basic Education admitted that 2 875 unqualified or underqualified teachers were teaching in KZN in 2017 (DBE 2018). The situation was more pronounced in the FP than in the other phases. Given this inadequate supply of qualified FP teachers that has existed, Spaull *et al.* (2016) argue that weak foundations which have been provided in Grades 1–3 constitute one of the major factors leading to poor learning outcomes in later grades. This is supported by the UN (2013) which asserts that the problem of educational underperformance begins in the FP and goes up to high school (FET) and further and needs to be addressed from that phase.

A recent teacher education policy in South Africa provides a strategic framework whose goal is to provide every class, in particular within the FP, with a qualified teacher by 2025 (DBE 2015). In this regard, Petersen (2017) indicates that, in the previous five years, the South African Department of Higher Education and Training had invested liberally in training of FP teachers, heeding the call to increase the number of qualified teachers in this category and that their pre-service education needs to be overhauled. However, research shows that university courses are narrow in scope, conservative in nature and provide only theoretical background on the teaching profession without stressing pedagogical implications and therefore do not adequately prepare future teachers to meet the needs of the classroom (Mounira 2013; Mukeredzi and Samuel 2020; Nasimiyu 2017). Therefore, teacher engagement in professional

learning which transcends the formal training programmes is crucial. This therefore makes understanding how FP teachers in selected rural, urban and township schools in KwaZulu-Natal professionally learn, what they learn and how learning influences classroom practice worthwhile as it locates the enquiry within bigger debates on teacher learning.

Twenty-four FP teachers in rural, township and urban schools in KwaZulu Natal Province participated in this study to answer the key question: How do FP teachers professionally learn outside the formal programmes and how does the learning influence their classroom practice? To answer this key question three research sub-questions were developed:

1. What is the nature of professional learning practices that FP teachers engage in outside formal programmes?
2. What domains of professional knowledge do the teachers gain?
3. In what ways does the professional learning influence their teaching practice?

Answering these questions would enable an explanation of how the FP teachers professionally learn outside the formal programmes. The preceding Chapters Five and Six focussed on findings that answered Research Questions, One, Two and Three. Chapter Five presented findings about the nature of professional learning practices of FP teachers outside the formal programmes. The findings suggest that the FP teachers professionally learn through interaction and collaboration within two major sites: restricted (within the school) and wide professional sites (outside the school).

The preceding chapter (Chapter Six) was organised into two sections. The first section presented the findings for Research Question Two about the domains of knowledge gained by the FP teachers. It emerged that the FP teachers in the study professionally gained PK more than other kinds of knowledge. The findings also indicated that these teachers experienced poor parent support across the three contexts although this was more pronounced in rural and township contexts. The second section addressed Research Question Three about how professional learning influences teachers' classroom practice. From the findings, professional learning influenced FP teachers in this study in relation to teaching strategies and the related lesson processes in their classrooms.

The current chapter, Chapter Seven is organised into six sections: following this introduction which outlined the broad issues about teacher professional learning generally, FP teachers in particular, I reflect on the methodology which was adopted for this study. There follows a

review of the study. Subsequent to this section, is the contribution of the study. The fifth section discusses lessons and implications derived from the study and lastly, the summary draws the threads together.

Methodological reflections on the study

This study was located within an interpretive paradigm in which a multiple-site case study design and qualitative approach were adopted. Purposive and convenience sampling designs were employed for selecting participants. All these elements proved effective in this study. The data generation through focus group discussions, three-interview series, complemented by photo elicitation were also appropriate for the study as the data provided answers to the key question set out in Chapter One on how FP teachers engage in professional learning practices outside the formal programmes.

What this study discovered is that combining Biggs' (2003) theory on deep and surface learning, with Illeris' (2009) types of learning offers a nuanced understanding of the nature of professional learning practices engaged in by FP teachers. However, these theories needed to be complemented by conceptual frameworks from Shulman (1987) and Cogill (2008) on domains of knowledge to help unpack and describe the kinds of knowledge the teachers gained and how the learning influenced their teaching. This additive model proved effective.

During data generation processes, after the first focus group discussion I realized the need to probe more and give participants more time to respond before moving to the next questions/ topics. I found this to be very useful in producing rich data. I also discovered that it was my responsibility that each participant arrived at her home safely. I had to call, send WhatsApp messages, and waited anxiously for confirmation of their safe arrival. Such feelings only emanated during fieldwork.

Again, with regard to the focus group discussions, I had intended to form groups bringing participants from different contexts together for cross comparisons of ideas but realized difficulties during the first meeting as participants arrived at different times. I therefore re-constituted the focus groups by context. Grouping participants by contexts worked effectively as participants arrived either together in shared transport or within only a few minutes of each other. Despite the original plan not being feasible, I was still able to make grade and school comparisons given the differently constituted focus groups. From literature reviewed (Nyumba

et al. 2018), researchers benefit from group context since it provides insight into social relations and information reflects the social and overlapping nature of certain situations.

Although I managed to generate enough data through probing during focus group discussions, I felt that one interview question: *"Tell me about the activities that you do in a teaching day."* could have been asked in face-to-face individual interview rather than in the focus group discussions. It is probably that the participants would have described their different activities in more depth if I had done so as in the group setting the participants appeared to follow or copy each other's daily routine practices instead of explaining activities specific to their own schools. I thus had to ask why the daily routines tended to be similar and this enabled further elaboration. Some participants were also not forthcoming during the focus group discussions, so I had to look at them directly, address them by name and direct individual questions at them.

I adopted three series interviews (Seidman 1998). The face-to-face individual interviews, photo-elicitation interviews and reflection interviews were valuable although the use of disposable cameras was problematic for some of the participants. As previously mentioned, I had to lend my cell phone to one participant to enable her to take photographs. I realised that I could have allowed the participants more opportunity to practise taking pictures before they took the cameras to their schools. Three series interviews allowed the participants to reflect on how they engaged in professional learning practices, the kinds of knowledge that they gained, and how learning influenced their classroom practice. Interview 2 – photo elicitation was very engaging as participants took charge of the interviews, discussing the photographs that they had taken. Research shows that reflection supports participants in bringing to the surface tacit knowledge about their work-based learning experiences and practice (Smith, Meijer and Kielly-Coleman 2010).

During school visits for fieldwork, I repeatedly lost my way when headed for rural schools. Despite having Global Positioning System (GPS) on my cell phone, poor network, a lack of road signs and narrow bridges lengthened my journey time. Although I was scared for my safety, I realized I had to stop and ask to confirm the routes; this was very helpful but brought about the realisation that I should have asked participants for more specific directions during focus group discussions. The above challenges resulted in the process being difficult and emotional. Despite the challenges and success discussed above, the methodological choices that I made were effective as they enabled me to generate adequate data to answer all three

research questions on how rural, urban and township FP schoolteachers in selected KZN schools professionally learn outside the formal programmes.

Review of the study

This study consists of seven chapters which are summarised below:

Chapter One discussed the background information which set the scene for the study. The background of the study introduced professional learning, highlighting its value for teachers generally, FP teachers in particular given that this is when foundations for all children's later learning are laid (Green *et al* 2011; Hugo 2014; Verbeek 2014) and also when maximum human brain development occurs (DoE 2001b). The discussion on the policy context shows that the CPTD initiative implemented by SACE did not effectively take off in schools (Steyn 2017). A synopsis of the history of teacher education in South Africa was discussed which highlights segregation of teacher training during apartheid until the incorporation of teacher education into universities post-1994 (Chisholm 2019). This was followed by an outline of focus and purpose of the study. Subsequent to this I outlined my personal context and motivation for this study which was followed by the rationale behind the work where I outlined the need for on-going teacher professional learning (Blease and Condy 2014; Mukeredzi 2013b) and the paucity of academic work on FP teacher professional learning (Hugo 2014; Verbeek 2014). There followed the statement of the problem and research questions. Overviews of theoretical frameworks, and methodological approaches were then provided followed by definition of terms. The organization of the thesis was then outlined, and the chapter summary was presented.

Chapter Two, a review of related literature was organised conceptually following the funnel approach commencing by discussing international, then regional and finally local literature which informed the study around teacher professional learning. Internationally (excluding Africa), surveyed literature showed that professional learning has a positive influence on teaching practice and classroom culture. Research across all the contexts showed that professional learning takes place in different spaces and places, from planned and unplanned or formal and informal professional activities and could also be incidental, which sits at the verge of formal and non-formal learning activities (Wei, Darling-Hammond and Adamson 2010; Bertram 2014; Mukeredzi 2009; Kolnik 2010; Frazer *et al.* 2008). Consulted literature internationally and locally indicated that informal and non-formal learning also occurs through

reflection on experiences, experimenting, collaboration and interaction (Grosemans *et al.* 2015; Jurasaite-Harbison and Rex 2009; Peterson 2012) and teachers learn in various ways and their trajectories of learning differ (Govender 2016). Generally, little research has been done around FP teacher professional learning outside the formal programmes, therefore this study sought to contribute to the bigger debate on teacher professional learning.

Chapter Three presented the theoretical frameworks by Biggs (2003) and Illeris (2009) and the conceptual frameworks of Shulman (1987) and Cogill (2008) which guided this study. The theories used in this study are discussed through their historical development, principles, and application as well as critique. Biggs' (2003) deep learning strategy discussed under eight principles defines a deep learning strategy as learning through vigorous engagement with material for in-depth understanding (Figure 3.1 in Chapter Three). A surface learning strategy (Figure 3.2 in Chapter Three) involves learning for reproduction without grasping deep meanings of concepts. Illeris' (2009) theory on types of learning – cumulative (mechanical learning without comprehension); assimilative (learning by adding new related information to existing knowledge); accommodative (unrelated new information is added to existing knowledge); and transformative (learning which leads to profound perspective changes of the self) is discussed under these aspects. The chapter further discussed the conceptual frameworks by Shulman (1987): content knowledge; general pedagogical knowledge; pedagogical content knowledge; curriculum knowledge; knowledge of educational contexts; knowledge of learners and their characteristics; and knowledge of educational ends, purposes and values. These domains guided understanding and explaining the kinds of knowledge FP teachers gained. I also discussed Cogill's (2008) strategies and the qualities of good teachers (Table 3.1 in Chapter Three) which guided discussion on how professional learning influenced classroom practice.

Chapter Four discussed the research methodology which guided the study. This chapter described and justified the interpretive research paradigm; multiple-site case study design, and qualitative approach, sampling and the sampling procedures used for selection of the participants. Further, the research setting, accessing participants and the pilot study were discussed and justified. Three data generation techniques that were employed and the process of generating data through focus group discussions, individual face-to-face interviews and photo-elicitation interviews were defined, justified, and discussed. The chapter further discussed the issue of rigour according to Lietz and Zayas (2010) who listed four concepts that

work together to achieve trustworthiness: credibility, transferability, auditability and confirmability, demonstrating how each aspect was enhanced in this study. The chapter further discussed ethical considerations observed during the study. Limitations of the study were also discussed.

Chapter Five presented and analysed data for Research Question One, about the nature of professional learning outside formal programmes. I draw on the theoretical frameworks from Biggs (2003) and Illeris (2009) and the literature in presenting and discussing the findings. The chapter presented the findings according to the two major sites of professional learning that emerged: narrow (within the school) and wide professional sites (outside the school). Professional learning within the restricted sites emerged around classroom practice; reflection; records of practice; research and reading and meetings. These themes were discussed and summarized through their sub-themes.
With regard to teacher professional learning from wider professional sites, three themes emerged from data: workshops, cluster meetings, and social gatherings.

Chapter Six presented and discussed findings that answered Research Questions Two and Three. The first section in this chapter addressed Research Question Two which constitutes the domains of knowledge that the teachers said they gained. Only five domains of professional knowledge emerged from the data, namely: pedagogical knowledge (PK), pedagogical content knowledge (PCK), curriculum knowledge, knowledge of learners and their characteristics and knowledge of educational contexts. Each domain was discussed and summarized through reported sub-themes. The findings were explained drawing on concepts offered by Shulman (1987) and Cogill (2008). Relevant literature was also used to show how findings relate to current research.

The second section discussed Research Question Three about how professional learning influences teacher classroom practice. Teacher professional learning seemingly influenced classroom practice in relation to teaching strategies. The sub-themes and related processes in which classroom practice was influenced related to: assessment, classroom interaction, teaching and learning through play, group teaching, teaching handwriting, teaching drawing, and whole-class teaching. As assessment, group work, and learning through play had been discussed in other sections, they were not discussed in this section to avoid repetition.

Chapter Seven, this final chapter, presents the discussion, conclusions and synthesis based on the study. This chapter attempted to build a story about the nature of teacher professional learning, domains of knowledge gained and ways in which the learning influences teachers' practice. I reviewed the research questions and summarised the major findings at various levels. In this chapter I started by outlining my methodological reflections in relation to the research design of the study followed by a review of the study. This chapter also discusses the contribution of the study. It further outlines lessons and implications for teacher professional learning, policy, and research.

Discussion of findings

The purpose of this study was to explore FP teacher professional learning outside the formal programmes and how the learning influences their classroom practice. The data generated in this study addressed this major research aim through the three subsidiary research questions raised in Chapter One. The findings in this section are discussed according to those three research questions. The following section discusses the findings which addressed the nature of professional learning which the FP teachers in the current study reported they had engaged in outside the formal programmes in selected schools in KZN province.

1. *What is the nature of professional learning practices that FP teachers engage in outside formal programmes?*

The nature of professional learning for these teachers emerged in two major sites: restricted and wider professional sites. In this study, as highlighted in Chapter Five restricted sites represent their schools and wider professional sites are those spaces wherein, they engaged in professional learning outside their schools.

Within the restricted sites, participants engaged in professional learning practices through five major spaces or methods: classroom practice; reflection; records of practice; research and reading, and through meetings (grade, phase, and school). In the wider professional sites, they reported professional learning through workshops; cluster meetings and social gatherings, as reflected in Figure 7.1.

Figure 7.1: The nature of teacher professional learning outside the formal programmes

Source: Researcher (2021)

Figure 7.1 above reflects the spaces and methods in which the FP teachers engaged in professional learning practices outside the formal programmes. Both restricted and wider professional sites emerged as powerful tools for facilitating teacher professional learning in this study. Akyeampong (2017), from surveyed literature, argues that to improve and change teachers' instruction, professional learning should be brought closer to the classroom context. This is reflected in professional learning within the restricted sites. This author further says that teachers' professional learning should happen through various approaches like collaborative and inquiry-based meetings. Findings in this study which showed that participants engaged in professional learning practices through collaboration at grade, phase, and school levels, and through research and reading are consistent with this literature. The professional learning practices reflected by the FP teachers in the study suggest use of a deep learning strategy as they engaged in collegial collaborative discussions, collaborative reflection, shared ideas and learnt from their practice. For instance, the FP teachers were sharing ideas about developing detailed lesson plans, managing learner discipline and teaching strategies. This is consistent with Biggs (2003) who says a deep teacher learning strategy occurs when teachers engage with tasks at hand collaboratively, reflectively, effectively, and efficiently – with understanding. Collaborations, according to these teachers, promoted efficiency, effectiveness and 'keeping each other in check'. The following section discusses the nature of professional learning within specific spaces within the restricted sites.

Teacher professional learning in restricted sites (the school)

Classroom practice

Findings show that all the FP teachers in this study engaged in professional learning in classroom practice through: lesson planning, lesson delivery, use of teaching resources, use of teaching strategies, classroom management and assessment. These spaces of professional learning in classroom practice are presented in Figure 7.2.

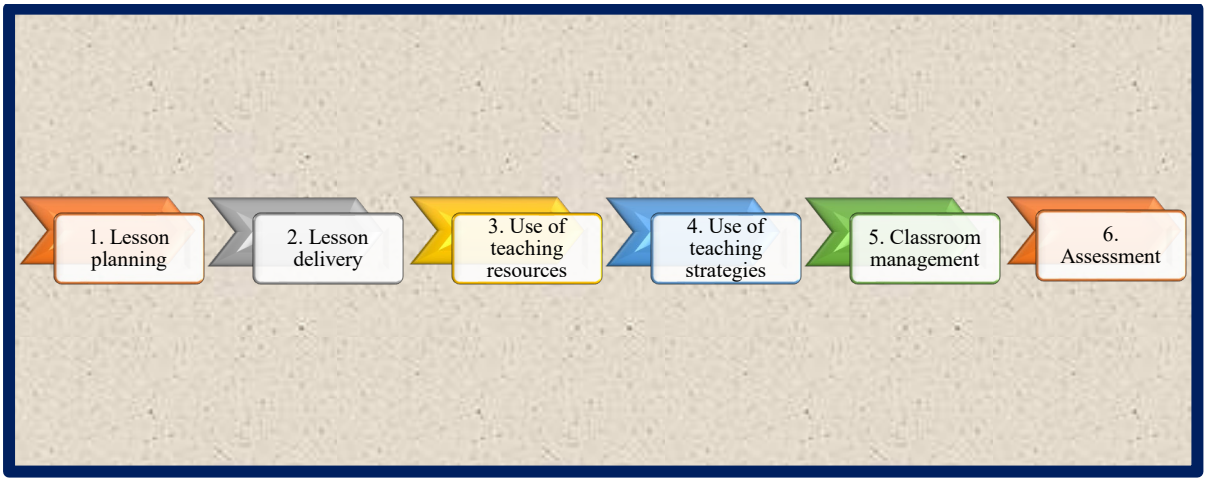

Figure 7.2: Professional Learning through classroom practice

Source: Researcher (2021)

Lesson planning

The professional learning in lesson planning was engaged in collaboratively in township and urban schools where there were more than one class per grade level, which allowed for collaborative teachers' engagement in joint lesson development. However, FP teachers in rural schools engaged in professional learning related to planning individually because of single classes per grade level. Literature surveyed (Mukeredzi 2013b) argued that planning enables thorough preparation and increases teacher efficiency and confidence through "self-interrogating, stepping back, 'pre-playing' and pre-evaluating classroom practice, and teachers develop new knowledge and beliefs on content, pedagogy and student learning" (p. 97). These subsequent processes promoted the teacher professional learning.

The findings indicate that the teacher's teaching contexts outside the formal programmes determined the ways in which they engaged in professional learning. This is supported by Furner and McCulla (2019) who argue that specific school contexts have a substantial and differential impact on teacher professional learning across all career stages. For example, many

classes for at one grade level provided opportunities for collaborative professional learning while single class grades made teachers work individually, although they both engaged in learning from planning processes. The group of teachers becomes a professional learning platform where colleagues learn from collegial ideas, collaborative reflection, individual reflection and through interaction. These planning processes suggest deep professional learning which is consistent with Biggs (2003) who asserts that deep teacher professional learning happens through preparation and planning activities, reflecting on them, and learning critical ideas either individually or along with others. Further, Illeris (2009) views this as learning through assimilation which is learning by addition to existing knowledge given that teachers added to what they knew already. Findings also show that the FP teachers engaged in professional learning practices through lesson delivery, which I discuss next.

Lesson delivery

With regard to lesson delivery, the FP teachers in this study, across all contexts –rural, urban and township schools – all reported engaging in professional learning practices through scaffolding learner learning, the use of differentiated instruction as well as from determining appropriate strategies that worked effectively in teaching complicated aspects of language to learners of diverse cognitive levels to enhance their involvement and achievement. In literature surveyed, Danielson (2014) states the need to use numerous teaching methods in order to cater for different learners in the classrooms. Hence, this finding is consistent with Danielson who argues for the use of various teaching approaches and methods for different purposes and in accordance with learners; specific needs. It also emerged that the FP teachers engaged in professional learning practices from the realization that giving learners time to try tasks on their own and only helping them where necessary, promoted learner learning of which they were not aware. These aspects of lesson delivery portray a deep professional learning strategy consistent with Biggs (2003) who asserts that deep teacher professional learning occurs through discovering and using appropriate principles to integrate ideas with experiences. From Illeris' (2009) perspective, this would be viewed as assimilative professional learning given that the learning was by addition to the approaches of which they were previously aware.

Use of teaching resources

Teacher professional learning through classroom practice also emanated from developing and using teaching resources in the classroom and from the realization of the appropriateness of different resources for different purposes and learners. These findings emerged from all the 24 FP teachers studied during face-to-face individual interviews, focus group discussions and

photo-elicitation interviews. The teachers who participated in the study revealed that they engaged in professional learning through use and development of teaching resources such as: flash cards, charts, abacuses, counters, bottle tops as counters, and worksheets, etc. which they realized were effective in promoting learner motivation, improving attention and concept mastery. This is supported by Moore (2013) who argues that deep understanding and the ability to devise and apply learning resources to new situations require conceptual understanding that is grounded in direct experience with real objects, this was apparently what happened with these FP teachers. Further, it also emerged that the use of real teaching resources offered the teachers professional learning as they were able to identify learners with learning difficulties who needed particular resources.

Literature reviewed showed that the use of real objects enhances learner understanding and conceptualization of concepts (Machaba 2013). These processes of development and application of learning resources depicted deep teacher professional learning strategy which linked with Biggs (2003) who views a deep teacher professional learning strategy as reflected by the ability to analyse classroom situations and make informed decisions which, for these teachers emerged from selecting appropriate teaching resources for certain groups of learners in particular learning areas. The nature of learning was through assimilation (Illeris 2009) where teachers added to what they already knew. Teacher professional learning through the use of teaching strategies, which also emerged from the findings is discussed next.

Use of teaching strategies

The findings indicated that all 24 FP teachers studied engaged in professional learning practices through use of teaching strategies which included the whole class teaching method, grouping learners and group work teaching, including motivating learners and observing their ways of learning, and solving their learning problems. The FP teachers also engaged in professional learning through teaching handwriting approaches which they were previously hesitant to use, but through experimentation with them realized their effectiveness. These findings emerged within all three of the contexts studied during focus group discussions, face-to-face interviews and photo-elicitation interviews.

Varying teaching methods in the classroom often stimulates learners' interests and eliminates boredom. Literature surveyed, Alharbi (2017) argues that teachers need to professionally learn to develop excellent understandings of learner problems and make appropriate choices regarding teaching approaches that address the issues of pupils' learning needs and learning

styles. This may involve code switching, observing, identifying and understanding their learners' learning needs; and modes of learning, offering individual attention or motivating the learners. These processes prompted reflection-in-practice as well as reflection-on-practice (discussed later) which promoted professional learning.

Code switching also emerged as an important strategy for the FP teachers who were in urban schools. Literature reviewed, Simasiku, Kasanda and Smit (2015) view code switching as a practice that increases academic achievement because it boosts learner understanding, improves the way they answer questions, and enhances teaching and learning of English as a second language. Switching from English to the LOLT in urban schools followed reflection in practice, which as Mukeredzi (2015) points out promotes teacher professional learning. This is in line with Lee (2012) who argues that code switching brings better learning outcomes than English-only instruction among English Second Language (ESL) learners. However, the disadvantage of code switching was pinpointed by Narasuman, Wali and Sadry (2019) who argue that this method can influence learners negatively as it can lead them to become reluctant to practise and be exposed to the targeted language. In addition, code switching works well when all learners speak and understand the particular mother tongue used. It was not clear whether learners taught by all participants shared the same mother tongue.

Further, it also emerged that the FP teachers studied encountered learner challenges like poor fine motor skills, inverted handwriting and failing to copy work from the chalkboard. These realizations offered them space for learning as they had to devise appropriate ways of helping such learners. The efforts made by these teachers emphasize the acknowledgement that foundations for school learning success are laid in early years of a child's life (Verbeek 2014; Green *et al.* 2011). Therefore, it was important for FP teachers to become familiar with all teaching strategies, to identify and solve learner learning problems by implementing them appropriately and effectively in order to build stronger foundations for later learning. These ways of teaching enabled the FP teachers to engage in a deep professional learning strategy. Biggs (2003) argues that a deep teacher professional learning strategy also occurs when teachers make use of evidence and inquiry in order to evaluate and analyse a specific situation. Drawing on Illeris (2009), the nature of learning was a combination of assimilation and accommodation. Two FP teachers in urban schools professionally engaged in learning IsiZulu in order to code switch, a process which was new to them. The next section discusses classroom management.

Classroom management

With regard to professional learning related to classroom management, 13 out of 24 participants studied reported engagement in professional learning practices in controlling learners by calling out their names, using different approaches of disciplining, and managing difficult learners. They learnt from practising restraint to avoid yelling at learners, instead addressing them by their names and controlling their voice projection, disciplining them privately and teaching them classroom rules. Consulted literature shows that teachers need to professionally learn to pay careful attention to each child's name, to make use of classroom rules and to deal with learners privately in order to develop children's sense of self-respect and be accountable for their mistakes and take responsibility (Alter and Haydon 2017; Kim and Lee 2011).

These findings suggest the use of a deep professional learning strategy which is consistent with Biggs (2003) who states that deep professional learning occurs among teachers when they discover skills of dealing with complex discipline issues in an appropriate and meaningful manner, for deeper understanding. While teachers were aware of discipline, suggesting assimilative professional learning, there were also aspects of accommodative learning (Illeris 2009) that they engaged in, such as practising self-restraint given that they had been used to yelling or shouting at learners. The following section discusses teacher professional learning through assessment.

Assessment

Professional learning among the teachers studied that also emerged from the findings was in relation to the assessment of learners' work. Only 19 out of 24 teachers talked about professional learning in relation to assessment. Moving to desk-to-desk monitoring, and marking, scaffolding learning, adopting assessment procedures such as checking whether content was covered adequately, checking the quality of the assessment instruments and moderating learner tasks according to Bloom's taxonomy, all provided them with some professional learning. Mukeredzi and Nyachowe (2018) note that assessment also forces teachers to reflect on both students' and their performance, thereby taking appropriate remedial action. Such competence, they further suggested, moves teachers from 'assessment of learning', through 'assessment for learning' to 'assessment as learning' which promotes their professional learning. Literature reviewed also shows that teachers who mark their learners' work and provide quick feedback are more likely to do on-the-spot remediation (Mbatha 2018; Kavlu 2016). In fact, the on-the-spot marking that the teachers adopted is supported by

reviewed literature where Mukeredzi and Nyachowe (2018) advise that for optimal effectiveness, feedback should be given while learners are either working on the task or have just finished it – in other words, while learners are still mindful of the task and striving to complete learning goals. The longer the time gap between task completion and feedback, the less effective that feedback becomes.

It also emerged that the studied participants engaged in professional learning practices through *Jika iMfundo* (new curriculum), through marking learners' work, group by group and moving with all learners during the lesson. These assessment processes suggest deep professional learning which is consistent with Biggs (2003) statement that a deep learning strategy occurs when interacting vigorously with the learning material or learners' written tasks as they analyse, evaluate, reflect, and develop the conclusions which bring about learning. The nature of learning portrayed from these findings, according to Illeris (2009) was both assimilative and accommodative professional learning. This learning was also accommodative as *Jika iMfundo* was a new curriculum which teachers were learning through implementation in their contexts. Findings also indicate that the FP teachers engaged in professional learning through reflection, which I discuss next.

Reflection

The findings indicate that reflection was a paramount element which contributed to teachers' professional learning outside the formal programmes. Twenty (20) participants reported that they engaged in professional learning through reflection on their experiences related to lesson delivery, learner behaviour, their work and classroom management. This entailed self-interrogation about what went right or wrong or right, including what needed to be done differently to uphold the good performance or improve existing performance in subsequent lessons (Mukeredzi 2015). These teachers highlighted that reflection was a crucial aspect of their professional learning. Mukeredzi (2014) states that reflection helps teachers to resolve their teaching uncertainties and promote independent professional learning from thinking about classroom experiences, teaching and learning processes. Further, when teachers are critically analysing their lessons, they professionally learn to evaluate the effectiveness of their practice, materials, learners' learning behaviour, and teaching strategies. This enables them to identify areas that need improvement or aspects that they need to uphold. This is in line with Bertram (2011) who views this as professional knowing-in-practice which is continuously constructed through reflection, evaluation and analysis. These processes portray a deep learning strategy which is consistent with Biggs (2003) who says that deep teacher learning involves reflection

of an individual's learning and working or trying out new ways of teaching. Thus, engaging in critical reflection and evaluation of each lesson seemingly heightened their professional learning as they could identify strengths and weakness throughout the teaching and learning processes.

Literature searched, de Klerk, Eggen and Veldkamp (2014) pointed out that the practice of professional reflection provides means for teachers to adjust and respond to classroom issues and become aware of their underlying assumptions and beliefs about teaching and learning processes. However, Biggs and Tang (2007) assert that if teachers complete the reflective journal or trackers without comprehending in detail what the needs of children are, this might result in surface learning. Contrarily, from the findings, these FP teachers showed that they professionally learnt by deeply reflecting on their practice. The following section discusses teacher professional learning through records of practice.

Records of practice

The findings revealed that 23 out of 24 FP teachers studied engaged in professional learning from records of practice. Records of practice like the relevant CAPS document, work schedule, time book, class attendance register, and records of marks were valuable in promoting professional learning through reflection, evaluation, tracing and analysing learners' performance. The teachers in the study indicated that they engaged in professional learning from using the CAPS document. In consulted literature, Du Plessis and Marais (2015) states that CAPS guides teachers on what must be planned and taught against what must be assessed. The CAPS document, which is well structured, covers study areas, topics and sub-topics, provides examples, plans, annual teaching plans (work schedules), assessment activities and states the resources to be used which also guides teachers during the teaching and learning process. From the findings, this means that the FP teachers were able to engage with their work effectively following the guidelines. In other words, understanding the demands of the CAPS document resulted in professional learning for these FP teachers.

It also emerged that the FP teachers engaged in professional learning from analysing learners' marks for class test and examinations (formal assessments tasks and diagnostic tests). This finding supports Hirsh (2009) who argues that professional learning is effective when it helps teachers to evaluate their own learners' performance and address changes needed in teaching and learning in their schools. Further, the results also showed that teachers professionally engaged in learning through accurate marking of registers. This finding supports literature

surveyed, where Modise (2015) views the marking of the register correctly and accurately as an important role and responsibility for every teacher. The findings also depict deep professional learning as Biggs (2003) argues that deep learning strategy happens when one interacts vigorously with the task at hand which these teachers were apparently doing. From Illeris (2009), this was assimilative learning as the FP teachers knew about some of these routines. Professional learning within the school also happened through research and reading which I discuss below.

Research and reading

All 24 participants in this study indicated that they engaged in professional learning practices through research and reading. This research discovered that the FP teachers from all three contexts were apparently committed to their work because they were reading and researching during their own spare time. Findings revealed that they engaged in professional learning through reading resources from the library, and also in searching for information on the internet from personal cell phones. They reported reading publications/articles and other teaching materials which were relevant to their phase. However, teachers in rural schools could not use internet much because of poor network connection; their reading was thus limited to books. These processes of reading and research suggests deep professional learning which as Biggs (2003) notes is reflected when one has an intention to understand material for him/herself. Research further showed that teachers who take part in professional learning of their own initiative, at their own expense and out of school hours (Yates 2017) show great commitment and self-willingness to learn. Thus, one may conclude that engaging in professional learning outside the formal programmes helped teachers to take the initiative in order to meet the demands of their job and to gain different knowledges around classroom practice. This finding is also supported by literature surveyed which pointed out that self-directed learning resulted in teachers being long-life learners throughout their career (Day 2002; Vail 2011; Yoon and Armour 2017). The findings related to professional learning through meetings is discussed next.

Professional learning through meetings

Three types of meetings from where the FP teachers investigated engaged in professional learning practices emerged from the findings: phase meetings, grade meetings and whole-school meetings. The types of meeting are presented in Figure 7.3.

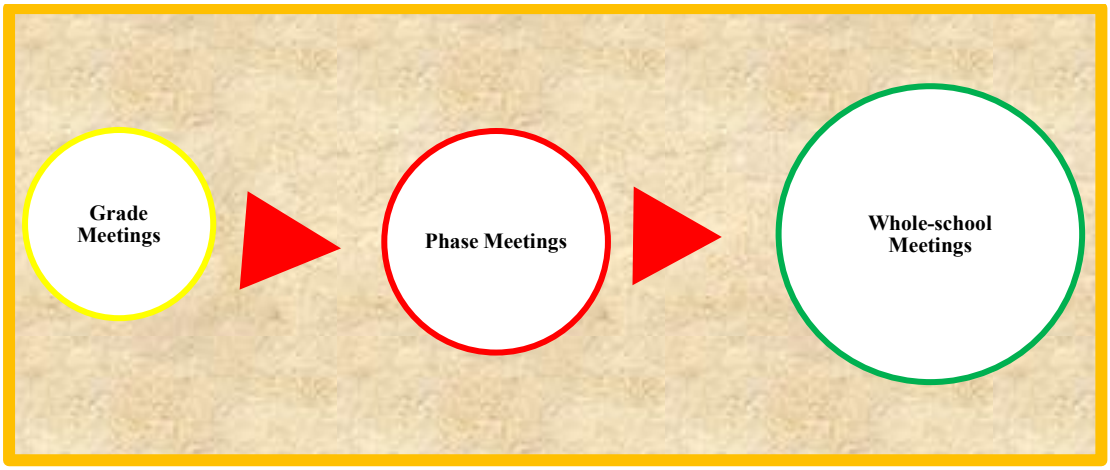

Figure 7.3: Types of meetings that emerged from data

Source: Researcher (2021)

With regards to phase meetings, the FP teachers engaged in professional learning practices through engaging in collegial interaction. The findings showed that collegial interaction occurred in completing forms, discussing teaching methodologies for approaching particular learning areas and topics, and chalkboard work. These teachers also reported that they professionally learnt about the curriculum, Language, Mathematics, and other information pertaining to teaching and learning through HOD-cascaded meetings. In relation to grade meetings, the FP teachers engaged in professional learning practices in preparing assessments, using teaching resources and discussing appropriate teaching methodologies. In whole school meetings the learning emerged from interaction, consultation and sharing of ideas. Literature consulted, Mukeredzi (2015) argues that the cascaded model of professional learning may have the advantage of reaching many teachers in a short space of time. However, this method risks 'knowledge' promoted being diluted or distorted as it passes from originators of the programme to the HOD and then to the teachers. On the contrary, other scholars argued that working collaboratively with other colleagues improves teachers' knowledge and expertise (Peterson 2012; Topolinski 2014). Drawing on theoretical frameworks this strategy of learning portrayed suggests surface learning (Biggs 2003) and cumulative learning (Illeris 2009) for example, getting brief ideas from HOD-cascaded meetings which leads to the lack of independence and relying on consulting others. On the other hand, these teachers also engaged in deep professional learning (Biggs 2003) from interacting and engaging with phase colleagues which was assimilative in nature (Illeris 2009). The following section discusses teacher professional learning in wider professional sites.

Teacher professional learning in wider professional sites

This section focuses on FP teacher professional learning in wider professional sites. In this study, wider professional sites as alluded to earlier, were the spaces through which the teachers engaged in some professional learning outside their schools. Three themes which emerged from data on practices of FP teacher professional learning in wider spaces were workshops, cluster meetings, and social gatherings. These themes are represented in Figure 7.4.

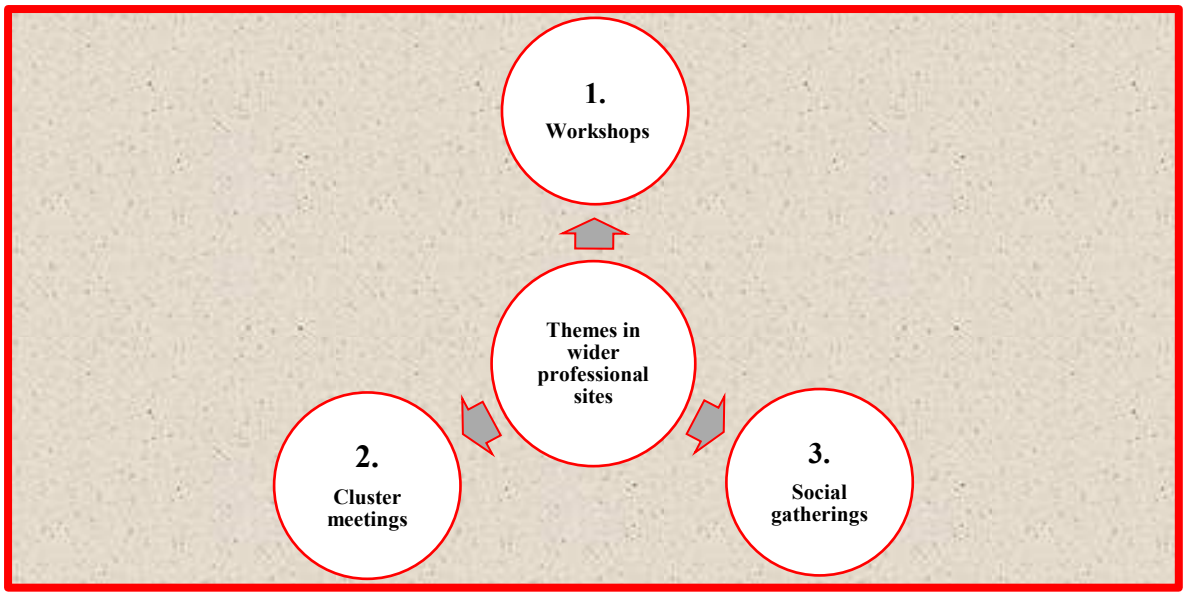

Figure 7.4: Foundation Phase Teacher professional learning in wider professional sites

Source: Researcher (2021)

Learning through workshops

To begin with, findings show that 21 teachers from all three contexts engaged in professional learning through workshops where the learning was mainly through interaction. Literature surveyed, Talvio *et al.* (2016) shows that engaging in a shared learning situation enhances teacher social interaction skills like listening and solving problems effectively which help them to achieve their teaching goals. The FP teachers engaged in professional learning through whole group discussion, as well as through small group discussion, and pair interaction with colleagues from other schools in these workshops. These teachers reported that through such discussions they professionally engaged in learning related to discipline, handling diversity, reading strategies and curriculum.

Such professional learning discussions occurred in three forms: listening to facilitators' presentations or being lectured to; listening to colleagues' feedback from group work tasks and

engaging in small group activities. This is in line with Werquin (2010) who argues that non-formal learning is embedded in planned and structured activities without explicitly designed learning such as objectives, support, and timeframes. Although this kind of non-formal learning was structured, and pre-arranged or predetermined it was generally not bankable or creditable as individuals did not receive certificates or qualifications. Further, the teachers in the study also indicated that they engaged in professional learning informally through sharing professional experiences and conversing with each other during the sessions and during small breaks. This is consistent with Mukeredzi (2009) who viewed informal learning as a by-product of formal or non-formal contexts of course-type situations. She went on to say that informal learning within spaces surrounding occasions with more overt formal and non-formal purposes are fundamental and valuable to professional learning as they do not occur coincidentally but within a sustained, created and regularly re-created group climate. This appears to have been what was also happening in these workshops.

The findings indicated that the workshops bridged the gap between the universities and the classroom as they often addressed classroom requirements. In this study, bridging the gap was expressed by some participants indicating that they practically engaged in professional learning in teaching situations in the classroom which had not been covered at university, but received assistance during workshops. These findings are in line with literature surveyed where Darling-Hammond (2012) and Vail (2011) concur that workshops provide teachers with an opportunity to professionally learn by sharing, discussing ideas and solutions to challenges that they encounter in their classrooms. On the contrary, Mkhwanazi (2014) argues that workshops offer insufficient professional learning as they do not place sufficient emphasis on teaching skills or subject content. The evidence in this study seems to contradict findings by Mkhwanazi (2014) as the FP teachers explored in this study indicated that workshops offered them professional learning which addressed their immediate classroom needs including learner discipline, reading strategies, handling diversity and aspects of curriculum delivery which they did not learn in the university context.

The FP teachers further engaged the deep professional learning strategy in relation to managing diversity through group work where they were discussing and developing flip charts for learners of various cognitive levels for presentation during report backs. The active group engagement during workshops is aligned to a deep professional learning strategy. In consulted literature, Boelens, Voet and De Wever (2018) state that teachers need to learn, understand and

design differentiated learning activities which addresses learner diversity in order to enable each learner to realise their potential. Further, the FP teacher professional learning through group work activities, listening to colleagues' feedback, and being engaged in whole group discussions enabled learning by assimilation and accommodation (Illeris 2009). Thus, the participants engaged in deep professional learning which Biggs (2003) views as occurring through vigorous collaborative engagements such as group work and giving feedback to others.

During the workshops, the FP teachers also engaged in professional learning through lectures. Through this strategy, teachers reported that they engaged in professional learning on various curricula, i.e. OBE, RNCS, NCS and CAPS including the *Jika iMfundo*. Scholars argue that the lecture method assigns recipients to the passive role of listening and in such cases, individuals are unable to apply information from the lecture in a meaningful way in the classroom (Bristol *et al.* 2019; Waldeck and Weimer 2017). This implies that the FP teachers studied were probably just listening as passive recipients which may have hindered deep conceptualisation of content delivered. Learning through the lecture method about changes of these curricula which was technical, reflects Biggs' (2003) surface learning strategy as the participants received ideas and information passively without much engagement in the learning process. Illeris (2009) perceives this type of learning as cumulative or mechanical (technical) learning which may be new and not form part of any other knowledge, thus being without a context of meaning or personal significance.

Findings also indicated that the FP teachers engaged in professional learning through cluster meetings, which I discuss next.

Learning through cluster meetings

All 24 FP teachers in the study reported having engaged in professional learning through attending cluster meetings. The findings showed that professional learning was through interaction as they engaged in joint development of assessment tasks for learners, lesson plans, teaching activities and developing reports for Grade R pupils. From these findings, it appears that engaging in collaborative teacher professional learning activities outside the formal programmes was effective as it addressed their classroom needs. This is in line with Mukeredzi (2016) who claims that clusters promote inter-school interdependence, sharing classroom experiences related to subject content, assessments, and other class activities. It was from such engagements that these teachers apparently engaged in professional learning. Mukeredzi (2016) also noted that such meetings also enable professional learning through what is

happening elsewhere, which fosters both collegial and individual professional learning. All this according to Mukeredzi (2016) brings to the fore the centrality of teacher professional learning individually and with colleagues which Graven (2004) defines as double-loop learning. The collegial sharing, as Mukeredzi notes, implies elements critical for teacher professional learning by not being dictated to, but enabled to engage in interaction, with ample occasions for discussion, critiquing, evaluating, and disagreeing, and being treated and treating each other like professionals. Such an approach views learning as a lifelong process in which teachers themselves direct and which an ongoing part of their professionalism is built on. Further, literature reviewed Durksen, Klassen and Daniels (2017) also viewed such collaborative learning as the most influential type of professional learning which enhances teachers' self-efficacy.

These processes of joint work in developing assessment tasks for learners, lesson plans, teaching activities and developing reports for Grade R learners depict the use of a deep professional learning strategy which is consistent with Biggs (2003) who says a deep learning strategy takes place through joint engagements and sharing different opinions and views with colleagues from other schools or departments. Illeris (2009) calls this learning by assimilation, which is learning by addition to existing knowledge, given that the teachers added to what they already knew. Findings also indicate that FP teachers engaged in professional learning through social gatherings.

Learning from social gatherings

The findings also indicated that nineteen (19) FP teachers in the study engaged in professional learning through attending social gatherings. From the findings, such social gatherings and engagements included church meetings, women's meetings, youth conferences, attending general Sunday services and teaching Sunday school children. Through interaction during these activities the FP teachers reported acquiring professional learning around communication, caring, cleanliness, cooperation, and respect, etc. The involvement of FP teachers in social gatherings offered professional learning practices on various topics which touched their professional, personal, and social lives. Literature reviewed, Ida (2017) states that a teacher's role has a polistructure: a leader, an organizer-manager, an information provider, a participant, and advisor, a partner and helper. All these roles seemed to have been played during some these social gathering where the FP teachers in this study engaged in professional learning. On the other hand, Mukeredzi (2009) states that teachers also experience professional learning through informal/incidental interaction in wider spaces. Mukeredzi further argues that these informal

interactions not only stimulate teachers' professional learning, but also their emotional and individual growth as they learn from their experiences and the experiences of others in these social circles. Therefore, the idea of multi-tasking: interacting with women's groups, advising, organising and teaching Sunday school which seemingly took place within these social gatherings suggest deep professional learning. The FP teachers engaged in deep professional learning through church activities where they said they learnt as they interacted with various people in involvement in such activities which learning was vital for learner discipline.

The processes described suggest deep professional learning which is consistent with Biggs (2003) who indicates that deep teacher professional learning occurs as individuals discover and use organizing principles to integrate ideas and activities. This was assimilative learning (Illeris 2009), given that teachers already knew about some of the roles and processes. From the discussion above, the FP teachers generally engaged in deep professional learning practices where learning was assimilative, through interaction and collaboration within restricted and wide professional sites. The next section discusses the findings which addressed Research Question Two.

Domains of professional knowledge gained

2. What domains of professional knowledge do the teachers gain?

This section discusses the domains of professional knowledge that FP teachers in the study gained outside formal programmes. The findings suggest that the teachers acquired mainly pedagogical knowledge (PK). While they could have gained other knowledge domains, highlighting mainly PK could be because the 'how to' knowledge is often easier to explain than other domains of knowledge. Broadly, the study revealed five domains of knowledge that the teachers gained outside formal programmes: pedagogical knowledge (PK), pedagogical content knowledge (PCK), curriculum knowledge, knowledge of learners and their characteristics and knowledge of context. These domains of knowledge were gained in restricted sites either through classroom practice or meetings while wider professional sites enabled FP teachers to gain mainly curriculum knowledge through workshops and clusters. These domains of knowledge are diagrammatically summarized in Figure 7.5 and then discussed below.

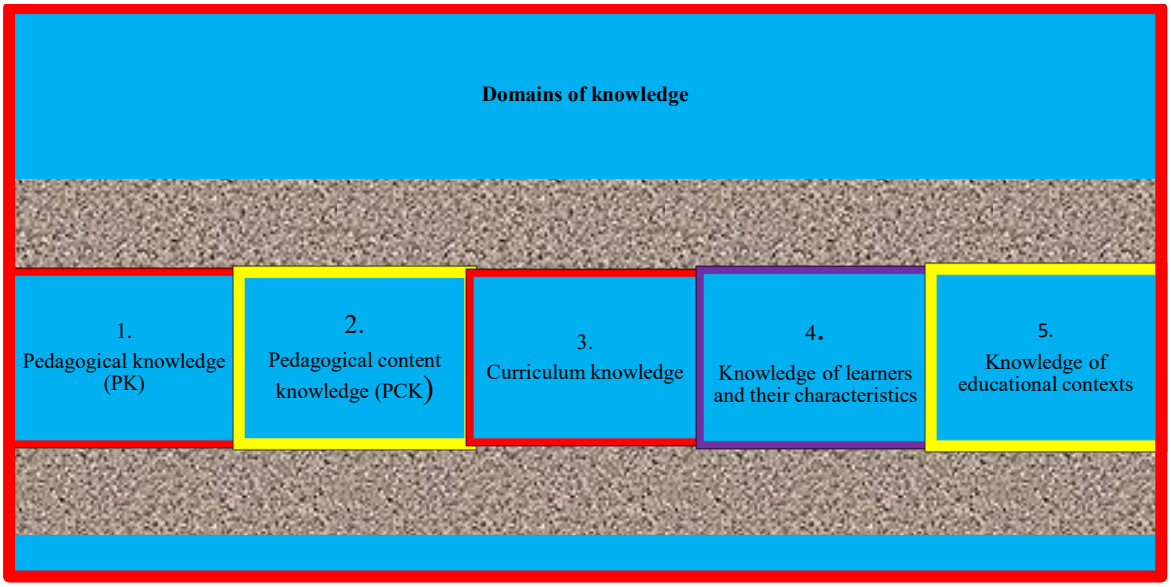

Figure 7.5: The domains of knowledge gained by FP teachers

Source: Researcher (2021)

Pedagogical knowledge

Pedagogical knowledge refers to specialised knowledge required by teachers to create appropriate environments for effective learning and teaching of all learners in the classroom. The PK aspects which emanated from all three sites explored were rather varied; for example, professional learning around group teaching emerged in township and urban schools while learning about handling learner diversity and teaching resources emerged in all sites and learning around improvisation emerged in rural and township schools only. It also emerged that FP phase teachers in rural schools professionally gained PK on how to teach learners from known-to-unknown. From the findings, PK was thus gained around four aspects: grouping learners, handling diversity, teaching resources, and improvisation. These are discussed in the sub-sections that follow.

Grouping

While all 24 participants reported gaining PK, 18 of the 24 FP teachers in urban and township schools gained PK related to ability grouping of learners and group teaching. Grouping and group teaching and monitoring group work to ensure gainful learning of all learners are major aspect of PK. Literature surveyed, Mukeredzi (2009) points out that while without careful planning and facilitation, group work can frustrate learners and teachers who may feel like it is a waste of time, but group work is an effective method which motivates learners, encourages active learning, and develops key critical thinking, communication, and decision-making skills.

However, ability grouping which was raised by some participants has both strengths and weaknesses. The strength of ability grouping is illustrated by Nhan and Nhan (2019) in surveyed literature, who state that ability grouping is effective in the teaching of languages as learners will be at approximately the same level. This was also the case in this study where the FP teachers explored grouped learners by ability in teaching English. However, other scholars (Hamilton and O'Hara 2011) perceive ability grouping as a weak strategy of teaching as it causes learners to miss gaining knowledge because teachers may not have enough time to pay full attention to each group during group work. Therefore, it seems vital for teachers to possess PK on how, when and whom to teach (Eraut 1994) and may vary teaching strategies in order to cater for all learners. The aspect of PK related to group teaching promoted teacher professional learning which is consistent with Cogill (2008) who emphasises that retention of classroom control and learner learning behaviour through group work, are about classroom management. Findings also revealed PK professional learning related to handling diversity.

Handling diversity

Twenty out of 24 FP teachers in rural, urban and township schools reported that they professionally learnt how to identify learners who were struggling with mastering concepts, how to manage such learners as well as how to accommodate learners with disabilities; managing such mixed learners may be related to inclusive learning and teaching (Mashiya 2014). Findings also indicated that participants gained PK on managing and teaching slow learners: teaching those who were slow to master concepts, to do pattern writing as they could not trace on lines or accurately colour pictures (inside the border lines). Concomitantly, participants in rural schools reported that they professionally learnt how to deal with disabled learners, assigning them small responsibilities and praising them and providing them with learning materials that enabled these pupils to do their class work. Hence, some of these FP teachers professionally learnt to play a pastoral role within their contexts.

According to Mukeredzi (2016), diversity simply implies understanding and appreciating that each learner in a classroom is unique in their own way and that in all classrooms, learners have diverse learning needs. If teachers are not responsive to these diverse needs, and do not provide the necessary support, then learners may experience barriers to their learning. Further, surveyed literature (Sharma 2016; Stronge 2018) concur that the process of effective handing of diversity can only be possible when the teachers understand the basis of learners' difficulties. It appears the teachers in the study professionally learnt how to identify their learners' learning difficulties and sources of those learning problems.

Further, the FP teachers also reported that they professionally gained PK related to developing learners' pencil grip, in those learners who struggled with handwriting. Developing learners' strong pencil grip at an early stage is crucial because the ability to hold a pencil correctly often affects the learner's fine and gross motor skills development, their handwriting as well as attitude towards writing and the completion of written schoolwork. All this may, consequently, affect children's academic performance and achievements. This is in line with literature searched where Banumathe, Sharma and Binu (2016) reveal that poor pencil grip normally leads to illegible handwriting which may lead to loss of marks and eventually hamper learner achievements.

In addition, findings revealed that the teachers studied professionally gained PK related to scaffolding learning. Scaffolding is understood as a process through which a teacher supports learners in order to enhance learning and aid the mastery of concepts and ideas. Literature consulted, Mukeredzi (2019) asserts that scaffolding is a process through which a teacher adds support for learners in order to enhance learning and aid in the mastery of any missed concepts or tasks. Thus, this step-by-step process is often carried out in a systematic way by building on learners' experiences and knowledge as they learn new skills or missed concepts. Further literature reviewed, van Driel, Slot and Bakker (2018) and Stronge (2018) concur that teachers need to understand when and how to scaffold in order to help learners to accomplish given tasks. Handling learner diversity, handling learners with disabilities, developing learners' pencil grip and scaffolding learning are all aspects which suggested that the participants gained PK. These aspects of diversity are aligned to Shulman (1987) and Cogill (2008) in the conceptual frameworks who suggests that teachers are required to understand how to manage learners with different learning difficulties as this helps them to tailor their teaching strategies to suit the demands of their classes. This appears to have been the case with these teachers. Another aspect of PK gained related to resources.

Teaching resources

All 24 FP teachers reported that they engaged in professional learning related to teaching resources during their lessons. Literature reviewed, Boggan, Harper and Whitmire (2010) and Makwara (2015) state that teaching from concrete, through representational, and lastly to abstract (CRA) caters for various levels of learners' understanding and ability. The findings revealed that some teachers gained PK related to the use of real objects like apples, or car wheels, when teaching vowels, introducing new concepts especially in EFAL, while others also used concrete media when presenting lessons in other topics. The participants used real objects

during teaching and learning so that their learners could have first-hand experiences with the objects which apparently stimulated learning and improved learners' understanding.

On the contrary, Lenyai (2011) states that the resources that teachers use to teach EFAL often do not develop children's comprehension and communication skills. This may be because the teachers would not be utilising the teaching resources appropriately and this would prove ineffective in enhancing children's comprehension and communication skills. However, from the findings the use of teaching resources also offered the FP teachers studied professional learning related to moving learners from known-to-unknown. Leading learners from 'known to unknown' is regarded as a practice that is particularly useful with young learners as it promotes thinking and observation, providing more scope for students' participation as learning becomes easy, permanent and develops their self-confidence (Mukeredzi, Bertram and Christiansen 2018). Learning related to teaching resources which is CRA teaching suggested that teachers in the study gained the professional knowledge domain of PK which Banks, Leach and Moon (1999) define as central to teachers' understanding of the "when, why and how" in their classrooms. Improvisation, which is discussed next, was another aspect of PK which emerged from the data.

Improvisation

The results also revealed that 16 out of 24 FP teachers studied, from rural and township schools professionally gained PK related to improvisation. This could be because such schools were under-resourced; as such, teachers had to learn to improvise in order to deliver effective lessons. The improvisation of teaching material was more prominent in rural schools and this finding confirms earlier findings by Mukeredzi (2009) who discovered that teachers in rural schools, 'make-do' due to the absence of teaching resources.

More recently, Du Plessis and Mestry (2019) lamented that many rural schools in South Africa face severe challenges of teaching resources, physical resources, and basic infrastructure for sanitation. In this study, it emerged that rural schools were under-resourced in terms of teaching materials, financial support, and computers. Further, these rural schools emerged as those struggling the most from severe under-resourcing where some teachers had to provide learning materials for their learners from personal resources. The FP teachers in this study lamented resource shortages in their schools which, however, gave rise to their professionally learning improvisation and 'making-do' to ensure gainful learning. Thus, experiencing professional learning related to improvisation probably also offered the teachers knowledge related to

creativity, critical thinking, and reflection. Literature reviewed, Motitswe (2012) indicates that teachers go out of their way to improvise teaching material so that they deliver content correctly to their learners. Mukeredzi (2009) adds that within this 'make-do' frame of mind, an inherent theoretical potential is that given these resource constraints, they 'make do' with the limited resources, and improvise, often with very large classes and multi-grade teaching, and this ability to think creatively and deal with these constraints provides space for professional learning. She adds that such teachers creatively resist the constraints within their classroom and school contexts to reconfigure what it means to be a teacher. Improvisation and having to 'make do' demands reading and research as an on-going process. This awareness of shortages offered teachers professional learning in their practice. According to Cogill (2008) in the conceptual frameworks, teachers make efforts in presenting learning material in a way that interests and motivates learners and provide suitable conditions so that learners understand. Thus, FP teachers in this study gained PK related to improvisation.

Overall, from the discussion above, one could conclude that the FP teachers in the study from rural, urban and township schools professionally gain PK (the 'how to' knowledge) related to handling learner diversity while group teaching skills emerged in urban and township schools. The PK related to improvisation emerged in both rural and township schools while professional learning related to teaching resources was engaged in, in all three contexts: urban, rural and township. However, these aspects emerged in different contexts while others appeared in all the three sites. The use of teaching resources emerged more in the teaching of EFAL, particularly in rural schools in the teaching of vowels and the introduction of new topics. Findings also showed that the FP teachers in the study gained knowledge related to pedagogical content knowledge (PCK) which is discussed next.

Pedagogical content knowledge

With respect to PCK, only 13 out of 24 FP teachers reported professionally learning about how to use pictures, rhymes, play and dramatic play to teach different topics. Professional learning of PCK emerged mainly around the teaching of Mathematics. From the data, it was only the FP teachers in rural schools who reported professionally gaining PCK around how to use pictures and rhymes in teaching subtraction. The use of pictures in the teaching of subtraction in Mathematics was found to be more effective in promoting knowledge retention, motivating learners, and helping the teachers to illustrate difficult concepts. From literature surveyed Hughes (2011) and Machaba (2017) state that the use of pictures stimulates the acquisition of subject content. The participants in urban and township schools indicated that they

professionally gained PCK related to the use of play in teaching numbers, counting and pattern writing. In addition, four participants in urban schools also reported professional learning of PCK related to the use of dramatic play to teach stories. From the conceptual frameworks, these teachers gained an understanding of how to link pedagogy and content (Cogill 2008; Grossman 1990; Shulman 1987) during teaching and learning processes in the classroom. From the above discussion, I can conclude that FP teachers' professional learning practices outside the formal programmes offered them learning of PCK related to use of pictures, rhymes, play and dramatic play which probably enabled them to teach various concepts in different ways. The next section discusses curriculum knowledge.

Curriculum knowledge

The FP teachers also professionally gained curriculum knowledge related to the CAPS document in both restricted and wider professional sites while the *Jika iMfundo* methodology was learnt in the school context. The study revealed that 14 of the 24 FP teachers professionally gained curriculum knowledge related to the CAPS document and to *Jika iMfundo*. The FP teachers needed to learn and understand curriculum documents because these were the 'tools of their trade' which guided and road mapped what to teach, how to teach, whom to teach and when to teach it. The FP teachers from urban schools reported learning sequencing of content and pacing of lessons as the CAPS document stipulated these two aspects.

They also professionally gained ways of ensuring adequate curriculum coverage. Findings suggested that the FP teachers from rural schools gained knowledge related to different topics in CAPS. This further enhanced their knowledge of teaching learners from known-to-unknown gained from the use of manipulatives highlighted above, given that in the CAPS document the topics were arranged by degree of difficulty. The FP teachers in township schools in this study did not make any references to this domain of knowledge, possibly as they did not view this as an important topic to discuss. Consulted literature shows that if teachers are not guided on the use of policy documents, they face many challenges as they attempt to interpret and translate the knowledge and skills that are specified in curriculum policy documents into teaching and learning activities and processes (Darling-Hammond and Bransford 2012; Tambyah 2017). Thus, professional learning that these participants engaged in outside the formal programmes, in the wider professional sites was vital for their teaching and learning processes.

Further, teachers in rural schools mentioned that they gained curriculum knowledge around different topics in CAPS document and also *Jika iMfundo* which was defined in Chapter Six

under Assessment of learners' work as the document that complements the CAPS document. For example, the FP teachers learnt the different topics for Life Skills that were to be taught in term one and those for the other terms. Professional learning related to CAPS and *Jika iMfundo* documents was consistent with what Cogill (2008: 5) in the conceptual framework refers to as "knowledge of what should be taught to a particular group of pupils." Hence, the understanding of the curriculum seemingly offered a backbone to these teachers. Thus, engaging in professional learning in both restricted and wider professional sites enabled the teachers studied to gain knowledge of curriculum related to various topics in the CAPS document and also the *Jika iMfundo* which they gained in their schools.

Knowledge of educational contexts

While Shulman separates knowledge of learners and knowledge of the school, other authors such as Grossman (1990) views them as entities of contextual knowledge. In this section I discuss them under knowledge of educational contexts. Within context knowledge, the FP teachers in the study gained: knowledge of learners, knowledge of the school and knowledge of the community. The knowledge of contexts emerged in all three of the study contexts: rural, urban and township schools.

Knowledge of learners

From the findings, 20 of the 24 participants in this study reported that they professionally gained knowledge of learners. Teachers in urban schools reported professionally gaining knowledge related to learner background, in particular becoming aware of a lack of role models who could assist them with schoolwork at home as most of them were either orphans or were from dysfunctional families. Researchers surveyed found that family role models are critical as they help to develop learners' good behaviour (Reichert *et al.* 2016; Stern *et al.* 2018). Hence, lack of family role models apparently had a negative impact on children's academic performance. Lack of parental support at home also emerged mostly in township schools probably because the guardians had no time to dedicate to help with homework.

In literature reviewed, Mwoma and Pillay (2015) state that in South Africa there are many challenges faced in providing valuable sustenance to vulnerable children in order for them to receive love and care at home, and sufficiently address their need for parental support in their well-being and education. Hence, engaging in professional learning within their schools helped some FP teachers to identify and understand ways of assisting learners who lack parental support. The DBE (2005) stipulates that all teachers need to practise and promote

critical, committed, and ethical attitudes towards developing a sense of respect, care, and responsibility towards learners. Thus, some of the FP teachers in the study assumed the parental role (*in loco parentis*) in response to the educational, emotional and other needs of their learners. Some participants also reported that they professionally learnt to source learning resources for their learners to support their learning processes. Kapur (2018) asserts that learners who belong to marginalized, deprived and socio-economically backward areas of society, cannot manage to pay for the books and other materials required for learning. Therefore, the knowledge of learner backgrounds which they gained prompted them to find ways of addressing them to enhance learner learning. From the conceptual framework, these teachers professionally gained knowledge of learners within different educational contexts (Shulman 1987; Grossman 1990) which helped them to address such issues in their classroom practice.

Knowledge of the school

With regard to knowledge of the school, findings indicated that 20 of the 24 FP teachers studied professionally gained school knowledge related to their schools' resource provision for classroom practice, and they also became aware of the roles of their SGBs. Under-resourcing, particularly in rural schools has been discussed above. Understanding the working environment provided teachers with the knowledge of school governance and all stakeholders which enabled them to adjust their classroom pedagogies to suit particular contexts. The teachers reported that they professionally learnt about the roles of SGBs who fostered efficiency in their schools. This is in line with surveyed literature where Ntuli (2017) claims that regardless of the poverty level of a community, a well-functioning SGB and parental involvement in school governance, would guarantee a successful schooling experience for the learners. The knowledge reportedly gained by these teachers is consistent with Grossman (1990) who points out that teachers are required to gain school knowledge and understand all the related factors that influence the school and its governance.

Knowledge of school culture, norms, and values

Findings also revealed that 20 out of the 24 participants engaged in professional learning related to culture, norms, and values. The study discovered that FP teachers mainly in urban schools professionally gained knowledge related to various cultures and religions, and how to engage in cultural activities within their schools. This was vital as it helped teachers understand their learners better. Consulted literature Villegas (2019) indicates that when teachers possess knowledge of multicultural diversity, they will be able to understand learners' views and direct

them in an appropriate way. Findings in this study indicated that FP teachers engaged in professional learning related to religion, culture and some cultural activities. This is in line with Villegas (2019) cited above. Experiencing professional learning related to different religions and cultures is consistent with Grossman (1990) and Shulman (1987) in the conceptual frameworks who concur that teachers need an understanding of knowledge of contexts including their students' backgrounds and families.

Knowledge of the community

While a few parents supported urban school activities, generally what emerged from this study was an absence of parents' support for school activities across all three contexts. The findings revealed that this lack of parental support was of great concern to schools generally, the FP teachers in the study in particular. This finding supports literature reviewed where Bhengu (2013) claims that parents still fail to realize the importance of being role players in all school functions. The importance of parental involvement in school affairs was also noted by Mukeredzi (2009) who acknowledges that respectable school and teacher-parent rapport encourages effective teacher professional learning well-vested in classroom practice and good control of learner discipline. Concomitant to this, the FP teachers in this study teaching in urban schools, acknowledged that parents who supported their children wanted to know more about their children's school, and classwork which helped in maintaining learner discipline. Informed by the conceptual framework related to teacher knowledge of context, Banks, Leach and Moon (1999) and Grossman (1990) concur that knowledge of community, its strength, weaknesses and constraints, guides teachers in adjusting learning and accepting their working environments.

From the discussion above, understanding various religions, cultures and engaging in cultural activities promoted an awareness of the value of cultural diversity which was a vital aspect of teacher practice. The lack of parental support in their children's education was another area of professional awareness which emerged from the findings. Lack of parental involvement in school affairs made the participants realize the needs of some of their learners. Thus, what emerges is that the FP teachers gained professional learning related to knowledge of learners, knowledge of the school and knowledge of the community in all the three contexts. However, the knowledge of the school culture, norms, and values mainly emerged in urban schools. Gaining knowledge of learner backgrounds, the roles of SGBs and the different religions emerged as crucial for the FP teachers' classroom practice, particularly learner discipline.

The following section discusses Research Question Three which focuses on the influence of FP teacher professional learning on classroom practice.

Influence of Foundation Phase teachers' professional learning on classroom practice

3. How professional learning influences teachers' classroom practice

This section discusses how professional learning influenced FP teachers' classroom practice. The findings revealed that FP teacher professional learning influenced mainly their pedagogy in classroom practice. Seven classroom practice pedagogical aspects that emerged as having been influenced related to: classroom interaction, assessment, teaching and learning through play, handling group teaching, teaching handwriting, teaching drawing, and whole-class teaching. However, assessment, teaching and learning through play and managing group teaching were discussed in earlier sections and have been omitted to avoid repetition, thus they are not discussed in this research question.

The influence of professional learning on classroom interaction

In relation to interaction, findings indicate that the professional learning engaged in by FP teachers influenced their interaction with learners in the classroom. Twenty of the 24 teachers in the study, across all three contexts realized the value of classroom interactions. Literature surveyed (Pöysä *et al.* 2019) shows that good interaction between teachers and learners stimulates teaching and learning processes as learners feel that they are appreciated, heard, and understood. Findings revealed that engaging in professional learning activities influenced the teachers in the study to interact more actively with learners in their classrooms. The teachers reported improvements in teacher-learner, learner-teacher and learner-learner interactions in the classroom. Interaction encourages active learning in the classroom and closes the gap between teacher and learners. From the teachers in rural and township schools that were studied, it emerged that professional learning influenced their understanding of the need for all learners to interact in the classroom and develop confidence through interaction. The participants highlighted that it was professional learning that promoted teacher-learner interaction and learner engagement during teaching and learning processes. Hanum (2017) states that interaction helps the teaching and learning process to run smoothly. Drawing on conceptual frameworks, professional learning which influenced FP teachers' understanding of the value of classroom interaction in the classroom relates to what Cogill (2008) views as

having skills of creating a relaxed and enjoyable atmosphere in the classroom, given that it is often when learners interact that they relax and enjoy learning.

Further, it also emerged that professional learning engaged in by the FP teachers in urban schools prompted a desire to learn their learners' language to enhance classroom interactions. Through their professional learning, participants in urban schools realised a need for more teacher-learner, learner-teacher and learner-learner interaction to enhance learner understanding; consequently, they decided to learn IsiZulu. The language policy in the revised National Curriculum Statement Teacher's Guide document for the foundation phase (DoE 2003b: 21-22) suggests that,

> *...wherever possible, learners' Home Language(s) should be used as the language for teaching, learning and assessment. This is particularly important in the foundation phase where children learn the basics of how to listen, speak, read and view, write, think and reason.*

In this study, the medium of instruction for the participants in urban schools was English, although many of their FP learners were IsiZulu-speaking. Consequently, these urban FP teachers in the study had realized the value of interaction in the classroom, decided to learn to speak their learners' mother tongue (IsiZulu) to promote effective communication in the classroom, but maintained English as the language of instruction. It is crucial for teachers at FP level to understand their learners' mother tongue to enhance teaching and learning in the classroom (Mbatha 2014). From consulted literature, Lenyai (2011) argues for the importance of using a second language during teaching and learning process to enhance teacher-learner, learner-teacher, and learner-learner interaction. This is probably what the teachers from urban schools realized and intended to do.

Findings also revealed that through professional learning the FP teachers in the study realized the importance of talking with appropriate voice projection when interacting with learners. Voice projection, which is clear, expressive and projected forward can capture the learners' attention and initiate involvement with the teacher and subject matter. It often also influences learners to project their voices. This finding is aligned to literature searched where Chowdhury and Dawar (2019) state that the 'teaching voice' is the professional voice which is often different in quality from one's day-to-day speaking voice. Therefore, it is crucial for teachers to project their voices appropriately as they manage young learners, who generally have a short

attention span. Engaging in professional learning activities within the school influenced the teachers who took part in the study to realise the importance of not yelling at children and calling them by their names which is consistent with Grossman (1990) who identifies teacher vocal intonation as part of good classroom management. The influence of professional learning related to teaching handwriting is discussed next.

The influence of professional learning on teaching handwriting

With reference to handwriting, 13 out of 24 FP teachers in township and urban schools reported that through professional learning, they developed an understanding of the value of good handwriting, including appropriate handwriting required for FP level learners specifically. These FP teachers realised that modelling good handwriting on the chalkboard had a positive impact on learner's learning as they were able to read and master the information. The FP teachers in urban and township schools confirmed that initially they were just writing 'anyhow' on the chalkboard and had not been aware that there was a specific handwriting style required for FP level.

This seems to confirm what Shaturaev (2019) states – that handwriting has a low status and profile in literacy education and in recent years has attracted little attention from policy makers, teachers, or researchers in mainstream educational processes. However, this lack of attention to and knowledge of handwriting had influenced their chalkboard work, including how their learners reproduced that work in their books. Notably, it was through professional learning activities within the restricted sites that participants confirmed changes in their handwriting on the chalkboard. Other participants confirmed that through changes in their own handwriting, their learners' handwriting also improved. The FP teachers in rural schools did not make references to handwriting, it was only participants in township and urban schools who indicated that professional learning influenced their handwriting style. Findings also indicated that, through this realization, these FP teachers started teaching their learners appropriate forms of handwriting for this phase. Scholars argue that modelling of legible and neat handwriting at the FP level save on teaching time in later grades (Kgomo 2013; DBE 2011b). This is because FP learning, as its name suggests, forms the foundation for all later learning.

McFarland (2015) purports that teaching learners good handwriting at an early stage is essential for the development of their brain, and motor skills and activates the memory. McFarland further states that developing children's early handwriting leads to literacy acquisition because it is a prerequisite to keyboarding, and reading and is also necessary for quality composition,

independence, and flexibility in writing. Teachers' lack of handwriting knowledge may affect learners' understanding of facts which affect their learning and mastering of subject content and spelling development (Blease 2014). Good knowledge of handwriting enables teachers to demonstrate good handwriting which allows learners to master and copy correct spelling during the writing process and assists them to read what has been written with understanding and clarity. It is therefore crucial that the FP teachers teach learners appropriate handwriting at an early stage. From the discussion above, it emerged that professional learning influenced teachers' knowledge and understanding of handwriting including specific handwriting for FP level. Cogill (2008) calls this influence emanating from an awareness of what learners are to do and achieve. The section below discusses the influence of FP teacher professional learning on teaching drawing.

The influence of professional learning on teaching drawing

Findings also showed that professional learning influenced 11 of the 24 FP teachers in rural and township schools to understand and appreciate the value of drawing strategy as a teaching method during teaching and learning. The teachers studied in rural schools reported that previously, they perceived drawing as just a 'fun' activity with learners, while participants in township schools revealed that they did not take it seriously in their practice. However, following professional learning within their schools, participants became aware of the value of drawing and started teaching it. Further, these FP teachers also apparently realized that drawing was part of writing which helped learners to express themselves, thereby invoking critical thought and self-expression.

Literature reviewed (Mackenzie and Veresov 2013; Alant and Sherwood 2017) shows that teachers are encouraged to use drawing as it develops children's creativity skills and help them form strong foundations for other learning areas. Professional learning gained by the FP teachers studied also emerged as having prompted them into using drawing as a teaching approach which revealed to them knowledge of their learners beyond the classroom. This finding suggests that the deep professional learning strategy adopted by FP teachers influenced their understanding of the handwriting process which Biggs (2003) views as discovery and examination of new ideas in order to make viable decisions and conclusions. Teaching drawing and adopting it as an approach to teach other learning areas apparently improved teachers' pedagogical classroom practice. The next section discusses whole class teaching.

The influence of professional learning on whole class teaching

Regarding whole class teaching, only 6 of the 24 FP teachers studied who were from urban schools reported that their professional learning influenced them to shift to whole class pedagogy a from group work teaching strategy which is usually dominant in this phase. The participants reported that they shifted from group teaching because learners were often not gainfully engaged in their work as they kept making a noise. Mercer and Howe (2012), from reviewed literature, claim that whole class teaching is effective in dialogue, and discussions between teacher and learners. On the contrary however, whole class teaching is also viewed as ineffective as other literature reviewed (Bovill 2019; De Lannoy and Hall 2012) indicates that this method of teaching can only work with small classes as described in Chapter Seven. The teachers in the study reported that they changed from group teaching to a whole class teaching strategy as it assisted them to captivate, hold the attention of and also give their full attention to all learners in the classroom. In this case they had experienced challenges using a group work teaching strategy and consequently professional learning influenced them to change to a whole class teaching strategy.

From the discussion above, the FP teachers studied in all the three contexts reported the influence of professional learning related to pedagogy. All FP teachers studied revealed the influence of professional learning around interaction in the classroom. Only FP teachers in township and urban schools reported influences related to handwriting, while teachers in rural and township schools revealed the influence of professional learning on teaching drawing. The influence of professional learning on whole class teaching emerged only in urban schools that were studied.

From the discussion above which addressed answers to the three research questions set out in Chapter One, I can conclude that the findings from the study adequately answered the questions. Having provided answers to the research questions, in the next section, I outline the original contribution of my study.

Original contribution of the study

The purpose of this study was to explore FP teacher professional learning practices outside formal programmes, what they learn and how the learning influences their classroom practice. From the findings, this study makes three contributions related to: theoretical framework; conceptual frameworks and the nature of professional learning.

To begin with, in interpreting and explaining the phenomenon of FP teacher professional learning and its influence on classroom practice, I drew on two theoretical frameworks in order to understand the nature of professional learning that the FP teachers engaged in. While these theories by Biggs (2003) and Illeris (2009) have generally been used separately to understand students' learning in universities and in the classroom (Alt and Boniel-Nissim 2018; Ellis, Pardo and Han 2016) this study discovered that using them in combination is effective in understanding FP teacher learning outside formal programmes. This emerged as a major contribution of this study. The theories: Biggs (2003) and Illeris (2009) in this study provided the theoretical lenses to understand, describe, explain and theorize the nature of professional learning. The study discovered that the combination of Biggs and Illeris enabled establishing the nature of professional learning in terms of whether learning was deep or surface (superficial) as well as in relation to Illeris' classifications what type of learning it was: transformative, accommodative, assimilative, and cumulative (mechanical).

Concomitant to this, the study discovered that Biggs' (2003) and Illeris' (2009) theories could not provide a nuanced picture of what was professionally learnt by the FP teachers; it was therefore necessary to develop an additive model drawing on Shulman (1987) and Cogill (2008)'s conceptual frameworks. These helped to unpack the domains of knowledge which the FP teachers professionally gained in both restricted sites (through classroom practice and school meetings) and in wider professional sites (through workshops, cluster meetings and social gatherings). The study found that the FP teachers in the study gained mainly general pedagogic ('how to') knowledge which Eraut (1994: 15) "calls 'practical know-how' that is knowledge about how to present, in the action of teaching itself."

Thirdly, the study discovered that effective FP teacher professional learning occurred in collaboration within the restricted sites (in the schools) and in the wider professional sites (outside the schools). In-school FP teacher professional learning through collaboration and interaction exposed teachers to engagement in a deep learning strategy (Biggs 2003) which was assimilative (Illeris 2009), prominent, and effective through grade meetings, phase meetings and whole school meetings. Goos, Bennison and Proffitt-White (2018) state that professional learning which occurs in school-based sites allows teachers to explore, try out and validate ideas in their own classrooms, and collaboratively reflect on and debate matters and problems with supportive colleagues. While collaborative professional learning was also noted in wider professional sites through workshops, cluster meetings and social gatherings, this study found

that such collaboration enabled mainly surface learning (Biggs 2003) through presentations and lecturing. Literature surveyed (Ajani 2020) posits that in South Africa the DBE teachers' workshops are inconsistent, irregular, and inadequately address teachers' professional learning needs.

Conclusions and implications based on the study

Three implications were drawn from this study: for teacher professional learning, policy, and research.

Conclusions and implications for teacher professional learning

The study found that effective teacher professional learning is not an individual activity but occurs in collaboration and interaction both within and outside the school. Topolinski (2014) and Peterson (2012) indicate that working collaboratively with other teachers enhances the development of teachers' knowledge and improves their classroom practice. What this implies is that while motivation for professional learning may come from the individual, most of the teacher learning emanates from, through and with colleagues and other people (Mukeredzi 2009). Thus, the most significant factor enhancing professional learning practices of the FP teachers, is collaboration and interaction. This, however, has implications for educational leaders as it implies that attention needs to be given to FP teacher professional learning practices individually and collectively, providing them with more opportunities for collaboration within and outside their schools, i.e. in both restricted and wider professional sites.

Conclusions and implications for policy

Working in rural contexts presents many resource constraints, challenges of geography, and teachers also experience difficulties in managed large class sizes. Du Plessis and Mestry (2019) claim that many rural schools in South Africa face severe challenges of physical resources, teaching resources, and basic infrastructure for sanitation. Some of the FP teachers in this study were therefore subjected to these sorts of pressures. The study also found that these FP teachers in rural schools experienced limited access to teaching and learning resources unlike their counterparts in urban and some of the township schools, and they also experienced limited parental and community support. The physical remoteness and isolation of many rural school settings, coupled with the lack of an active chain of support from the parents' community, are

critical for effective pedagogic delivery and teacher professional learning (Mukeredzi 2015). Hence, this study calls on the stakeholders to make resources available to these already marginalized areas and to develop programmes that enhance parents' understanding of their role in supporting school activities and the education of their children.

Conclusions and implications for further research

Having highlighted that this study used Biggs (2003) and Illeris (2009) in combination to understand and explain the nature of FP teacher professional learning and complemented this with Shulman (1987) and Cogill (2008) to unpack details of the kinds of knowledge gained and how the learning influenced their classroom practice, the model can only hold after it has been used, and further developed by other researchers. More studies are therefore required to develop this further and to determine its applicability beyond this particular inquiry. Further, this study only explored twenty-four (24) FP teachers in KZN Province of South Africa, using a qualitative approach; as such, results cannot be generalised. A more comprehensive study into FP teacher professional learning outside the formal programmes is necessary. Further, as the study focused only on FP teachers, inclusion of other phases: Intermediate Phase, Senior Phase and FET Phase, employing other research approaches, may provide a more nuanced understanding of how the teachers engage in professional learning outside formal programmes, what they learn and how that learning influences their classroom practice.

Summary

This study sought to understand FP teachers' practices of professional learning outside the formal programmes, the knowledge they gained and how the learning influences their classroom practice. In this chapter, I discussed answers to this key question where broadly it emerged that the teachers engage in professional learning through collaboration and interaction within both restricted and wider professional sites. The study also found that they gained PK, PCK, curriculum knowledge and knowledge of context, and that professional learning influenced their classroom pedagogical practices.

The answers which I discussed in some depth in this chapter illustrated that the major question that guided this study was answered. The value of collaboration and interaction which emerged in this study as a critical element of teacher learning outside the formal programmes was vividly captured by Participant 21 from an urban school during individual interviews when she said:

> *... working together is very important because there are problems that we encounter every day with learners. These problems come with tricks [are tricky] and we need ideas from others on how to handle them. So, sharing different views helped me to change my teaching strategies that I was using before in order to cater for those learners who have various problems.* (Participant 21 Urban)

The words of Participant 21 imply that engaging in teacher professional learning outside the formal programmes, through collaboration and interaction is crucial as this helps teachers to deal with the situations which they encounter in the classroom.

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APPENDICES

Appendix One: Data generation instruments

PRELIMINARY VISIT TO SCHOOLS

Introductions

- To school heads and participants.
- Getting to know the participants' names, contact numbers
- Explaining the purpose of my study and that their participation is voluntary, they can withdraw at any time they feel like without any harm. Giving them information letters and consent form for completing.

FOCUS GROUP INTERVIEWS: QUESTIONS

1. Tell me about your school where you are teaching.
2. Tell me about the activities that you do in a teaching day? What do you learn from the activities? How does the learning help you in your teaching?
3. What are your views about team teaching?
4. Do you practise team teaching at your school? What are the things that you learn from it? How does the learning help you in your teaching?
5. Tell me about the kinds of things you do in workshops?
6. What do you think is an important thing you learnt from those workshops?
7. How does that help you in your teaching practices?
8. Is there anything you may want to ask me?

INTERVIEW ONE: QUESTIONS

1. Tell me about your teaching experiences. What did you learn from your experiences? What does that help you to improve your teaching?
2. Do you hold grade meetings? What things do you learn from grade meetings?
   In what ways would that help you?
3. Do you have time to discuss other things in meetings? What are these things? Do those things help you in your classroom? How do those things help you?
4. Tell me the activities that you do in a teaching day?
5. What did you learn from all these professional activities?
6. Tell me about an exciting day in your school. What about in your classroom.?
7. Tell me the things that you do with other teachers in the phase. What do you learn from those things? How do you use those things you learn from others in your classroom?
8. How do other teachers help you? Do you sometimes ask other teachers for help? What kind of help? How does that help you in your teaching?
9. What kind of things do you learn in your school? How do those things help you in your teaching?
10. Tell me the things that you do in your classroom. What do you learn from those things?
11. What are the things you learn from other teachers in your school? Do those things improve your teaching? In what ways do those things help you?
12. Tell me about the experiences of using CAPS. What did you learn from it?
13. Do you ask other teachers if there is something you don't know?
14. What if they also don't know, how do you solve the problem?
15. Is there anything you may want to ask me?

INTERVIEW TWO: PHOTO ELICITATION QUESTIONS

1. Why did you choose this photograph?
2. Tell me about each of the photographs that you have chosen.
3. What did you learn from the photograph/activity?

4. How does the learning help you in your teaching?

Participants will lead the discussions as they will talk about their photographs explaining their professional learning experiences.

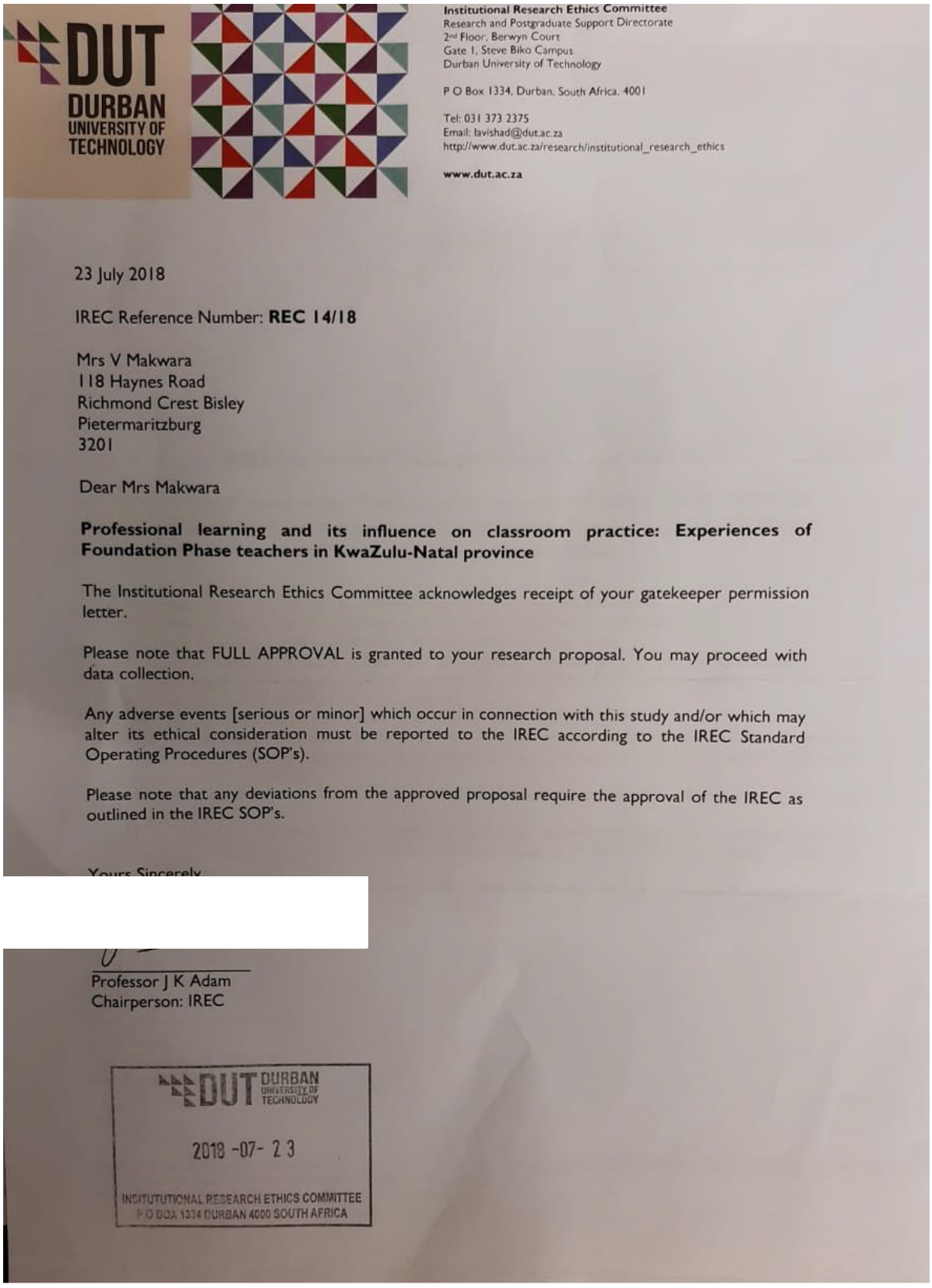
In this second interview, other issues will also be guided by what will emerge from interview one.

INTERVIEW THREE: FACE-TO-FACE INTERVIEW QUESTIONS RELATING TO REFLECTIONS ON MEANING

1. How do you feel about your professional learning as a qualified teacher? What did you learn from those professional learning activities?
2. What is your perception of professional learning as a teacher in a rural/urban/township primary school?
3. Is there anything you may want to ask me?

Addressing any issue arising in interview 1 & 2

Appendix Two: DUT ethical clearance



DUT
DURBAN UNIVERSITY OF TECHNOLOGY

Institutional Research Ethics Committee
Research and Postgraduate Support Directorate
2nd Floor, Berwyn Court
Gate 1, Steve Biko Campus
Durban University of Technology

P O Box 1334, Durban, South Africa, 4001

Tel: 031 373 2375
Email: lavishad@dut.ac.za
http://www.dut.ac.za/research/institutional_research_ethics

www.dut.ac.za

23 July 2018

IREC Reference Number: **REC 14/18**

Mrs V Makwara
118 Haynes Road
Richmond Crest Bisley
Pietermaritzburg
3201

Dear Mrs Makwara

Professional learning and its influence on classroom practice: Experiences of Foundation Phase teachers in KwaZulu-Natal province

The Institutional Research Ethics Committee acknowledges receipt of your gatekeeper permission letter.

Please note that FULL APPROVAL is granted to your research proposal. You may proceed with data collection.

Any adverse events [serious or minor] which occur in connection with this study and/or which may alter its ethical consideration must be reported to the IREC according to the IREC Standard Operating Procedures (SOP's).

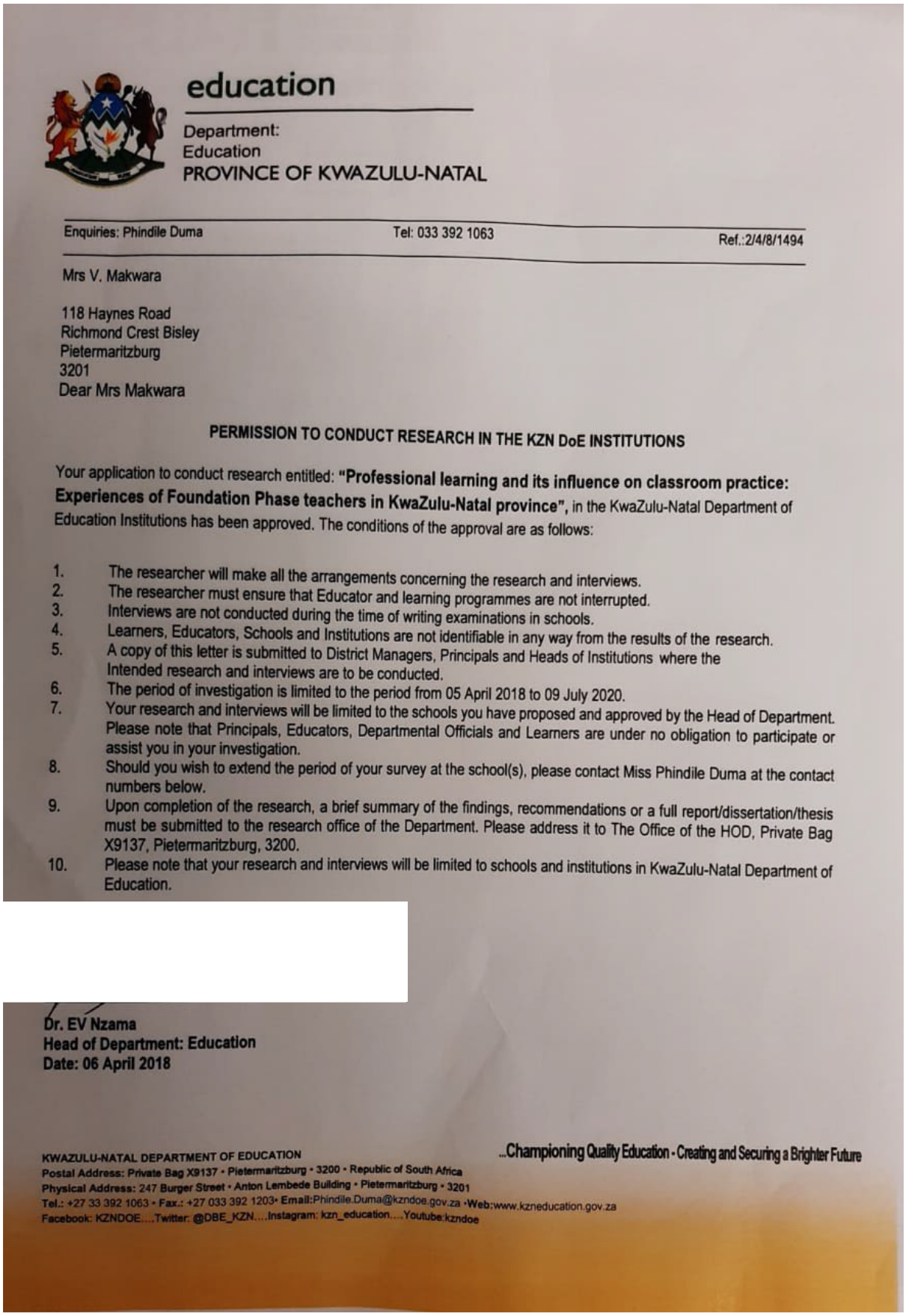
Please note that any deviations from the approved proposal require the approval of the IREC as outlined in the IREC SOP's.

Yours Sincerely

Professor J K Adam
Chairperson: IREC

DUT DURBAN UNIVERSITY OF TECHNOLOGY
2018 -07- 23
INCITUTUTIONAL RESEARCH ETHICS COMMITTEE
P O BOX 1334 DURBAN 4000 SOUTH AFRICA

Appendix Three: Gate keeper clearance



education

Department:
Education
PROVINCE OF KWAZULU-NATAL

Enquiries: Phindile Duma Tel: 033 392 1063 Ref.:2/4/8/1494

Mrs V. Makwara

118 Haynes Road
Richmond Crest Bisley
Pietermaritzburg
3201

Dear Mrs Makwara

PERMISSION TO CONDUCT RESEARCH IN THE KZN DoE INSTITUTIONS

Your application to conduct research entitled: **"Professional learning and its influence on classroom practice: Experiences of Foundation Phase teachers in KwaZulu-Natal province"**, in the KwaZulu-Natal Department of Education Institutions has been approved. The conditions of the approval are as follows:

1. The researcher will make all the arrangements concerning the research and interviews.
2. The researcher must ensure that Educator and learning programmes are not interrupted.
3. Interviews are not conducted during the time of writing examinations in schools.
4. Learners, Educators, Schools and Institutions are not identifiable in any way from the results of the research.
5. A copy of this letter is submitted to District Managers, Principals and Heads of Institutions where the Intended research and interviews are to be conducted.
6. The period of investigation is limited to the period from 05 April 2018 to 09 July 2020.
7. Your research and interviews will be limited to the schools you have proposed and approved by the Head of Department. Please note that Principals, Educators, Departmental Officials and Learners are under no obligation to participate or assist you in your investigation.
8. Should you wish to extend the period of your survey at the school(s), please contact Miss Phindile Duma at the contact numbers below.
9. Upon completion of the research, a brief summary of the findings, recommendations or a full report/dissertation/thesis must be submitted to the research office of the Department. Please address it to The Office of the HOD, Private Bag X9137, Pietermaritzburg, 3200.
10. Please note that your research and interviews will be limited to schools and institutions in KwaZulu-Natal Department of Education.

Dr. EV Nzama
Head of Department: Education
Date: 06 April 2018

KWAZULU-NATAL DEPARTMENT OF EDUCATION
Postal Address: Private Bag X9137 • Pietermaritzburg • 3200 • Republic of South Africa
Physical Address: 247 Burger Street • Anton Lembede Building • Pietermaritzburg • 3201
Tel.: +27 33 392 1063 • Fax.: +27 033 392 1203• Email:Phindile.Duma@kzndoe.gov.za •Web:www.kzneducation.gov.za
Facebook: KZNDOE....Twitter: @DBE_KZN....Instagram: kzn_education....Youtube:kzndoe

...Championing Quality Education - Creating and Securing a Brighter Future

The Head of Department

KwaZulu-Natal Department of Basic Education

P. Bag X9136

Pietermaritzburg

……

Dear Sir/ Madam

RE: REQUEST FOR PERMISSION AND CONSENT TO CONDUCT EDUCATIONAL RESEARCH IN YOUR PRIMARY SCHOOLS.

My name is Violet Makwara, a student at Durban University of Technology and currently pursuing a PhD - Teacher Development Studies. I humbly request permission to conduct an educational study in your schools in rural areas in KwaZulu-Natal Province. The topic of my study is**: Professional learning and its influence on classroom practice: Experiences of Foundation Phase teachers in KwaZulu-Natal province.**

Further information regarding this study please contact me (071 809 2055 or email address: makwarav@gmail.com) for clarity or additional comments during the study and at any time after the study is complete or my supervisor: Prof T. G. Mukeredzi, PhD and Prof Julia Preece, PhD.

Researcher: Violet Makwara

Adult, Community and Post-Graduate Education Unit

Durban University of Technology Indumiso/Midlands Campus

15 JF Sithole Road, Imbali 3201

Pietermaritzburg

KwaZulu-Natal, South Africa

Cell 0762995974; 082 605 6401

Thank you for your time and consideration in this matter.

Yours sincerely,

Mrs. Violet Makwara (071 809 2055)

The Principal …….

Dear Sir / Madam

REQUEST FOR PERMISSION AND CONSENT TO RESEARCH ON TEACHERS IN YOUR SCHOOL

My name is Violet Makwara, a student at Durban University of Technology and currently pursuing a PhD in Teacher Education-Teacher Development Studies. I humbly request permission to conduct an educational study at your school. The topic of my study is: **Professional learning and its influence on classroom practice: Experiences of Foundation Phase teachers in KwaZulu-Natal province.**

I have provided you with a copy of my proposal which includes copies of the data collection tools and consent and/ or assent forms to be used in the research process, as well as a copy of the approval letter which I received from the Institutional Research Ethics Committee (IREC). You may contact me (0718092055 or email address: makwarav@gmail.com) for clarity or additional comments during participation and at any time, even after the study is complete or my supervisors: Prof T. G. Mukeredzi, PhD and Prof Julia Preece, PhD.

Researcher: Violet Makwara

Adult, Community and Post-Graduate Education Unit

Durban University of Technology Indumiso/Midlands Campus

15 JF Sithole Road, Imbali 3201,

Pietermaritzburg, KwaZulu-Natal, South Africa

Cell 0762995974; 082 605 6401

Thank you for your time and consideration in this matter.

Yours sincerely,

Mrs. Violet Makwara (071 809 2055)

To be completed by The School Principal

I…… hereby confirm that I understand the contents of this document and nature of the research, and I give authority and consent for teachers to participate in this research. I understand that participation is voluntary and they are at liberty to withdraw from the study at any stage, should they desire.

_____ _____

Signature of School principal Date & School Stamp

The District Manager

……

……..

……

Dear Sir/ Madam

RE: REQUEST FOR PERMISSION AND CONSENT TO CONDUCT EDUCATIONAL RESEARCH IN YOUR PRIMARY SCHOOLS

My name is Violet Makwara, a student at Durban University of Technology and currently pursuing a PhD in Teacher Education - Teacher Development Studies. I humbly request permission to conduct an educational study in your schools in KwaZulu-Natal province. The topic of my study is: **Professional learning and its influence on classroom practice: Experiences of Foundation Phase teachers in KwaZulu-Natal province.**

I have provided you with a copy of my proposal which includes copies of the data collection tools and consent and/ or assent forms to be used in the research process, as well as a copy of the approval letter which I received from the Institutional Research Ethics Committee (IREC). Further information regarding this study please conduct me (0718092055 or email address: makwarav@gmail.com) for clarity or additional comments during the study and at any time after the study is complete or my supervisor: Prof T. G. Mukeredzi, PhD and Prof Julia Preece, PhD.

Researcher: Violet Makwara

Adult, Community and Post-Graduate Education Unit

Durban University of Technology Indumiso/Midlands Campus

15 JF Sithole Road, Imbali 3201

Pietermaritzburg

KwaZulu-Natal, South Africa

Cell 0762995974; 082 605 6401

Thank you for your time and consideration in this matter.

Yours sincerely,

Mrs. Violet Makwara (071 809 2055)

Appendix Four: Letter of information

Letter of Information for the participants

Title of the Research Study: Professional learning and its influence on classroom practice: Experiences of Foundation Phase teachers in KwaZulu-Natal Province.

Principal Investigator/s researcher Violet Makwara

Co-Investigator/s/Supervisors: Prof Tabitha Mukeredzi, PhD; Prof Julia Preece, PhD

Brief Introduction and Purpose of the Study

The purpose of the study is to explore how Foundation Phase teachers experience professional learning outside formal programmes and how that learning influences classroom practice. The study hopes to come up with recommendations for the Department of Basic Education and training.

You have been chosen because you are an ACT FP graduate, and you are teaching in a township school/ urban school/ rural school in KwaZulu-Natal Province.

Outline of the procedure

Your participation will take the form of face-to-face individual interviews, taking photographs and focus group discussions/interviews. If you are willing to be part of this research, your participation will be voluntary, and you are free to withdraw at any time. Three interviews with you will take place at your school but the focus group meeting where you meet with Foundation Phase teachers teaching in rural, township and urban schools in KZN, will be held at a venue that is convenient to all the teachers participating in this research. Interviews will last between 45 minutes to one hour. With your permission, I will record the interviews to help me capture all what you say accurately. The dates and times for interviews will be negotiated with you. I will turn off the tape recorder at any time you ask me to, and you may also choose not to answer questions at any time.

The study will take place between June 2018 and August 2018. I will request you to take photographs for **a month** reflecting on your professional learning experiences or anything that will remind you about what you learn during any activities. I will give you disposable cameras that you will use for taking photographs.

Follow up interviews may be carried out in order to verify information provided during interviews.

Risks or Discomforts to the Participant

You will experience no risks or discomforts since interviews will be taped only when permission has been granted by you.

Benefits to the participant and to the researcher

This study will provide a platform for you to be heard regarding how you learn outside formal programmes in rural schools.

The Department of Basic Education may use the information you give to come up with significant and relevant policies and programmes for professional learning which may benefit the South African education system and teachers in rural areas in other provinces. The findings of this research will be made available to the DBE and to yourself should you wish to read them.

I will use the information in this research to publish articles and to engage in further research.

Reasons why participants may be withdrawn from the study

You may choose to withdraw from the study at any time without any harm.

Remuneration

The focus group interviews will be held at DUT Indumiso Campus because it is a central venue, and transport is easily accessible. Therefore, each participant will be paid between R80 – R250 transport allowance depending on where you come from. I will provide some refreshments each day you participate in the study.

Costs of the study

You are not expected to cover any costs towards the study. The researcher will bear all the travelling and subsistence costs.

Confidentiality

All data will be processed in a computerised system and afterwards the research documents will be kept confidential from other people and locked up at a storage facility in the Durban University of Technology and they will be destroyed five years after my graduation. Pseudonyms would be used and no other identifying information about you will be written down so that you remain anonymous. Photographs that will be used in the study will only act as prompts to help you to remember your professional learning and talk about it and they will not be placed in the research report or thesis. After the interviews, I will collect all the photographs and keep them until the completion of the study. Thereafter, I will hand them over to the supervisor together with hard copies of data from face-to-face interviews and focus groups discussions. She will then lock them in the safe at the university for a period of 5 years and they will be shredded thereafter. Further, I will also consider the privacy of the participants. Hence, I will seek a private room at DUT Indumiso campus where there will be no interference. Again, I will respect the times given by the participants. I will also avoid delays and honour the appointments without giving them excuses. The participants will be assured about the confidentiality at every step of the research study. I will make sure that information generated will be solely for the research.

Research-related injury

There will be no research related injury to yourself as a result of the study.

Persons to contact in the event of any problems or queries

Supervisors: Prof Tabitha Mukeredzi, PhD; Prof Julia Preece, PhD
Tel: 0718092055; 076 2995 974; 082 605 6401
TabithaM@dut.ac.za ; juliap@dut.ac.za

Researcher *Cell: 071 809 2055* Email: makwarav@gmail.com

*The persons to contact in the event of any problems or queries- Research ethics administrator on **031 373 2375**. Complaints can be reported to:* Acting *Director: Research and Postgraduate Support Prof C E Napier: Contact number **031 373 2577**.*

CONSENT

Statement of Agreement to Participate in the Research Study:

- **I hereby confirm that I have been informed by the researcher, about the nature, conduct, benefits and risks of this study – Research Ethics Clearance Number: REC 14/18**
- **I have also received, read and understood the above written information (Information Letter for Participants) regarding the study (Appendix 1).**
- **I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.**
- **In view of the requirements of research, I agree that the data collected during this study can be processed in a computerised system by the researcher.**
- **I may, at any stage, without prejudice, withdraw my consent and participation in the study.**
- **I have had sufficient opportunity to ask questions (of my own free will) and declare myself prepared to participate in the study.**
- **I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.**
- **I have agreed to have the interview audio recorded and to take photographs depicting my professional learning activities.**
- **I have agreed to the use of pseudonym and for my photographs to be blurred if used in the study.**

---------- ---------- ---------- ----------

Full Name of Participate Date Time Signature/Right Thumbprint

---

I .....Violet Makwara…… herewith confirm that the above participant has been fully informed about the nature, conduct and risks of the above study.

…… …….. ……

Full Name of Researcher Date Signature

…… …….. ……

Full Name of Witness (If applicable) Date Signature

PARTICIPANT'S LETTER

Dear Participant,

My name is Violet Makwara, a student at Durban University of Technology and currently pursuing PhD in Teacher Education - Teacher Development Studies. I humbly request you to participate in my study entitled: **Professional learning and its influence on classroom practice: Experiences of Foundation Phase teachers in KwaZulu-Natal Province.** The purpose of the study is to understand how Foundation Phase teachers experience their professional learning outside formal programmes and how that learning influences their practices.

I have attached an **Information Letter** which explains all the research procedures. You may contact me (071 809 2055 or email address: makwarav@gmail.com) for clarity or additional comments during participation and at any time, even after the study is complete or my supervisors: Prof T. G. Mukeredzi, PhD and Prof Julia Preece, PhD.

Researcher: Violet Makwara
Adult, Community and Post-Graduate Education Unit
Durban University of Technology Indumiso/Midlands Campus
15 JF Sithole Road, Imbali 3201,
Pietermaritzburg, KwaZulu-Natal, South Africa
Cell 0762995974; 082 605 6401
Thank you for your time and consideration in this matter.

Yours sincerely,

Mrs. Violet Makwara (071 809 2055)

To be completed by participants

I…… hereby confirm that I understand the contents of this document and nature of the research, and I give my authority and consent to participate in this research. I understand that participation is voluntary and they are at liberty to withdraw from the study at any stage, should they desire.

_____ _____
Signature of participant Date

Appendix Five: The nature of learning in restricted sites

KEY: With reference to Appendix Five, a tick (√) represents more than three comments which the teacher made during the interview on a specific theme/code. The tick (√) further represents that the teachers mentioned something about that particular type of learning and the nature of learning, while a blank indicates that they were silent about it. The silence implies that the participants did not talk about having experienced these types of learning as well as the nature of learning in the interviews.

Table 5.1: Number of times where participants' comments suggested the nature of learning.

	Deep learning	**Surface learning**	**Assimilative learning**	**Accommodative learning**	**Cumulative learning**	**Transformative learning**
Participant 1	√		√			
Participant 2	√			√		√
Participant 3	√	√	√		√	
Participant 4	√		√			
Participant 5	√	√	√		√	
Participant 6	√		√			
Participant 7	√		√	√		
Participant 8	√	√	√		√	
Participant 9	√	√	√	√	√	
Participant 10	√		√	√		
Participant 11	√		√			
Participant 12	√	√	√		√	
Participant 13	√		√			√
Participant 14	√	√	√		√	
Participant 15	√					
Participant 16	√		√			√
Participant 17	√		√			
Participant 18	√		√			
Participant 19	√	√		√	√	
Participant 20	√	√	√		√	
Participant 21	√					
Participant 22	√	√	√	√	√	
Participant 23	√		√			
Participant 24	√		√	√		
Total NO. of teachers	**24**	9	**20**	7	9	3

Key: Codes (Participant 1 to 24) were used for confidentiality.
Participants in bold from each context participated in all three of the data generating techniques whereas those that are not bolded participated in focus group discussions only.

Appendix Six: The nature of professional learning in wider sites

KEY: With reference to Appendix Six, a tick (√) represents more than three comments which the teacher made during the interview on a specific theme/code. The tick (√) further represents that the teachers mentioned something about that particular type of learning and the nature of learning, while a blank indicates that they were silent about it. The silence implies that the participants did not talk about having experienced these types of learning as well as the nature of learning in the interviews.

Table 5.2: Number of times where participants' comments suggested the nature of learning in wider professional sites

	Workshops	Cluster meetings	Social gatherings
Participant 1	√	√	√
Participant 2		√	√
Participant 3	√	√	√
Participant 4		√	√
Participant 5	√	√	
Participant 6	√	√	√
Participant 7	√	√	
Participant 8	√	√	√
Participant 9	√	√	√
Participant 10	√	√	√
Participant 11	√	√	√
Participant 12	√	√	√
Participant 13		√	√
Participant 14	√	√	√
Participant 15	√	√	√
Participant 16	√	√	
Participant 17	√	√	√
Participant 18	√	√	√
Participant 19	√	√	√
Participant 20	√	√	
Participant 21	√	√	√
Participant 22	√	√	
Participant 23	√	√	√
Participant 24	√	√	√
Total No. of teachers	**21**	**24**	**19**

Key: Codes (Participant 1 to 24) were used to ensure confidentiality.
Participants in bold participated in all three of the data generating techniques whereas those that are not bolded participated in focus group discussions only.

Appendix Seven: The domains of knowledge

Tables below shows the number of the FP teachers who referred to acquiring the particular domains during focus group interviews, individual interviews and photo-elicitation interviews. The full table Appendix Seven and Appendix Eight shows the number of ticks for each domain. (A tick in the table represents at least two comments which a participant made with reference to gaining that particular knowledge domain. Blank spaces indicate that the responses did not suggest gaining that knowledge domain).

Table 6.2: Number of times where participants' comments suggested the domains of knowledge

	PK	PCK	Curriculum Knowledge	Knowledge of learners and their characteristics	Knowledge of educational contexts
Participant 1	√	√	√	√	√
Participant 2	√	√	√	√	√
Participant 3	√	√	√		√
Participant 4	√	√	√	√	√
Participant 5	√			√	
Participant 6	√	√	√	√	√
Participant 7	√			√	
Participant 8	√		√	√	√
Participant 9	√		√		√
Participant 10	√	√		√	√
Participant 11	√	√		√	√
Participant 12	√		√		√
Participant 13	√	√		√	√
Participant 14	√				
Participant 15	√	√	√	√	√
Participant 16	√			√	
Participant 17	√		√	√	√
Participant 18	√	√		√	√
Participant 19	√	√	√	√	√
Participant 20	√	√	√	√	
Participant 21	√		√	√	√
Participant 22	√			√	
Participant 23	√	√	√	√	√
Participant 24	√			√	√
Total No. of teachers	**24**	**13**	**14**	**20**	**18**

Key: Codes (Participant 1 to 24) were used to ensure confidentiality.
Participants in bold participated in all three data generating techniques whereas those that are not bolded participated in focus group discussions only.

Appendix Eight: Pedagogical knowledge skills

Table 6.3: Number of times participants' comments suggested the kinds of pedagogical knowledge gained

	Grouping	Handling diversity	Teaching resources	Improvisation
Participant 1	√	√	√	√
Participant 2	√	√	√	√
Participant 3	√	√	√	√
Participant 4	√	√	√	√
Participant 5	√	√	√	√
Participant 6		√	√	√
Participant 7	√	√	√	√
Participant 8		√	√	√
Participant 9	√	√	√	√
Participant 10	√	√	√	√
Participant 11	√	√	√	√
Participant 12	√	√	√	√
Participant 13		√	√	√
Participant 14	√	√	√	√
Participant 15	√	√	√	√
Participant 16	√	√	√	√
Participant 17	√	√	√	
Participant 18		√	√	
Participant 19	√	√	√	
Participant 20		√	√	
Participant 21		√	√	
Participant 22	√	√	√	
Participant 23	√	√	√	
Participant 24	√	√	√	
Total No. of teachers	**18**	**24**	**24**	**16**

Key: Codes (Participant 1 to 24) were used to subvert confidentiality.
Participants in bold participated in all three data generating techniques whereas those that are not bolded participated in focus group discussions only.

Appendix Nine: The professional learning influence

Table 6.4 below indicates the number of participants who referred to the professional learning influence on the different teaching strategies and processes during focus group discussions, individual interviews and photo-elicitation interviews. The table shows the number of ticks for each influence. (A tick in the table represents at least two comments which a participant made with reference to a particular professional learning influence. Blank spaces indicate that the responses did not suggest an influence on that professional learning.)

Table 6.4: Number of times that participants' comments suggested the professional learning influences on teachers' classroom practice

	Assessment	**Interaction**	**Play**	**Group work**	**Handwriting**	**Drawing**	**Whole class teaching**
Participant 1	√	√	√	√	√	√	
Participant 2	√	√	√	√	√	√	
Participant 3	√	√	√	√		√	
Participant 4	√	√	√	√	√		
Participant 5	√	√	√	√			
Participant 6	√			√	√		
Participant 7	√	√	√	√	√	√	
Participant 8	√	√	√			√	
Participant 9	√	√	√	√	√	√	
Participant 10	√	√	√	√		√	
Participant 11	√		√	√			
Participant 12	√	√	√		√	√	
Participant 13	√	√		√			
Participant 14	√	√	√	√			
Participant 15	√	√		√			
Participant 16	√	√				√	
Participant 17	√			√	√	√	√
Participant 18	√	√	√		√	√	√
Participant 19	√	√		√	√		√
Participant 20	√	√		√	√		√
Participant 21	√	√					
Participant 22	√				√		√
Participant 23	√	√	√				√
Participant 24	√	√			√		
Total No. of teachers	**24**	**20**	**19**	**16**	**13**	**11**	**6**

Key: Codes (Participant 1 to 24) were used to ensure confidentiality.
Participants in bold participated in all three data generating techniques whereas those that are not bolded participated in focus group discussions only.