Applied competence in a distance learning programme for the professional development of Foundation Phase teachers

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Faculty of Education Sciences

Potchefstroom Campus, North-West University

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October 2015

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Dedication

I dedicate this study to my parents, Cor and Anneke van Niekerk, for all their love and support. Your belief in my abilities carried me through.

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ABSTRACT

The ongoing debate about the capacity of distance learning (DL) to assist in the development of teaching skills and to improve teaching practice is the focus of many inquiries in the field of teacher education. The practice-based nature of Foundation Phase teaching poses unique challenges for professional development of teachers through DL programmes. In order to address inadequacies identified in the literature and previous research, a *practical component* was designed and included in the revised version of the Advanced Certificate: Education - Foundation Phase, as part of a bursary project. In 2011 the Northern Cape Department of Education (NCDoE) enrolled 50 practising Foundation Phase teachers for this distance learning programme as the first of three cohorts in the bursary project.

A learning portfolio and audio-visual resources, designed according to principles derived from previous research and related literature, formed part of this practical component. The aim was to support teacher applied competence through developing pedagogical content knowledge, self-directedness, and a professional attitude, and through guiding the application of new knowledge and skills in practice. The completed portfolios further served as an instrument for the assessment of teacher performance with regard to applied competence.

The purpose of this study was to evaluate the value of the practical component of the revised Foundation Phase ACE programme delivered by the NWU via distance learning with specific focus on the way this component facilitates the development of applied competence and the way the portfolio provides for the assessment of professional classroom competencies of practising Foundation Phase teachers. The study further aimed to put forward a model for the development of applied practice based on the findings of the study.

In order to attain the aims of the study, the literature was explored to firstly determine the elements which contribute to applied competence in effective teacher professional development programmes. The literature was further explored to determine what the body of scholarship indicates with respect to programme design

features that support applied competence in DL programmes for teacher professional development.

An implementation evaluation study was then conducted on the programme by collecting data from 50 Foundation Phase teachers as the first of three cohorts enrolled for the bursary project. Data were primarily collected through multiple qualitative methods including a focus-group interview, individual interviews, written expectations as well as open ended questions of questionnaires. Descriptive data were also collected through semi-structured questionnaires. Qualitative data were analysed through content analysis to determine the theoretical and conceptual implications of the profile and teaching context of the Northern Cape Foundation Phase teacher enrolled for the DL Foundation Phase ACE programme, the expectations of these teachers regarding the way the practical component would support their applied competence in their contexts, and the teachers' experiences of the way the programme component supported the development of their applied competence. The study further determined the extent to which the learning portfolios interrogate the elements of applied competence. Quantitative data collected through semi-structured questionnaires were statistically analysed and served to support the interpretation of qualitative data.

The investigation was approached from a *constructivist* paradigm; an approach that falls under an interpretivist philosophical orientation. Although quantitative methods were used to gather descriptive statistical data in support of the qualitative data, the study is grounded in qualitative research methodology where the concern is with the formative evaluation of the DL programme component

The findings strongly confirm the value of such a practical component as part of a DL programme to support the elements of applied competence. However, the way the programme accommodates teacher profiles and teaching contexts will greatly influence the sustainability of the programme outcomes in practice. The findings further show that the portfolio as instrument for the assessment of applied competence requires careful planning and should provide strong guidance in the reflective process to support sustained outcomes of the programme in practice. A

suggested model for a DL programme for the professional development of Foundation Phase teachers is based on the findings of the study.

OPSOMMING

Die voortdurende debat oor die vermoë van afstandsleer om die ontwikkeling van onderrigvaardighede te waarborg en om die onderrigpraktyk te verbeter is die fokus van verskeie ondersoeke in die gebied van onderwysersopleiding. Die praktyksgebaseerde aard van Grondslagfase-onderrig bied besondere uitdagings vir die professionele ontwikkeling van Grondslagfase-onderwysers deur middel van afstandsleerprogramme. Om die tekortkomings soos geïdentifiseer in die literatuur en vorige navorsing te oorkom, is 'n praktiese komponent ontwerp en ingesluit by die *Gevorderde Onderwys-sertifikaat (GOS) – Grondslagfase* afstandsleerprogram van die Noordwes Universiteit. Die veranderde twee-jaarprogram is deel van 'n beursprojek soos ooreengekom tussen die Noord-Kaapse Departement van Onderwys (NKDoE) en die Noordwes-Universiteit se eenheid vir oop-afstandsleer (NWU-EOAL). In 2011 is 50 praktiserende Grondslagfase-onderwysers van die Noord-Kaap ingeskryf as die eerste van drie innames in die beursprojek.

'n Leerportefeulje en oudiovisuele hulpmiddels, ontwerp volgens beginsels soos afgelei uit vorige navorsing en verwante literatuur, vorm deel van die praktiese komponent. Die doel van die praktiese komponent is om onderwysers se toegepaste bekwaamheid te ondersteun deur die ontwikkeling van pedagogiese inhoudskennis, selfgerigtheid, en 'n professionele ingesteldheid, sowel as om onderwysers te lei in die implementering van kennis en vaardighede in die praktyk. Die voltooide portefeuljes dien verder as 'n instrument om die onderwysers se praktyksbekwaamheid te assesseer.

Die doel van die studie is om die waarde van die praktiese komponent van die veranderde GOS – Grondslagfase afstandsleerprogram te evalueer met spesifieke fokus op die manier waarop die praktiese komponent die ontwikkeling van praktiese bekwaamheid van die onderwysers ondersteun asook die waarde van die leerportefeulje as assesseringsinstrument vir onderwysers se praktiese

bekwaamheid as uitkoms van die afstandsleerprogram. Die studie het verder ten doel om ’n model daar te stel vir die ontwikkeling van praktiese bekwaamheid deur middel van afstandsleer gebaseer op die bevindings.

Om die doel van die studie te bereik, is die literatuur ondersoek om eerstens die kennisveld ten opsigte van elemente bydraend tot praktyksbekwaamheid binne effektiewe onderwysers-opleidingsprogramme te bepaal. Die literatuur is verder ondersoek om te bepaal wat die kennisveld aandui as effektiewe ontwerpseienskappe vir die ondersteuning van praktiese bekwaamheid in ’n afstandsleerprogram vir die professionele ontwikkeling van onderwysers.

’n Implementeringsevalueringstudie is gedoen deur data te versamel van die 50 Grondslagfase onderswysers as die eerste van drie innames vir die beursprojek. Data is hoofsaaklik versamel deur veelvuldige kwalitatiewe metodes insluitende fokusgroep-onderhoude, individuele onderhoude, geskrewe verwagtinge van deelnemers sowel as oop-einde vrae van vraelyste. Beskrywende data is ook versamel deur semi-gestruktureerde vraelyste. Kwalitatiewe data is geanaliseer deur inhoudsanalise om die teoretiese en konseptuele implikasies van die onderwysers-profiel sowel as die onderrigkonteks van die Noord-Kaapse Grondslagfase-onderwysers vir die afstandsleerprogram te bepaal, asook om die genoemde onderwysers se verwagtinge en ervarings van die program te bepaal met fokus op ondersteuning van hul praktiese bevoegheid deur die program. Die studie het laastens ondersoek ingestel na die mate waarin die leerportefeulje hom daartoe verleen om die elemente van praktiese bevoegheid as programuitkoms te evalueer. Kwantitatiewe data versamel deur semi-gestruktureerde vraelyste is statisties verwerk en het gedien om die interpretasie van kwalitatiewe data te ondersteun.

Die ondersoek is benader vanuit die konstruktivistiese paradigma; ’n benadering wat binne die interpretivistiese oriëntasie val. Alhoewel die studie ook kwantitatiewe metodes gebruik om beskrywende data, ondersteunend tot die kwalitatiewe data, te versamel, is die studie gegrond in die kwalitatiewe navorsingsmetodologie met belang in die formatiewe evaluering van die afstandsleerprogram-komponent.

Bevindings bevestig die waarde van die praktiese komponent as deel van ’n afstandsleerprogram om die elemente van praktiese bekwaamheid te ondersteun. Die manier waarop die program die onderwyser se profiel en onderrigkonteks akkommodeer, sal egter ’n bepalende rol speel in die volhoubaarheid van programuitkomste in die praktyk. Bevindings beklemtoon verder dat die gebruik van ’n portefeulje deeglike beplanning vereis om betekenisvolle assessering van praktiese bekwaamheid van onderwysers, soos gedemonstreer binne hul onderrigkonteks, te verseker. Daarbenewens is sterk begeleiding in die reflekteringsproses, as deel van die leerportefeulje-proses, noodsaaklik om volhoubare bevoegheid in die praktyk te bevorder. ’n Voorgestelde model vir die ’n afstandsleerprogram vir die professionele ontwikkeling van Grondslagfase-onderwysers is gebaseer op die bevindings van die studie.

ABBREVIATIONS AND ACRONYMS

§:	Section
ACE:	Advanced Certificate in Education
BEd	Hons: Honours Baccalaureus Educationis degree
EFA:	Education for all (UNESCO initiative)
CAPS:	Curriculum and Assessment Policy Statement (National South African School Curriculum)
CPTD:	Continuous Professional Teacher Development
DAP:	Developmentally appropriate practice
DBE:	Department of Basic Education
DHET:	Department of Higher Education and Training
DL:	Distance learning
DoE:	Department of Education
ET:	English translation
FAS:	Foetal Alcohol Syndrome
GMR:	Global Monitoring Report
Grade R:	Reception Year
HEI:	Higher Education Institution
HDI:	Human Development Index
HOD:	Head of Department (Where ‘department’ refers to a school phase such as Foundation Phase)
IC:	Industrialised country
ICT:	Information Communication Technology
IPET:	Initial Professional Education of Teachers

ISPD:	In-service Professional Development
ITE:	Initial teacher education
IWB:	Interactive White Board
LIC:	Less industrialised country
LMS:	Learning Management Systems
LOLT:	Language of learning and teaching
LSEN:	Learners with special educational needs
LTSM:	Learning and teaching support material
MG:	Multi Grade
MRTEQ:	Minimum Requirements for Teacher Education Qualifications (Policy on)
NC DBE:	Northern Cape Department of Basic Education
NCDoE:	Northern Cape Department of Education
NEEDU:	National Education Evaluation and Development Unit
NIC:	Newly Industrialised Country
NPDE:	National Diploma in Education
NSE:	Norms and Standards for Educators
NWU	North West University
ODL:	Open distance learning
OECD:	Organization for Economic Co-operation and Development
PCK:	Pedagogical content knowledge
PIRLS:	Progress in International Reading Literacy Study
PreQ:	Pre-implementation questionnaire
PostQ:	Post-implementation questionnaire

SD: Self-directedness

SD skills: Self-directed skills

SDL: Self-directed learning

SMT: School management team

SR: Self-regulated

SRL: Self-regulated learning

TIMMS: Trends in International Mathematics and Science Study

UODL: Unit for Open Distance Learning

UNESCO: United Nations Educational, Scientific and Cultural Organization

US: United States

KEY WORDS

Distance learning

Open distance learning

Foundation Phase teacher professional development

Applied competence

Pedagogical content knowledge

Self-directedness

Self-directed learning

Reflective teaching practice

Inquiry -based practice

Professional teaching attitude

Guided applied practice

SLEUTELWOORDE

Afstandsleer

Oop afstandsleer

Grondslagfase-onderwyser professionele ontwikkeling

Praktiese bekwaamheid

Pedagogiese inhoudskennis

Selfgerigtheid

Selfgerigte leer

Refleksiewe onderrigpraktyk

Ondersoekende onderrigpraktyk

Professionele onderwys gesindheid

Begeleide toegepaste praktyk

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CHAPTER 1

INTRODUCTION, PROBLEM STATEMENT AND MOTIVATION FOR THE STUDY

1.1 INTRODUCTION

Research emphasises the crucial importance of developing and investing in the teaching profession. It is becoming increasingly evident that there is a strong relationship between quality teaching and learners' learning and expectancy of success in later life. The research findings of Bransford, Darling-Hammond and LePage[1] (2005, p. 13) indicate that the qualifications of a teacher impact as much on learner achievement as the background or socio-economic status of learners. The poor standard of education in South African schools, especially in rural areas, is confirmed by the results of the Annual National Assessments Report whereby the performance of grades one to six learners as well as grade nine learners are measured at national, provincial and district levels (South African Department of Basic Education, 2013, p. 82). The blame for poor academic standards in South African schools is often laid at the door of higher education institutions (HEIs) responsible for teacher education programmes. A document presented in 2009 at the Workshop on Teacher Education Qualifications states:

> The quality of a substantial proportion of teacher education programmes is questionable, with few meeting the minimum standards in the areas of programme organisation, design, coordination and work-based learning. (South African Department of Basic Education, 2010, p. 6)

The South African government views distance education as a way to attain the goals of *Action plan 2014: towards the realisation of schooling 2025* (South African Department of Basic Education, 2011a) and is exploring distance education as a way to make much needed training accessible to a large number of teachers and consequently improving the standard of education in schools. The Department of

[1] Page numbers are not required when using the APA reference style but users are encouraged to do so (Perdue Edu, 2009). Page numbers were thus provided for in-text referencing where available.

Basic Education currently allocates bursaries to a large number of under - or unqualified practising Foundation Phase teachers for enrolment in distance learning (DL) programmes offered by HEIs (South African Department of Basic Education, 2011a, p. 24; South African Departments of Basic Education and Higher Education and Training, 2011, pp. 140, 145). The practice-based nature of early childhood education necessitates guided learning in practice to support the development of teaching competencies. Arnold-Grine (2007, p. 25) refers to the positive effect of learning-by doing in the education of early childhood teachers. The criteria for applied competence as described in the MRTQ (South African Department of Higher Education and Training, 2011, pp. 7, 8) (§1.2) concur with the definition supplied by the European Qualifications Framework (European Union, 2008):

> 'Competence' means the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development. In the context of the European Qualifications Framework, competence is described in terms of responsibility and autonomy. (p. 11)

Various factors hamper the implementation and authentic assessment of relevant applied competence through work-based learning in a DL programme. If teachers are ultimately to contribute to an improved standard of education in South African schools, the quality and effectiveness of DL programmes are critically important for their professional development. It is therefore essential to evaluate the way DL programmes equip teacher with pedagogical knowledge and skills which can be successfully applied in different classrooms and circumstances.

1.2 CLARIFICATION OF TERMINOLOGIES

Clarification of the following terminologies is essential to the statement of the problem:

Advanced Certificate in Education (ACE): The Foundation Phase curriculum within the Professional Educator Development Programme of the Advanced Certificate in Education presented by the North-West University (in this study referred to as the NWU Foundation Phase ACE programme); South African Qualifications Authority (SAQA) defines the ACE programme as follows: The ACE is a flexible qualification on Level 6 (of the National Qualifications Framework) aimed at providing educators

with the opportunity of updating, enriching, and supplementing their existing knowledge in particular areas of specialisation, or of changing their areas of specialisation. The former might become necessary due to new developments in an area of study while the latter may be a response to changing national needs or a need for a change in career path (South African Qualifications Authority, 2001, p. 47).

Applied competence: The ability to integrate and apply different types of knowledge in the moment of practice to secure effective learning (South African Department of Higher Education and Training, 2011, pp. 7, 8).

Applied practice: Prior learning and new learning are integrated and applied to the context of the work environment (Council on Higher Education, 2011, p. 35).

Developing context: In the context of this study some communities in South Africa are still viewed as *developing,* with specific focus on low socio-economic circumstances, a low rate of literacy, and a low human development index (HDI) relative to other communities in the country. Student-teachers enrolling for a DL programme in the South African context (which is the focus of this study) are often from a developing context.

Developing Country versus Developed Country: Often a socio-economic category is necessary as background to the context of a research study. The literature differentiates between d*eveloped* and d*eveloping* countries or contexts. Previously the term *developing country* was used to refer to a nation with lower living standards, lower rates of literacy, an underdeveloped industrial base, and a low HDI relative to more developed countries. There are no universal agreed-upon criteria for what makes a country *developing* versus *developed,* and which countries fit these categories. Recently these descriptive terms have been replaced with more defined expressions namely ‘industrialised’, ‘less industrialised’ and ‘newly industrialised’ (International Monetary Fund, 2011).

Distance learning (DL): An educational process in which a significant proportion of the teaching is conducted by someone removed from the learner in space and/or time (Creed, 2001, p. 8).

Evaluand: The object of evaluation (Mertens, 2010, p. 69). In this study the evaluand is a newly devised practical component added to a revised DL programme for Foundation Phase teachers.

Foundation Phase teacher: Educators employed to teach Grades 1 to 3; The Department of Basic Education (DBE) includes a pre-school grade known as grade R, (reception) as part of the Foundation Phase. The DBE is still in the process of incorporating grade R as part of compulsory schooling in South Africa; however, the evaluand is specifically geared at the professional development of teachers responsible for the education of Grades 1 to 3.

Industrialised countries (IC) versus less-industrialised and newly Industrialised Countries (NIC): The term *less industrialised country* is viewed as more appropriate when referring to a developing country. Since 2011, South Africa has been listed as a *newly industrialised country (NIC)* (International Monetary Fund, 2011). NICs are characterised by an economy that has not yet reached first world status but has in a macroeconomic sense outpaced its developing counterparts.

Initial teacher education (ITE): A pre-service course which formally qualifies and prepares teachers for the teaching profession.

Learner: Foundation Phase pupils taught by the teachers in the classroom

Lecturer: Teacher-educator at a Higher Education Institution

Open distance learning (ODL): A more flexible, learner-centred approach to distance learning where students may choose when, where, how, and at what pace they want to learn (Kanuka & Conrad, 2003). Although the programme under investigation adheres to the definition of ODL, the literature generally uses the term ‘distance learning’ (DL) to refer to programmes delivered over a distance irrespective to the ‘scale of openness’ of the programme design. The term DL will thus be used to refer to the mode of delivery of the evaluand.

Pedagogical Content Knowledge (PCK): The blending of content and pedagogy into an understanding of how particular topics, problems, or issues are organised, represented, and adapted to the diverse interests and abilities of learners (Shulman, 1987).

Teacher professional development: Professional development refers to all forms of facilitated teaching experiences designed to support the acquisition of professional knowledge, skills, and dispositions, as well as the application of this knowledge in practice (National Professional Development Center on Inclusion, 2008, p. 3).

Student-teacher: The international literature on teacher education mostly refers to initial teacher education (ITE) programmes. The term student-teacher is used in this report when referring to the students enrolled for ITE programmes.

Teacher: The programme which is the focus of this implementation evaluation is aimed at practising under-qualified teachers whose only option to attain qualifications is through part-time study. Although these teachers are registered students enrolled in a DL programme, the term 'teacher' is used in this report to refer to practising teachers enrolled for the NWU ODL Foundation Phase ACE programme.

1.3 RATIONALE FOR THE STUDY

The dire need for usable knowledge grounded in research on effective DL programme design for teacher professional development is confirmed by Dede, Ketelhut, Whitehouse, Breit and McCloskey (2009, p. 15): "If we are to address issues of effectiveness and impact, we need to contribute continuously to an evidence-based conceptual framework that provides both robust explanatory power for theory and model building to support designers, implementers, and participants."

The new teacher qualification framework indicates that DL and part-time studies will be increasingly used in initial teacher education programmes, for the professional development of practising teachers as well as for programmes where persons qualified for other vocations want to pursue careers in teaching (South African Department of Higher Education and Training, 2011, p. 23; South African Departments of Basic Education and Higher Education and Training, 2011, p. 11). Concern with regards to the effect of poor teacher competency on the standard of learning in the Foundation Phase is raised in the literature (Taylor, 2015, p. 6). Taylor blames the weak subject content knowledge, lack of proficiency in English and generally poor reading and writing skills of learners in South African schools on current teacher education programmes.

The DHET is presently enrolling thousands of teachers in DL professional development programmes to improve teacher competence. Evaluating current DL models for teacher education is thus critical to guide the development and streamlining of future DL programmes aiming to support applied teaching competence. This evaluation study therefore aims to evaluate the effectiveness of design features implemented as part of a practical component in a DL programme offered to Foundation Phase teachers in South Africa. The rationale for this implementation evaluation is founded in the need to improve DL programmes for teacher education. In line with the recommendations of Dede et al. (2009, p. 15) findings of this evaluation serve to inform programme designers and teacher-educators with regards to effective DL programmes aiming to support the applied competence of Foundation Phase teachers. Identifying and documenting of findings on the strengths and weaknesses of such a practical component (§1.4 and §4.2.2) will further contribute to the knowledge base on ways to support applied competence of teachers through DL. While no related research conducted in the South African context could be identified, the general lack of literature in this field is confirmed by Dede et al. (2009, p. 14).

The problem that motivated this investigation emanates from the background to the study, including the rationale for implementing DL for teacher professional development as well as the implications of DL for effective teacher education. An explanation of the purpose and design of the DL programme that is the focus of this study further informs the problem statement. Therefore the following section discusses the background to the study and ends with the statement of the problem.

1.4 BACKGROUND TO THE STUDY AND PROBLEM STATEMENT

The diversity in South African communities has resulted in some communities still living and working in a developing milieu where low socio-economic circumstances and a lower rate of literacy are the norm. Because of a shortage in teachers willing to work in developing communities, unqualified teachers are often employed in these areas on the understanding that they can attain qualifications through a DL programme (Welch, 2008, p. 327). The National Professional Diploma in Education

(NPDE) and the Advanced Certificate in Education (ACE) (§1.2) were offered by various HEIs via DL to supply in this need for professional development of practising teachers (South African Departments of Basic Education and Higher Education and Training, 2011, pp. 12, 13).

The SA Department of Education (DoE) increasingly views DL as a way to improve teacher qualification and teacher professional development and consequently the standards of education (South African Department of Basic Education, 2011a, p. 27). In 2011 the Ministry of Education initiated the process of revising the qualification routes for teacher education (South African Department of Higher Education and Training, 2011, p. 22; South African Departments of Basic Education and Higher Education and Training, 2011, p. 11) and according to these changes the NPDE and ACE programmes will not be an option for under - or unqualified practising teachers to attain accredited qualifications through DL in the future. However, the framework for teacher education (South African Department of Education, 2007, p. 15 and 23) suggests that programmes such as initial degrees in teacher education (BEd), teaching diplomas (Advanced Diploma in Education), as well as teaching certificates (Advanced Certificate in Teaching) could be offered in both contact and distance modes. It is thus apparent that DL will play an even bigger role in the delivery of teacher education programmes in the future.

The relevant literature however expresses concern about the capacity of DL programmes to develop teacher professional competencies through applied practice (Binns & Wrightson, 2006, p. 8; Creed, 2001; Ojala, Karevaara, & Reunamo, 2004; Paige, Chartres, & Kenyon, 2008; Upko, 2006). Perraton (2000) summarises the critique against DL programmes for teacher training:

> Open and distance learning is regarded by students and ministries of education as a second-rate system used to offer a shadow of education while withholding its substance. It is an inefficient but cheap way of containing educational demand without meeting it. (p. 199)

The ongoing debate about the capacity of DL to support skills development and to improve practice has been the main focus of many inquiries (Daniel, 2010; Perraton, Creed, & Robinson, 2002; Rowntree, 1992; Siaciwena, 2007). Welch and Gultig (2002, pp. 23, 38) state that classroom-based in-service teacher education

programmes should encourage a balance between theory and practice which will enable teachers to reflect upon and improve their own practice. The theories of John Dewey and Lev Vygotsky underscore the premise that when knowledge is taught in context, learning becomes meaningful in practice. The literature strengthens these theories by highlighting guided experiential learning as a determinant of effective teacher education programmes (Ball, 2000; Brownlee & Berthelsen, 2006; O'Sullivan, 2004; Sandberg, Anstett, & Wahlgren, 2007).

According to Lobman, Ryan, McLauchlin, & Ackerman (2004, p. 9), mere academic achievement does not guarantee that qualifications will improve or that classroom practice will be positively impacted. In light of the current initiatives to improve poor education standards in South Africa by equipping teachers to act as agents of change it is critical that teacher education programmes will make a difference where it matters most, namely the classroom practice of these teachers. Woolfolk Hoy and Burke Sperob (2005, p. 354) and Sandberg et al. (2007, pp. 313, 314) concur regarding the importance of applying practical knowledge for durable changes in behaviour. The practice of teaching is a situated and interpretive contextual practice (South African Department of Education, 2005a, p. 6). Lobman et al. (2004, pp. 14 - 16) further accentuate that “only when teacher-students are exposed to a quality classroom environment and have the opportunity to pragmatically link learning content in a meaningful and reflective manner, will professional development be effective.”

Both Fraser (2001, p. 59) and Lobman et al. (2004, p. 15) distinguish between knowledge-based and performance-based competencies. According to Fraser (2001, p. 60), knowledge is evidenced *in action*. The literature confirms the critical need for supervised and guided application of knowledge in practice. DL programmes aimed at supporting the applied competence of practising teachers should thus not only provide opportunities for teachers to demonstrate applied knowledge and competencies in practice, but also implement formative assessment of applied competence in real-life contexts. It is thus evident that the practice-based disposition of Foundation Phase teaching and learning poses unique challenges. This is even more so where DL is used for the professional development of under-qualified teachers practising in a developing context.

The Northern Cape Department of Education (NCDoE) entered into a tender agreement with the NWU for the professional development of 260 practicing Foundation Phase teachers as part of a bursary project. The requirements of the tender agreement included the development of teacher applied competence as well as proficiency in supporting learners with special educational needs (LSEN) through the Foundation Phase ACE programme delivered via DL.

The ACE programme offered by the NWU and delivered via DL is traditionally a one-year programme aimed at the professional development of under-qualified Foundation Phase teachers, and mostly focuses on theoretical content. The model provides teachers with the opportunity to attend real-time lectures presented by NWU academic staff and broadcasted to 53 contact centres[2] countrywide via interactive whiteboards. Recordings of the presentations are placed on the Internet should students not be able to attend the contact sessions. Qualified facilitators employed at contact centres support teachers during identified sessions with problems they may experience. Teachers who are enrolled for the programme can also request assistance telephonically or via email.

The traditional programme does not contain a work-integrated learning component or assessment of practical competence and relies on the prior learning and current teaching practice of teachers as the only opportunity for applying new knowledge and skills in practice. The traditional DL programme design thus relies heavily on summative assessment of knowledge gained, and on self-regulated application of new knowledge in practice without any formal or formative assessment of applied competence.

In order to adhere to the tender requirements, the researcher as part of a programme development team, explored the literature to identify core elements and design features that support applied competence in a DL programme for Foundation Phase teachers. The findings from an earlier evaluation of the Advanced Certificate: Education - Foundation Phase programme (hereafter referred to as the NWU Foundation Phase ACE programme) (Kruger, 2010), concur with the findings of a

[2] Number of centres subject to change as student numbers in a region determines the need for new centres or closing of current centres.

study conducted in Australia (Green et al., 2010, p. 270) which suggests that DL programmes for early childhood teachers should find ways to support applied competence by including guided applied practice and reflective learning while accommodating the profile and teaching context of the teacher. Further exploration of the literature confirmed that the core elements in the effective development of applied teacher competence are relevant PCK, self-directed competencies, guided reflection on theory and practice, inquiry learning, and guided application of knowledge in practice (Opfer & Pedder, 2011, p. 388; Richter, Kunter, Klusmann, Lüdtke, & J., 2010; Shulman, 2005; Shulman and Shulman, 2004, p. 1; Sparks, 2002, p. 4). The literature further confirmed that professional development programmes need to incorporate design features that will support attitudinal development such as motivation and professional orientation (Evans, 2008, p. 20; Richter et al., 2010, p. 116). In order to comply with the requirements of the NCDoE, and to address inadequacies identified in the literature regarding insufficient support for the development of applied competence in DL programmes, a practical component was designed as part of the Foundation Phase ACE programme (§1.2). The programme designers firstly explored the literature to find ways to support the development of identified elements of applied competence while also accommodating the diverse profile and teaching context of the Foundation Phase teacher practising in the Northern Cape. I regard the profile of the teacher enrolled for the programme as made up of factors that form part of the teacher's teaching background, including demographic and socio-economic background, prior qualification, teaching experience and the type of school where the teacher is employed. The teacher-population enrolling for this DL professional development programme are from all spheres of the country's teacher population and the programme needs to find ways to accommodate a diverse teacher profile (§5.2.1).

The literature revealed the value of a learning portfolio in supporting and assessing applied competence in teacher education programmes (Galluzzo, 2005, p. 145; Klenowski, 2002, p. 3; Orland-Barak, 2005, p. 27; Smith, 2011, p. 36). A learning portfolio was therefore designed to support and assess the development of applied competence by guiding teachers in the application of theory in practice and reflecting on the implications of theory for their teaching context. In order to further support

applied practice and reflection on practice, audio-visual material based on aspects of Foundation Phase classroom practice also formed part of the practical component of the revised ACE programme. Teachers received a digital video disc (DVD) with video clips of lesson presentations as well as learning and teaching support material (LTSM) which they could use in practice. A comprehensive portfolio study guide guided them in mastering of theoretical content in a reflective manner as set out in seven accompanying manuals while giving directions for practice-based tasks to be compiled in their learning portfolios. The portfolio study guide continuously referred teachers to related audio-visual material in the DVD to support reflection on practice and to link theory to practice. While the portfolio aimed to guide teachers in the application of theory in practice, the audio-visual resources specifically aimed to guide teachers in linking theoretical content to practice and to support the development of applied competence through reflection on practice. This practical component which is the object of evaluation in this study, is explained in more detail in Chapter four (§4.2.1 and §4.2.2). In this study the practical component is referred to as the evaluand (Mertens, 2010, p. 69).

Prior research studies on DL programmes for teacher education confirm the need for alternative strategies to specifically support applied competence (Green, Edwards, Wolodko, Stewart, Brooks and Littledyke, 2010, p. 270; Grossman & McDonald, 2008, p. 198; Kruger, 2010, pp. 249,250; Perraton et al., 2002, p. 14). Evaluation of new design features is essential to determine if and how such alternative strategies succeeds in supporting applied competence.

Although other ACE programmes delivered via DL in South Africa have been evaluated (Aluko, 2009; Fresen & Hendriks, 2009), these programmes were not aimed at the professional development of Foundation Phase teachers, and the evaluations did not focus on applied competence. Studies based on the way design features within a practical component of a DL programme support applied competence of Foundation Phase teachers in South Africa, could not be identified in the literature. This implementation evaluation thus sets out to add to the literature with regards to effective DL programme design for Foundation Phase teachers. The study therefore specifically aimed to investigate if and how teachers enrolled for this

programme experienced the practical component added to a DL programme to have supported the development of their applied competence.

The following section grounds the research problem in related literature and ends with the specific research questions emanating from the literature.

1.5 REVIEW OF RELEVANT LITERATURE

The crisis in South Africa's education system has far-reaching implications for government as well as for institutions offering education programmes for Foundation Phase teachers. The 2009 Teacher Development Summit acknowledged the gravity of the problem and identified the need for improved standards in teacher in-service training in South Africa (Government Communication and Information System, 2010). As a result of this summit, policies are currently implemented to allow teachers to receive training through distance education and through the development of relevant training programmes by universities and private training providers. The need to evaluate current DL programme design with regards to the way it contributes to applied competence of practising teachers is thus apparent.

This investigation is therefore based on the relevant literature on i) core elements of applied competence in teacher professional development, ii) South African policy on the role of applied teacher competence in teacher education, iii) the rationale for DL and iv) the implementation of DL for the professional development of Foundation Phase teachers.

1.5.1 Elements of applied competence as outcome of professional teacher development

A clear concept of the different elements of teacher professional development is necessary in order to define the role of applied competence in teacher professional development. Richter et al. (2010, p. 116) emphasise the elements of applied teaching competence when they define teacher professional development as the "uptake of formal and informal learning opportunities that deepen and extend teachers' professional competence, including knowledge, beliefs, motivation and self-regulatory skills." Vorwerk (2005, p. 4) further highlights the role of the teaching

context in applied competence by defining applied competence as “the ability to put into practice in the relevant context the learning outcomes acquired in obtaining a qualification.”

The literature in general supports these identified elements which include but are not limited to pedagogical content knowledge (PCK), self-directedness such as a reflective and inquiry-based approach to practice, guided application of PCK in practice, and the development of a professional attitude such as motivation and commitment that actuate all teaching and learning in and out of the classroom. The indisputable interrelatedness of these elements plays a determining role in the applied practice of teachers. The literature was explored to determine the role of each in the development of applied competence. However, where a clarification of any single element seemed meaningless without declaring the related effect between the elements, they are discussed in an integrated way in the following section. These elements as well as determinants of sustainable applied competence as programme outcome are explored in a more comprehensive way in Chapter three (§3.2 and §3.3).

Firstly, the literature emphasises the importance of ***teacher PCK*** such as knowledge of learning content, pedagogical knowledge, and curriculum specific knowledge as outcome of an effective teacher education programme (Darling-Hammond, 2010b, p. 36; South African Departments of Basic Education and Higher Education and Training, 2011, p. 4; Van Driel & Berry, 2012, p. 26). However, presenting and assessing a knowledge base alone may not guarantee quality learning and the development of applied competence. A second critical element highlighted in the literature is the application of theory in practice. The vital role of the relationship between PCK and ***guided applied practice*** in effective education has been the focus of various investigations of teacher professional development (Biggs, 2001; Bof, 2004; Burns & Schaefer, 2003; Gore, Griffiths, & Ladwig, 2004; Jay & Johnson, 2002; Korthagen & Kessels, 1999; Liu & Juang, 2002; Sperling, 2005). While PCK includes teacher understanding of how learners learn or fail to learn specific subject matter (Van Driel & Berry, 2012, p. 26), applied practice through experience learning involves increased pedagogical skills and behaviour required from a professional teacher (Darling-Hammond, Chung Wei, Andree, Richardson, & Orphanos, 2009, p.

19 and 29). A study by Boyd, Grossman, Lankford, Loeb, and Wyckoff (2009) further confirm the positive relationship between teacher education programmes that focus on guided applied classroom practice and superior teacher performance in practice.

A third important feature of teacher professional development is ***teacher professional attitude*** (Opfer & Pedder, 2011, p. 387; Tsai, 2007, p. 239; Vreugdenhil, 2005, p. 2). Attitude plays an important role in teacher learning and professional development and includes aspects such as motivation, personal beliefs, commitment and principles (Vreugdenhil, 2005, p. 2). Attitude is closely related to teacher behaviour and ***self-directedness*** (SD), as a fourth element of applied competence. SD includes self-regulation, the inclination to reflect on own learning and finding ways to improve own teaching practice through inquiry and interaction (Opfer & Pedder, 2011, p. 395). Shulman (1987, p. 13) also refers to this element of teacher applied competence when he describes effective teaching as "comprehension and reasoning, as transformation and reflection."

Apart from these aforementioned elements, the literature highlights the important accommodation of the profiles of teachers through programme design and content as a critical prerequisite for sustainable programme outcomes (Biggs, 1987a, pp. 9-11). This involves recognition of diverse ***backgrounds*** of the target teacher population (Kember, Biggs, & Leung, 2004, p. 263). The literature further confirms that teachers who enrol for DL programmes in developing countries do not always have access to resources and may lack experience in academic learning (Aldridge, Fraser, & Ntuli, 2009, pp. 154, 165; Fresen & Hendriks, 2009; Shava & Ndebele, 2014, pp. 321, 324). Meeting the needs of diverse teacher populations is therefore even more critical for DL programmes where teachers or students from diverse backgrounds have to master programme outcomes with limited support. Hill (2012, pp. 26, 27) asserts that before the planning of a DL programme begins, developers should take substantial time to identify the learning needs of the students.

While Villegas-Remers (2003, p. 15) views practical knowledge or knowledge that is embedded in practice as essential for teaching, Moore (2007a, p. 134) stresses that the ***teaching context*** within which practical knowledge is acquired should be recognised by DL programmes. Evaluation of applied competence as programme outcome should thus take account of the influence of the teaching context within

which teachers acquire and apply PCK. The reciprocal relationship between these features is confirmed by Opfer and Pedder (2011, p. 388): “It is the interaction and intersection of knowledge, beliefs, practices, and experiences that constitute a teacher’s individual orientation to a learning system.” Aligning DL programme design with the specific learning needs of the target population and the context in which they need to implement new knowledge and skills therefore emphasises the need for research which includes data based on the voice of the student, in this case the Foundation Phase teacher practising in the Northern Cape.

From the literature it is thus clear that the way a DL programme supports the development of PCK, self-directed skills such as reflection and inquiry, opportunity for guided applied practice, and a professional attitude, plays a critical role in the development of applied competence in Foundation Phase teacher education. In addition the way a DL programme accommodates aspects related to teacher profiles and the context in which teachers implement knowledge plays a determining role in the way teachers are able to implement knowledge in practice in a sustainable way. As the outcomes of teacher education programmes have to match criteria set by policy, it is important to identify DoE policy on criteria for teaching competence.

1.5.2 South African Government policy on applied competence in teacher education

Policies on DL teacher education programmes in South Africa is mostly assimilated in general policies for teacher education; policy documents aimed at general teacher education programmes were therefore explored for this study. The Norms and Standards for Educators (South African Department of Education, 2000, p. 10) defines quality learning as “applied competence which is the overarching term for three ‘inter-connected’ kinds of competence namely ***practical*****,** ***foundational, and reflexive competence***.” These competences are addressed in more detail in Chapter two (§2.3.1).

The policy on Minimum Requirements for Teacher Education Qualifications (MRTEQ) (South African Department of Higher Education and Training, 2011, pp. 10, 11) which replaced The Norms and Standards, refers to the types of learning associated with

the acquisition, integration, and application of knowledge for teaching purposes. According to this policy, all learning – including disciplinary, pedagogical, practical and fundamental learning – should involve learning *in context*, and postulates that situational learning refers specifically to learning *about context*. The MRTQ requires of HEIs to prepare competent teachers who are able to make informed choices in the moment of practice and therefore places emphasis on knowledge, reflection, connection, synthesis, and research. It is thus apparent that South African policies on teacher education programmes include the elements of applied competence as identified in the literature. Where DL is used for the professional development of teachers, programmes need to find ways to support elements of applied competence despite the distance between lecturers (teacher-educators) and teachers (students).

1.5.3 Rationale for DL for Foundation Phase teacher education in South Africa

The terms ‘distance education’ and ‘distance learning’ are used interchangeably in the literature. According to Moore, Dickson-Deane and Galyen (2011, p. 134) providing a detailed description of the instructional characteristics of a programme is therefore essential for illustrating the important components of the learning environment, more so than the term used. The instructional characteristics of the programme that is evaluated and described in §1.4, is therefore explicated in detail in Chapter 4 (§4.2).

According to Creed (2001, p. 8) the term ‘distance education’ is generally used to cover a wide range of projects and programmes using various technologies and linking work done at a distance with opportunities for face-to-face study and practical work in the classroom. However, ‘distance education’ can formally be defined as an educational process in which a significant proportion of the teaching is conducted by someone removed from the learner in space and/or time. Although education includes both teaching and learning, this study gives preference to the term ‘distance learning’ as the focus is on learning by teachers with specific emphasis on the way learning leads to applied competence. Kanuka and Conrad (2003, p. 386) view ‘open distance learning’ (ODL) as a more flexible learner-centred approach to DL where students may choose when, where, how, and at what pace they want to learn.

Although the programme evaluated through this study adheres to the criteria of ODL, investigating the 'openness' of the programme is not the focus of the research aim and term 'distance learning' will be used when referring to the mode of delivery.

It is important to also spell out the divide between the use of DL in ICs and NICs. Keegan (2002, p. 6) describes the evolution of education at a distance as a continuum from d-learning (distance learning) to e-learning (electronic learning) to m-learning (mobile learning). Although the use of technologies such as the internet and other forms of electronic devices for DL may increase the accessibility of education opportunity for some, it may also exclude the persons who may be most in need of these learning opportunities. Moore et al. (2011, p. 129) accentuate that "the design of different types of learning environments depend on the learning objective, target audience, access (physical, virtual and/or both), and type of content." DL programmes implemented in a NIC should thus ensure that design features accommodate the learning needs of a diverse population.

The 1995 Education White Paper on Education and Training (South African Department of Education, 1995) required that open distance learning be implemented to combine the principles of learner centeredness, lifelong learning, and flexibility of learning provision, and to remove barriers to access learning. Although this model was also implemented to give recognition to the prior learning experiences of thousands of practising under - or unqualified teachers, the government required that rigorous quality assurance over the design of learning materials and support systems be maintained. The South African government also suggests that DL be implemented to provide teachers in rural areas access to professional development programmes (South African Department of Basic Education, 2011a, p. 109).

Although DL is viewed as a cost-effective and accessible method to supply in the shortage of qualified teachers in South Africa (Welch, 2008, p. 325), various authors dispute the efficacy of DL programmes in general in terms of supporting applied competence (Binns & Wrightson, 2006, p. 8; Creed, 2001, p. 15; Dickson, Fleet, & Watt, 2000, p. 70; Ojala et al., 2004; Upko, 2006, p. 260). The situation is further aggravated where programme design, content, and delivery do not accommodate teacher profiles (Biggs, 1987a, p. 10) and the teaching contexts (Vincini, 2003) of the teachers enrolled in the DL programme. The *Policy Advice Report to the Minister of*

Education on Aspects *of Distance Education* (Council on Higher Education, 2004, p. 22), further implies that many HEIs offering DL programmes do not adhere to the set criteria for quality distance education. However, the South African government reiterates the belief that quality DL could contribute to the need for transformation of higher education (South African Department of Basic Education, 2011a, p. 24). Challenges posed by the distance between the teacher and the teacher-educator and ways to address these challenges in a DL programme in order to warrant applied competence of teachers as programme outcome, should therefore be explored.

1.5.4 Implementation of distance learning for the professional development of Foundation Phase teachers

Perraton et al. (2002, p. 14) refer to a longitudinal study on the outcomes of nine DL programmes for teacher education as implemented in less industrialised countries. Six of these programmes are aimed at the professional development of primary school teachers. Although most of the programmes produced high completion rates, they had “no”, “weak” or only “some” impact on classroom practice. The study by Perraton et al. emphasises the need for new initiatives in DL programmes for teacher education to support improved classroom practice and a consequent improved standard of Foundation Phase education in South Africa.

National educational requirements concur with the relevant literature regarding the critical role of guided practice-based learning in bringing learning of PCK into the context of applied competence, and ensuring practical teaching competencies as programme outcome (Lobman et al., 2004; Modiba, 1997; Rumajogee, Jeeroburkhan, Mohadeb, & Mooneesamy, 2003). The literature confirms the need for innovative design features to support the applied competence of teachers enrolled in DL programmes in developing countries (Aldridge et al., 2009, p. 165; Butcher, Latchem, Mawoyo, & Levey, 2011, p. 157; Hülsmann, 2004; Welch, 2008, pp. 330-333). Chapter three (§3.4) provides a detailed report on findings from the literature on DL for the development of applied competence of teachers.

Creed (2001, p. 10) stresses the critical function of applied competence in a DL programme for teachers: “Teacher education is the product of iterations between

theory, practice and research; it is for developing a teacher's capacity for self-reflection and professional decision-making." The practice-based nature of Foundation Phase teaching has huge implications for DL teacher education programmes as these programmes generally tend to focus more on theoretical content to be summatively assessed (Creed, 2001, p. 29; Kangai & Bukaliya, 2011, p. 128; Siaciwena & Lubinda, 2008). Facilitating the acquisition, integration, application, and assessment of experience learning by studying teachers in DL programmes in a country where teachers have limited access to ICT, poses unique problems (Creed, 2001, p. 30).

Welch and Gultig (2002) refer to applied competence as a critical outcome of quality teacher education programmes but acknowledge the challenges of implementing school-based learning in a DL programme in the South African context:

> In programmes with thousands of enrolments across the country in which lecturers meet the teachers for a mere one or two days a year and never visit their teachers' schools, a school focus is unlikely. And in programmes with only summative assessment, and no provision for on-going developmental assessment, it is unlikely that teachers will develop applied competence. (pp. 21 and 22)

As this study focuses on applied competence as outcome of a DL programme, literature on design features aimed to support applied competence in a DL programme was also explored.

1.5.4.1 Design features to support applied competence in a DL programme

The existing literature on design features employed as pedagogical strategies in DL programmes to support applied competence reveal some important findings which are addressed in more detail in Chapter three (§3.4.4). However, the limited literature available on programme features designed specifically to support applied competence as outcomes of DL programmes for the professional development of Foundation Phase teachers in South Africa indicated the need for extensive research in this field. DL programmes in industrialised countries which prepare teachers to educate young learners incorporate measures to develop and assess practice-based teaching competencies as programme outcomes. A programme evaluation conducted in Norway found no difference in the performance of ECD students

enrolled for a fulltime course, and the performance of practising teachers enrolled in a parallel DL programme. This DL model includes a 20 week practical teaching period spread over four years in which teachers are assessed by qualified and experienced teachers who act as mentors (Lea, 2000, p. 28). Although this model is progressively being implemented in South Africa, it is often not possible to identify adequate and sufficiently qualified and competent teachers to act as mentors, especially in dysfunctional schools. Pretorius (2014, p. 60) blames the poor impact of professional development programmes on the lack of an effective mentoring system in dysfunctional schools. He grounds his statement in research indicating that professional development programmes will only be effective when experienced teachers provide the necessary support to developing teachers in the school context. The traditional ACE programme (§1.2) which was the focus of this study does not currently implement a mentor system but teachers were motivated to identify an experienced colleague to act as their mentor.

A study conducted in Australia (Green et al., 2010) implemented design-based research to explore and develop an online programme for early childhood teachers. Although the focus of the study was the development of pedagogy in an online programme, the reconceptualising of the programme was underpinned by the socio-cultural environments of the target teachers as well as aspects such as social, self-directed, reflective, and experiential learning. Green et al. (2010, pp. 261, 270) believe that a greater sensitivity to the teaching context within which teachers live and work will contribute to improved professional development of early childhood teachers in online teacher education. Although the contexts of teachers enrolled for an online programme in Australia and that of South African teachers enrolled for a DL programme may differ considerably, these findings may be of equal significance in the context of a NIC.

DL programmes in less industrialised countries understandably rely less on design features involving technology when seeking ways to support applied competence. The implementation of a learning portfolio in a programme for primary teachers in Brazil (The Proformaçao), endeavours to offer practising teachers the opportunity for professional development through a DL programme (Bof, 2004; Joia, 2002). This programme incorporates tutors, reflective journals, and audio-visual resources to

support the development of applied competence of 27,000 unqualified teachers in different Brazilian states. Although the findings by Bof showed that 99% of the teachers felt that their applied competence improved as a result of the programme, both Joia (2002, p. 84) and Bof (2004) refer to the challenges posed by poor socio-economic factors to the development and assessment of applied competencies of teachers through a DL programme. Although Siaciwena (2007) stresses the important link between theory and practice to support the development of professional teaching competencies by teachers through DL programmes, he also admits that the implementation and assessment of school-based learning pose challenges to a DL programme implemented in Zambia.

Findings of studies by Bof (2004) (Brazil) and Green et al., (2010) (Australia) conducted in two countries at the opposite ends of the developmental spectrum, emphasise that it is imperative to ensure that a DL programme for the professional development of teachers is tailor-made to not only suit the profile of the specific teacher population, but also the specific educational needs of the country. Various authors advocate the exploration of ways to promote applied competence as outcome of DL programmes for teacher education (Creed, 2001, p. 48; Green et al.,2010, p. 270; Grossman & McDonald, 2008, p. 198; Siaciwena, 2007; Welch, 2008, p. 335). While Grossman and McDonald (2008, p. 198) agree that aspects in the domain of teacher education such as teacher knowledge of specific subject matter, of learners and learning, of ways to teach specific content, as well as teacher beliefs are at the core of teaching, they emphasise that effective teaching does not only require knowledge but craft and skill and advocate the exploration of pedagogies of enactment to be added to the existing repertoire of pedagogies for investigation. These studies reinforce the premise that effective DL programmes for the professional development of teachers in South Africa should implement design features that will not only embrace critical elements of applied competence as identified in international studies, but will also accommodate the specific profile and teaching contexts of the teachers.

The following research question emerges from the problem statement and related literature:

How does a practical component, included as part of a revised DL professional development programme of the NWU implemented in the Northern Cape, support Foundation Phase teachers' applied competence?

Finding answers to the following related questions directed the investigation:

- What does the body of scholarship indicate with regards to elements contributing to applied competence in effective teacher professional development programmes?
- What does the body of scholarship indicate with respect to programme design features to support applied competence in DL programmes for teacher professional development?
- What are the theoretical and conceptual implications of the profile and teaching context of Northern Cape Foundation Phase teacher enrolled in the DL professional development programme?
- What are the expectations of Foundation Phase teachers regarding the way in which the practical component of the DL professional development programme will support applied competence in their contexts?
- How do Foundation Phase teachers experience the practical component of the DL professional development programme in terms of supporting the development of their applied competence?
- To what extent do the learning portfolios of Foundation Phase teachers enrolled in a DL professional development programme interrogate evidence of applied competence?
- How do the findings from the literature and the empirical study explicate critical elements to be accommodated in a model for a DL programme aiming to support Foundation Phase teachers' applied competence?

1.6 RESEARCH AIM AND OBJECTIVES

Evaluation is an applied inquiry process for collecting and synthesising evidence that culminates in conclusions about the state of affairs, value, merit, worth,

> significance or quality of a programme. [ ] It is this value feature that distinguishes evaluation from other types of inquiry…[ ]. (Fournier, 2005 as cited by Patton, 2008, p. 4)

As part of a programme development team of the NWU, I devised and included a practical component which was added to a DL programme for the professional development of Foundation Phase teachers to adhere to the NCDoE tender requirements, address the concerns expressed in the literature, and restitute deficiencies indicated by previous research findings (Kruger, 2010). In this implementation evaluation this practical component added to the Foundation Phase ACE programme, and which includes design features such as a learning portfolio and audio-visual resources, is viewed as the evaluand or unit of analysis. The study focussed on formative and summative evaluation conducted during and after the implementation of the evaluand, primarily for the purpose of programme improvement (Mertens, 2009, p. 71; Patton, 2008, p. 116).

According to Patton (2008, p. 319) several alternative purposes of implementation evaluation can be considered such as accountability, programme improvement, developmental evaluation, and implementation evaluation for lessons learnt. This study does not aim to summatively judge the merit of the programme; the focus is rather on programme improvement and lessons learnt from the evaluation regarding the way a practical component supports the applied competence of Foundation Phase teachers.

1.6.1 Research Aim

This study aimed to evaluate the way a practical component included as part of a revised DL professional development programme of the NWU implemented in the Northern Cape, supported the development of Foundation Phase teachers' applied competence. The study further aimed to put forward a model for the development of applied practice based on the findings of the study (§6.4.2). According to Patton (2008, pp. 297, 300) the aim of an evaluation study determines the focus of the evaluation. However different foci can and are often used together in the same evaluation. Bickman (1985, as cited by Patton, 2008, p. 326) argued that component

evaluation has the potential for greater generalisability and more cross-programme comparisons than whole programme evaluations.

While relevant PCK, self-directedness, opportunity for guided applied practice, and teacher attitude were identified as critical core elements in applied competence, this study specifically aimed to evaluate the way the practical component of a DL programme supported the development of applied teaching competence by accommodating these core elements. The aim was therefore not to judge or evaluate all programme outcomes of this DL programme of the North-West University as implemented in the Northern Cape but rather to determine the value of the design features such as a learning portfolio and audio-visual material included as part of the practical component of the revised DL programme in supporting applied competence of teachers within their specific teaching contexts.

As programme designers need to align programme design with specific learning needs of teachers, the study further endeavoured to determine the Foundation Phase teacher profile and teaching context to better understand teacher expectations and experiences regarding the practical component of the DL programme offered in South Africa. Patton (2008, p. 199) highlights the fact that the profiles of people involved in a programme as well as their unique situations play a critical role in the evaluation of their situated learning. It was therefore anticipated that the findings based on Foundation Phase teacher expectations and experiences in light of the aforementioned would give a better understanding of the way such features support applied competence.

1.6.2 Research Objectives

This study has the following objectives:

- To explore the body of scholarship with regards to elements contributing to applied competence in effective teacher professional development programmes
- To explore the body of scholarship with respect to programme design features that support applied competence in DL programmes for teacher professional development

- To identify and understand the theoretical and conceptual implications of the profiles and teaching contexts of the Northern Cape Foundation Phase teachers enrolled in the DL professional development programme
- To empirically investigate the expectations of Foundation Phase teachers regarding the way the practical component of the DL professional development programme will support their applied competence in their context
- To empirically investigate the way Foundation Phase teachers experience the practical component of the DL professional development programme to support their applied competence
- To empirically investigate to what extent the learning portfolios of Foundation Phase teachers enrolled for the DL professional development programme interrogate the evidence of applied competence
- To put forward a model for a DL programme aiming to support Foundation Phase teachers' applied competence based on the findings from the literature and the empirical study

1.7 RESEARCH DESIGN AND METHODS

The aim of the study concurs with the definition of McKernan concerning programme evaluation:

> A formal collection of evidence presented as an interpretive position of a unique case to gather data about the impact and effectiveness of curriculum innovation in order to inform future learning and teaching developments. (McKernan, 1998 as quoted by Jones, 2008, p. 2)

According to Thompson and Irele (2007, p. 421), research which focuses on programme evaluation aims at a deep understanding of particular aspects of a phenomenon through rigorous examination of relevant variables. In this study the phenomenon is defined *as the way the practical component of the DL programme supports Foundation Phase teachers' applied competence* while the variables include the *teachers' profile* and *teaching context, their professional learning needs*, their

expectations for and their *experiences of* the programme as well as *the way the learning portfolio provides opportunity to demonstrate and evaluate applied competence as programme outcome*. The literature confirms a relationship between a teacher's experiences of an education programme and the eventual impact of the programme on the teacher's classroom practice (Beaudin & Quick, 1995, p. 18; Dewey,1933 as cited by Iredale, 2012; Shulman and Shulman, 2004, p. 6). According to Shulman and Shulman (2004, p. 6) teacher-educators must "create environments that support, sustain, and 'tune' the visions, understandings, performances, motivations, and reflections of all its members." Data were thus gathered from the teachers enrolled for the DL programme under investigation.

1.7.1 Research paradigm and theoretical framework

The investigation has been approached from a *constructivist* paradigm; an approach that falls under an interpretive philosophical orientation (Guba & Lincoln, 1994, pp. 109-111; 2005, p. 24) (Fig. 4.2; §4.4.1; §5.1 and §6.1). In his responsive model of programme evaluation, Stake, (2006, as cited by Mertens, 2010, p. 59), compares an observed value with a standard defined by the expectations and criteria for a programme. According to this model, the applied competence actually held by the programme is compared with the elements of applied competence identified in the literature by collecting data from appropriately selected people. According to the sociological theory as explicated by Denzin and Lincoln (2005, p. 22) and Guba and Lincoln (1994, p. 110 and 111) this study follows a relativist *ontology* (multiple constructed realities), *interpretive epistemology* and *ideographic methodologies*.

And interpretivist epistemology allows for interpretation of the participants' experiences of the programme in their teaching context. This stance is grounded in the putative conviction that if teachers are to be actively engaged in their own learning, their voices must be heard (Cook-Sather, 2002, p. 10). Such an approach was expected to render information necessary to address the specific learning needs of the Foundation Phase teacher through DL programme design in the South African context. If programmes are to support the applied competence of teachers it is important to accommodate the teacher profile as well as the teaching context in

which the teachers are required to apply these competencies (M. G. Moore, 2007a, p. 134).

According to the view of Burrel and Morgan (1979, p. 22) (Fig, 4.2) on the topographies of social studies, the study tends towards the sociology of regulation and focuses on finding out *how does* the practical component of the DL programme support the development of applied competence of practicing Foundation Phase teachers. It was anticipated that the findings of this study may show new understandings of *how should* applied competence be supported in a DL programme if teachers are to be equipped to apply new knowledge and skills in their own contexts (Burrell & Morgan, 1979, p. 22). Chapter 4 (§4.4.1) includes a more in depth explanation of the research paradigm.

1.7.2 The literature study

The literature review investigated existing research on the development of applied competence of Foundation Phase teachers. It therefore firstly set out to define the role of applied competence in the professional development of teachers. Policies and the design of international teacher education models that are universally recognised to effectively support applied competence were then explored to build a conceptual framework of critical elements to be included in all teacher education programmes which aim to support applied competence.

As the programme under investigation employed a learning portfolio and audio-visual resources aiming to support applied competence of Foundation Phase teachers, research on the way such design features were found to have supported applied competence were explored and analysed to serve as grounding for the implementation evaluation.

The key words *applied competence, teacher education, distance learning*, *professional teacher development*; *elementary teacher education, pedagogical content knowledge, self-directedness, reflection, inquiry, professional teacher attitude* and *applied practice* were used to explore data bases such as ERIC, Academic Search Premier, and Google Scholar.

Themes investigated included:

- Professional development of Foundation Phase teachers
    - National and international policies on teacher professional development
    - Principles for teacher professional development identified in successful international teacher education programmes
- Distance learning for professional development of Foundation Phase teachers
    - Defining elements of applied competence
    - Supporting sustained applied competence in teacher education
    - Rationale for using DL for Foundation Phase teacher education
    - Implications of DL for applied competence as programme outcome
    - Strategies to support and assess applied competence in a DL programme for the professional development of Foundation Phase teachers

1.7.3 Research approach

The study is grounded in the *qualitative research approach* which is concerned with the evaluation of programme design towards greater effectiveness within a specific context (Reason, 1994, p. 49) (§4.4.2). According to Mouton (2001, pp. 161, 162) evaluation research is a preferred design when working with developing communities where participation by the participants in the evaluation is desirable. Dede et al. (2009, p. 14) affirm that the research field needs to have a strong focused interest in the *how* and *why* of effective teacher education programmes. Whereas these authors stress that assumptions about participants' needs, beliefs, and motivations without input from the teachers themselves may not accurately reflect the actions and intentions of the group, I gathered data from the participants based on their profiles and teaching context, their professional developmental needs, expectations for the way the programme would support their applied competence, as well as their experiences of the way the programme supported their applied competence. Although quantitative methods are also used to gather descriptive data in support of qualitative data, the study is grounded in a qualitative research methodology where

the concern is with the evaluation of DL programme design with regards to applied competence by teachers as programme outcome. Descriptive statistics is defined as "the term given to the analysis of data that helps describe, show or summarize data in a meaningful way such that, for example, patterns might emerge from the data. Descriptive statistics do not, however, allow us to make conclusions beyond the data we have analysed or reach conclusions regarding any hypotheses we might have made. They are simply a way to describe our data." (Laerd Statistics, 2015).

1.7.3.1 Study population and sampling

Qualitative sampling is the process of selecting a small number of individuals from a large population for a study in such a way that the individuals chosen will be good key informants who will contribute to the researcher's understanding of the phenomenon under investigation (Gay, Mills, & Airasian, 2011, p. 142). Patton (2002, in Patton, 2008, p. 458) explains that qualitative inquiry in evaluation studies involves small purposeful samples of information-rich cases. Although this implementation evaluation does not aim to make generalisations regarding all DL programmes, Patton (2008, pp. 458, 459) asserts that through balancing depth and breadth as well as realism and control, an evaluation study permits reasonable extrapolation. Patton describes extrapolation as modest speculations on the likely applicability of findings to other situations under similar but not identical conditions. Through a logical, thoughtful and problem-orientated approach to the implementation evaluation and data analysis, the findings thus served as grounding for the improvement of DL programme design for Foundation Phase teachers in South Africa.

Information collected through multiple methods and choosing samples according to different purposes contributed to an understanding of the value of the practical component of the DL programme with specific focus on the way the component supported the applied competence of teachers in their specific context. According to Patton evaluation designs that combine probabilistic and purposeful sampling methods have the advantage of extrapolations supported by quantitative and qualitative data. In this study larger samples served to provide data to address questions of incidence regarding the larger group of teachers enrolled for the revised DL programme, while collecting information from the smaller samples added depth

and detail to make the interpretations more meaningful and grounded (Patton, 2008, p. 459).

The study population comprised a group of 260 practising Foundation Phase teachers who were enrolled by the NCDoE as part of a bursary project for the revised Foundation Phase ACE programme. This programme included a practical component that is the evaluand of the implementation evaluation study (§1.4; §4.2). The first of three intakes/cohorts for the revised Foundation Phase ACE programme containing 50 practising Foundation Phase teachers employed at schools in two Northern Cape districts namely Frances Baard (Kimberley) and Pixley Ka Seme (De Aar) was the target group of the implementation evaluation. These teachers attended contact sessions at two venues; 26 teachers at the NIHE Campus in Kimberley (Frances Baard district), and 24 teachers at the Northern Cape Rural FET College in De Aar (Pixley Ka Seme district). The sampling methods, whereby participants were identified from the target group, varied for the different data collecting methods which are set out in Table 1.1. The samples and the purpose of each sample are explained in more detail in Chapter four (§4.5).

Table 1.1: Purpose for data collecting methods and samples for each implementation stage

STAGE	SAMPLE AND SETTING	DATA COLLECTING AND ANALYSIS METHODS	PURPOSE
Pre-implementation (at the onset of the 1st year – traditional ACE Foundation Phase programme)	Purposive sampling: All teachers attending contact centres at the two centres: • NIHE Campus in Kimberley (Frances Baard district) (n=22) • Northern Cape Rural FET College in De Aar (Pixley Ka Seme district) (n=17)	Quantitative: Semi-structured questionnaire (Statistical analysis) Qualitative: Open-ended questions of the semi-structured questionnaire (ATLASti™) (Content analysis)	• Biographical information; • Teacher profile and teaching context; • Professional development needs of the teacher; • Expectations for the way the programme will support their applied competence; • Teacher attitude (motivation, commitment).
Mid-term implementation (at the onset of the 2nd year – practical component)	Purposive sampling: All teachers attending the 1st session of the 2nd year at the NIHE Campus in Kimberley (Frances Baard district) (n=15)	Qualitative: Focus-group interview (Content analysis - ATLASti™)	• Teacher experiences of the 1st year (theory); • Expectations for the 2nd year (practical component); • Teacher attitude.

STAGE	SAMPLE AND SETTING	DATA COLLECTING AND ANALYSIS METHODS	PURPOSE
		Qualitative: Written expectations for 2nd year (practical component) (Content analysis - ATLASti™)	• Teacher experiences of the 1st year (theory); • Expectations for the 2nd year (practical component); • Teacher attitude.
Post-implementation (after completion of the practical component)	Purposive sampling: All teachers attending contact centres at the two centres: • NIHE Campus in Kimberley (Frances Baard district) (n=20) • Northern Cape Rural FET College in De Aar (Pixley Ka Seme district) (n=16)	Quantitative: Semi-structured questionnaire: (statistical analysis) Qualitative: Open-ended questions of the semi-structured questionnaire (Content analysis - ATLASti™)	• Demographic information; • Teacher profile and teaching context; • Descriptive data on teachers' experiences of the way the practical component supported elements of applied competence; • Teacher attitude.
	Convenience sampling: Four teachers identified by the NCDoE for school visits (n=4)	Individual interviews (Content analysis - ATLASti™)	View of teachers on the way the programme supported elements of applied competence within their specific context.
	Random sampling: 10 teacher learning portfolios randomly selected from the whole group (n=10)	Learning portfolios (Document analysis)	Investigating to what extent the learning portfolios interrogate the evidence of the elements of applied competence

1.7.3.2 Data collecting methods, instruments and procedure

The data were collected on ***two levels***. The ***first leve***l entails data collected as part of the programme monitoring process used for reporting to the NCDoE, and included pre- and post- implementation semi-structured questionnaires, a focus-group interview, and written reflections by the participants on the first year of the programme as well as their expectations of the second practice-based year. The ***second level*** involved individual interviews with teachers to permit a deeper dimension in the evaluation of the programme with specific focus on experiences of the teachers regarding the way the programme supported their applied competence in their context. Analysis of the learning portfolio further aimed to determine in which way this design feature interrogates the elements of applied competence. The data collected on both levels were perused to find an answer to the research question and will hereafter be discussed under the collective set of data collecting methods.

Interactive and non-interactive methods were implemented during the two year programme in search for an answer to the research question. The data were collected during three ***stages*** (Table 1.1), namely at the onset of the theoretically-based first year (pre-implementation), at the onset of the second year that included the practical component as the evaluand (mid-term), and after the teachers completed the practical component that formed part of the second year of the two-year programme (post-implementation).

- **Pre-implementation data collection**

Semi-structured questionnaires implemented prior to the implementation of the practical component served as descriptive data to support the qualitative data. These questionnaires did not only collect demographical data on the target group, but also gathered data on teachers' expectations of the way the programme would support the development of their applied teaching competence as well as their personal professional development needs relating to knowledge, skills, and attitudes. The questionnaires also provided opportunities for open written comments on the various questions asked. All the teachers attending contact centres at the two centres were asked to voluntarily complete the semi-structured questionnaire, and 39 teachers opted to participate:

- NIHE Campus in Kimberley (Frances Baard district) (n=22)
- Northern Cape Rural FET College in De Aar (Pixley Ka Seme district) (n=17)

- **Mid-term data collection**

The whole group of teachers who attended the first contact session of the second year at the NIHE Campus in Kimberley (Frances Baard district) were asked to voluntarily participate in a ***focus-group*** interview (n=15). All students attend session on the same day at the various contact centres country wide, which includes the two centres that formed part of the project. Since the centre in Kimberley (Frances Baard) is more accessible to the researcher, this group was chosen as a convenience sample. The same group were also asked to write down their expectations for the

second year which included the practical component of the programme. The aim of these two data collecting methods was to explore teachers' expectations of the way the second more practice based year would support their applied competence and the teachers' attitudes towards the programme.

- **Post-implementation data collection**

The ***semi-structured questionnaire*** implemented after the implementation of the practical component required that the teachers indicate on a Likert scale the way they experienced the programme to have supported developmental aspects relating to knowledge, skills, and attitudes in Foundation Phase teaching practice. They were also asked to indicate which component of the programme, i.e. either the first more theoretical component (first year) or the second more practical component (second year), contributed most to their applied competence. The questionnaires also provided teachers with opportunities for open written comments on the way they experienced the programme.

As part of the programme monitoring process I conducted follow-up visits and visited four (n=4) teachers identified by the NCDoE, at their schools. During these visits the teachers were asked to voluntarily participate in ***individual semi-structured interviews***. The interview schedule aimed to motivate teachers to voice their experiences of the learning portfolio process as well as the way they experienced the practical component to have contributed to their applied competence (Instruments: Appendix B; Sound files: Appendix E; Transcriptions: Appendix F).

Document analysis served to strengthen the data collected from other data sources. Ten completed learning portfolios of teachers were randomly selected and evaluated by means of a self-designed rubric (Appendix B). The portfolios were perused to establish demonstrated applied competence in the seven sections of the portfolio namely: Classroom management, Teaching and learning, Perceptual development, Language, Mathematics, Life skills, and LSEN. The criteria set out in the rubric rated the eight portfolio components regarding demonstrated evidence of each of the elements of applied competence according to a scale from Advanced (demonstrated outstanding applied competency), to Proficient (Complied with criteria for applied competence), to Functional (Some evidence of applied competence), to Developing

(No/little evidence of applied competence). After the portfolios where analysed by myself, an impartial third party evaluated the same learning portfolios for cross-examination to strengthen the trustworthiness of the data (McMillan & Wergin, 2010, p. 92).

Chapter four includes a detailed description and motivation of the data collecting methods, procedure, instruments, and purposes of each data source. Interactive and non-interactive methods employed before and again after implementation of the practical component of the programme are summarised in Table 1.2.

Table 1.2: Data collecting methods and instruments

IMPLEMENTATION STAGE	DATA COLLECTING METHOD	INSTRUMENT
Pre-implementation	Semi-structured questionnaire (non-interactive)	Questionnaires: Likert scale and open written comments
Mid-term implementation	Focus-group interview (interactive)	Focus-group interview questions (recorded and transcribed)
	Written expectations for practice based second year (non-interactive)	Open written expectations (transcribed)
Post-implementation	Semi-structured questionnaires (non-interactive)	Questionnaires: Likert scale and open written comments on questions
	Interviews on learning portfolios (interactive)	Interview schedule (recorded and transcribed)
	Document analysis (non-interactive)	Rubric based on elements of applied competences identified from the literature

1.7.3.3 Data collecting sites

- While qualitative methods were implemented to collect data on the teachers' personal experiences of the practical component of the programme, questionnaires were completed during the first contact session of the programme at the two contact centres in the districts that formed part of this implementation evaluation namely the NIHE Campus in Kimberley (Frances Baard district) the Northern Cape Rural FET College in De Aar (Pixley Ka Seme district).

- The teachers attending the session at NIHE Campus in Kimberley (Frances Baard district) were asked to participate in a mid-term focus-group interview and to write down their reflections on and expectations of the programme. These teachers were also asked to write down their experiences of the first year as well as their expectations for the second practice-based year.
- After obtaining written consent from the participants and school principals, individual semi-structured interviews were conducted at the teachers' schools during school visits.
- Post-implementation semi-structured questionnaires were completed at the exam centres in Kimberley and De Aar after the teachers wrote their final examination paper.
- Learning portfolios were analysed at the NWU Potchefstroom campus by me and the independent evaluator.

1.7.3.4 Data analysis

Content analysis is used for data analysis which is described by Patton (2002, p. 453) as a way to make sense of data by identifying core consistencies and meanings from a volume of qualitative material. This implementation evaluation used multiple data collecting methods that produced various themes and subthemes which were then organised and compared in order to come to a conclusion on the way the data answered the sub-questions and consequently the research question.

ATLASti™, a computer-aided analysis programme, was used for open, axial and selective coding as well as for memo writing to organise the qualitative data for analysis. Constant comparison of the themes related to applied competence as coded in the qualitative data enabled me to identify the strengths of the themes and subthemes through triangulation and negative evidence in the findings (Boeije, 2002, p. 393) (§4.6.3; §5.2; §5.3 and §5.4). Through comparison of the themes and subthemes and through inductive reasoning based on comparisons, the data were thus interpreted regarding the way it answered the research question. A detailed account of the analysis process is given in Chapter four (§4.6).

Data collected through qualitative methods were also constantly compared with descriptive data collected through quantitative methods such as the semi-structured questionnaires as well as the data collected through document analysis. The data gathered through the two semi-structured questionnaires were statistically processed by the North-West University Statistical Consultation Services and used as descriptive statistics during constant comparative analysis of the qualitative data. The ten learning portfolios which were randomly selected were analysed through content analysis which is a quantitative analysis of what is in a document (Robson, 2002, p. 349). Comparing the findings resultant from the qualitative data sources as well as findings derived through the quantitative data served as methodological triangulation to come to a better understanding of the way teachers were able to develop and demonstrate elements of applied competence through the practical programme component in their teaching context (Neuman, 2006, p. 150).

1.7.3.5 Researcher's role

The role of a researcher in an interpretative qualitative study is to piece together a set of representations that is fitted to the specifics of a complex situation (Denzin & Lincoln, 2005, p. 4). Stake (2005, p. 449) describes the role of a researcher in a qualitative study as being ever-reflective, committed to pondering impressions, and deliberating on recollections and records. My role as researcher can be described as dualistic; it ranged from asking questions that evoke deeper critical and reflective thinking on the part of the participants, to participating beside them in a shared role in interviews during the focus-group interview and individual interviews.

Apart from gathering data through multiple methods, I was also responsible for the analysis and synthesis of data from the various sources. As programme designer aiming to improve current programme design I took a critical stance during data analysis. Such a stance is described as important in qualitative studies as researchers persistently search for the truth, with a willingness to challenge, recreate and reimagine (Curzon-Hobson, 2010, p. 202). Determining the true value of the programme design through honest reporting was deemed important to ensure the study contributes to improve DL for Foundation Phase teachers in the South African

context. Inductive reasoning was therefore directed by an honest search for the truth as verified by the various data sources.

1.8 ETHICAL ASPECTS OF THE RESEARCH

Resnik (2010) defines ethics as norms for conduct that distinguishes between acceptable and unacceptable behaviour. Ethical principles were applied according to the contextual-consequential framework suggested by Christians (1995, cited by Denzin & Lincoln, 2005, p. 40) which underscores mutual respect, non-coercion, non-manipulation, and the support of democratic values. The North-West University Ethics Committee furnished ethical clearance for the research prior to the investigation (ethics number: 00041-13-A2). As the study involved a programme offered by the NWU, written consent for the investigation was attained from the then acting director of the School of Continuing Teacher Education[3] (NWU) (Appendix A).

Permission to conduct the research, to use the selected venues for the inquiry, and to use the data generated by the research, was attained from the NCDoE as founder and financier of the bursary project (Appendix A). The purpose and method of the inquiry was explained to NCDoE departmental officials, the school principals where the teachers were employed, and to all participants. All the participants and stakeholders such as the NCDoE were assured of access to the research findings.

Each participant in the interviews was asked to sign a letter of informed consent, thereby enabling the researcher to proceed with the research. In this letter, all the willing participants were assured that their participation was voluntary, that they had the right to withdraw at any time, that the information they offered would be treated with utmost confidentiality at all times, and that participation would not influence their academic results (Appendix A). A more detailed account of the way I applied ethical principles in the study is provided Chapter 4 (§4.9).

[3] The School of Continuing Teacher Education of the NWU was restructured in 2013 and is now referred to as the Unit for Open Distance Learning

1.9 TRUSTWORTHINESS

The aim of this study was to evaluate the way the practical component added to a revised DL programme supported Foundation Phase teachers' applied competence in their specific context, and not to generalise (§1.6; §4.3 and §4.8). However, the findings based on reality and the inclusion of a number of data sources allows suggestions for practice-based design features for DL programmes. Qualitative researchers refer to the trustworthiness of findings as "credibility", "transferability/applicability", "dependability" and "conformability" (Gay et al., 2011, p. 392; Nieuwenhuis, 2007, p. 80) (§4.8). The *credibility* of the inquiry was enhanced by using thick description and comparing the data gathered from various data sources and through different methods. Patton (2008, p. 136) postulates that: "The greater the number of supporting sources for a 'lesson learned', the more rigorous the supporting evidence, and the greater the triangulation of supporting sources, the more confidence one has in the significance and meaningfulness of a lesson learned."

Although qualitative studies can seldom be generalised to larger study populations, component evaluation has the potential for greater *transferability* than whole programme evaluations (Bickman, 1985, as cited by Patton, 2008, p. 326) (§1.6.1).

Dependability, which indicates the consistency of data collected, was enhanced by recording and accurately transcribing all interviews. Measure triangulation, whereby multiple measures were taken for the same phenomena, as well as method triangulation, where data gathered through both qualitative and quantitative methods are compared, served to crystallize the findings (Gorard & Taylor, 2011, p. 43; Neuman, 2006, p. 150). Data were also continuously compared with the literature for further consolidation. Whereas triangulation cannot be used as a form of mutual confirmation or validation of more than one method, the different methods were directed at different perspectives of applied competence in the DL programme under investigation with the anticipation that the combination of perspectives would render a new view or simply a more well-rounded theory.

Conformability refers to the neutrality or objectivity of the data (Poggenpoel & Myburgh, 2004, p. 421). I subjected the findings to a peer review by colleagues in the

field to determine whether the interpretations and conclusions were consistent with the available data. The analysis of learning portfolios were also verified against the analysis of the same portfolios by an independent specialist in the field and the different sets of findings were compared.

Aspects that could hold a possible threat to trustworthiness include differences in backgrounds of the participants as well as differences between the background of the researcher and the participants, mother tongue, professional levels of the teachers, and teacher language deficiencies. Measures taken to minimise the way these variables hold a threat to the trustworthiness of the study are discussed in Chapter 4 (§4.8.5).

1.10 CONTRIBUTION OF THE STUDY

Limited literature is available on applied competence as outcome of a DL programme for Foundation Phase teachers in the context of a NIC. This study therefore embraced a broad spectrum of features of applied competence, serving to build a knowledge framework for more focussed forthcoming studies on DL programmes.

This study contributed by providing a better understanding of the way the design features of a practical component of a DL programme supports the applied competence of Foundation Phase teachers in the South African context. Since the study set out to hear the voice of teachers with regards to the way a practical component included in a DL programme supported their applied competence, building theory based on findings will accommodate the specific profile and professional learning needs, as well as the teaching context of teachers practicing in the Northern Cape. A model based on the findings was constructed for consideration in future DL programmes for the professional development of teachers (§6.4.2). The study will thus be meaningful for curriculum development, for the improvement of pedagogy, and for assessment strategies that support applied competence of Foundation Phase teachers enrolled for a DL programme in a less industrialised or NIC such as South Africa.

A critical reflection on the research design and methodology further indicates possible strengths and weaknesses of such an approach to implementation evaluation in the South African context.

1.11 LIMITATIONS OF THE STUDY

The findings of this study may not be generalisable to all populations as the data were collected from a small sample of teachers situated in one province of the country, namely the Northern Cape. However, component evaluation has the potential for greater generalisability and more cross-programme comparisons than whole programme evaluations (Bickman, 1985, as cited by Patton, 2008, p. 326) (§1.6.1).

It cannot be assumed that the reported positive programme outcomes were necessarily due to the practical programme component since various determinants such as prior learning, current teaching context, and personal circumstances may have played a role in the teachers' expectations as well as their experiences of the way the programme supported their applied competence.

In line with the view of Mertens (2010, p. 83), compressed time and a limited budget constrained sensitivity to the complexity of multicultural dimensions. As various cultural groups were represented by the target group this study did not explore the different perspectives of different cultural groups but rather explored the general perspectives amongst the group of teachers practising in the Northern Cape.

Delineation of the study

Geographical issues restricted representative sampling. The teachers enrolled in the programme live and work in rural areas and are dispersed over a vast area of the Northern Cape which limited site visits and evaluations of applied competence of a more representative sample of teachers.

The programme content of the traditional accredited Foundation Phase ACE programme as implemented in the first year of the programme does not form part of the evaluation study. The evaluand is the practical component added to a revised one-year Foundation Phase ACE programme as implemented during an additional

second year of the programme. The study thus focuses specifically on the extent the design features of the practical component supported the applied competence of the teachers. The content and delivery of the first year and the mastering of this content by teachers may have had an effect on the way the participants experienced the support of the practical component in their applied competence. It was however not the aim of the study to evaluate all aspects of the programme.

1.12 OUTLINE OF CHAPTERS

Report on the research was structured according to the following chapters:

Chapter 1: Introduction, problem statement and motivation for the study

This chapter serves as introduction to the study and grounds the research problem and motivation for the study in a literature review. The research paradigm, aim and objectives, research questions and methodology set out in Chapter 1 are further explicated in Chapter 4.

Chapter 2: Professional development of Foundation Phase teachers

This chapter explores prior research and related literature to identify critical elements of effective professional development programmes for Foundation Phase teachers. Findings from international evaluations of teacher education models serve as grounding for the evaluation of the NWU Foundation Phase ACE programme for teacher professional development delivered via ODL.

Chapter 3: Applied competence in the professional development of Foundation Phase teachers in a distance learning programme

This chapter explores and defines the elements of effective teacher education programmes as identified in Chapter two, namely PCK, self-directed learning skills including reflective and inquiry-based learning, the development of a professional attitude, and guided applied practice for Foundation Phase teachers. The chapter also reports on ways to include identified elements in a DL programme for Foundation Phase teachers practicing in a NIC. The chapter concludes with a

conceptual framework for supporting applied competence in a DL programme for Foundation Phase teachers.

Chapter 4: Research design and methods

This chapter provides a detailed outline and discussion of the research problem, aim and objectives, and rationale of the study as background to the empirical investigation. The chapter also discusses the research design, and the methods for data collection and analysis that were implemented to gather information in order to find answers to the research question.

Chapter 5: Analysis of data and findings

In this chapter a detailed account of the data analysis is provided as well as the way findings revealed answered the research questions. The chapter concludes with a rationalisation of meaningful triangulation and a crystallisation of the findings through the implementation of different data sources and methodologies.

Chapter 6: Conclusions and recommendations

The final chapter links the findings with the research aim and objectives by explaining how the data provided answers to the research problem. The chapter concludes with reflections on the contribution of the study to the knowledge field of effective DL programme design. Based on the findings, a DL model is also proposed for teacher professional development programmes aiming to support the applied competence of Foundation Phase teachers.

CHAPTER 2

PROFESSIONAL DEVELOPMENT OF FOUNDATION PHASE TEACHERS

2.1 INTRODUCTION

The South African Department of Education (2005b, p. 39) recognises the role of the teacher in improving the standard of education in South African schools: “We tend to think of 'quality' in terms of class-sizes and hardware (buildings, facilities, equipment, etc.) but well-qualified and committed, professional teachers are key agents in the quality of schooling.” Educationists worldwide are raising concerns about teachers’ poor competence levels which are attributed to ineffective teacher education programmes offered by HEIs. The impact of teacher education on teacher learning and ultimately also on classroom practice is being questioned. This chapter reviews related research and literature directed at aspects of teacher education with specific focus on critical elements in effective teacher professional development programmes. Local policies on teacher education as well as research on successful international teacher education models have been also consulted to identify common elements which contribute to effective teacher education and served as grounding for the empirical investigation.

2.2 TEACHER PROFESSIONAL DEVELOPMENT

In the Action Plan to 2014: Towards the Realisation of Schooling 2025, the South African DBE (2011a, p. 23) declares that an improvement in the education standards of South Africa necessitates quality opportunities for teacher professional development: “Many and perhaps most, of South Africa's teachers have not received all the training they need to cope with the responsibilities of teaching. “This document also expresses concerns regarding the quality of teacher education programmes in general. To ensure that the opportunities provided for professional development indeed make a difference to the standard of education in the country, development programmes require continuous evaluation and improvement. Education reforms that do not take the effectiveness of teacher education programmes into account should

be condemned to insufficiency (Gasperini, 2000; Kim and Han, 2002; O'Sullivan, 2008). The president of the South Korean Educational Development Institute, Chong-Jae Lee underscored the importance of teacher professional development as follows: "We do not need to emphasize any stronger that teachers are the core element that influences the quality of education and determines success or failure of education." (Kim and Han, 2002, p. ii). Countries such as South Africa which endeavour to improve the standard of education, should heed such views about teacher professional development, especially since South Korea is internationally recognised as a leader in teacher education (Yates, 2007, p. 2). Since teachers are acknowledged as the school variable that most influences student achievement (OECD, 2005, p. 26), effective pedagogy for teacher professional development has been the focus of many debates.

An in-depth exploration of the literature regarding policies, criteria, and elements of quality professional development programmes forms the background for an investigation into a practical component added to a revised DL programme for Foundation Phase teachers. Defining teacher professional development as well as contextualising this concept in the South African setting, is essential as background to both the literature and empirical study (Chapters four and five).

2.2.1 Defining teacher professional development

Defining this phrase firstly requires defining *teacher* and secondly *professional development*. Both these terms need to be contextualised in the South African context since interpretations may differ considerably in industrialised countries (ICs), newly industrialised countries (NICs) and less industrialised countries (LIC) (§1.2).

2.2.1.1 Defining the concept 'teacher'

Dewey (1897) upholds that teachers are not simply training individuals or imposing certain ideas or habits in the child but views the teacher as member of the community with a responsibility to select and unfold learning opportunities and to guide the learner in responding to these opportunities. Dewey's pedagogical creed implies that teachers should have the necessary knowledge, skills and professional attitude to make informed selections of the most relevant learning opportunities. Gabela (2004,

p. 56) defines the ‘teacher’ from within an academic perspective as a highly skilled person who has gone through a rigorous and relevant programme of general and specialised education. This description may be relevant in the context of an IC where rigid teacher education is a given. However in LICs or NICs such as South Africa, the term ‘teacher’ is commonly used to refer to both qualified and under - or unqualified practitioners employed as teachers in schools. The latter are usually employed to supplement the huge demand for teachers, and where teacher shortages leave no other option.

Dewey’s view of a professional teacher is echoed by the definition of the South African Department of Education (2005b, p. 6) where the teacher is defined as “a person with the educated competences and abiding commitments needed to engage successfully in the professional practice of teaching. A professional teacher is characterised more by a commitment to the ideals of the profession, and flexible competences to pursue those ideals in a variety of circumstances, than by mere obedience to the legitimate requirements of an employer.” This definition emphasises the professional attitude and self-directed disposition of a professional teacher who strives towards continuous improvement through reflective practice. SACE (2005, as cited by De Clercq, 2013) underscores this self-directedness as a fundamental element in professional teacher development programmes; they are (or should be) pedagogical projects which focus on the internal quality of teaching as a profession by developing teachers who are competent to make autonomous and appropriate decisions in their practice.

The criteria used to categorise teachers as qualified, unqualified, or under-qualified has been debated by educationists in the SA context. The DoE cautions that the definition 'qualified teacher' had been a source of resentment and controversy in the past (South African Department of Education, 2005b, p. 14). The DoE further notes that referring to a teacher as 'qualified’ in turn leads to the labelling of 'unqualified' and 'under-qualified' which many long-serving under-qualified teachers find demeaning.

Although experience may also contribute to improved teaching competence, literature concurs regarding the positive relationship between teacher qualification and quality education in schools (Darling-Hammond, 2010b, p. 36; Garet, Porter,

Desimone, Birman, & Yoon, 2001, p. 916; South African Department of Educationx, 2006, p. 7; Wang, Coleman, Coley, & Phelps, 2003). The DoE has currently raised the bar for teacher qualifications and anticipates that all teachers should aim to attain at least a B.Ed. degree (Green, 2012). This recognition, namely that teacher qualifications directly relate to improved learner performance, especially in the early years, is shared by many educationists and confirmed by research (Lobman, Ryan and McLaughlin, 2005; Whitebook, 2003). The *Report of the Ministerial Committee on Rural Education* (South African Department of Education, 2005c), notes that rural areas especially show a shortage in qualified and competent teachers and have limited access to professional development programmes. The Annual National Assessments (ANA) is a strategy of the DBE to improve the quality of learning outcomes in the education system. This assessment was implemented from 2001 to enable the education sector to increase feedback on how the various strategies and interventions that the Department puts in place impact on the critical aspect of education and learner performance (South African Department of Basic Education, 2013). The ANA results indicate that learners in rural schools are most prone to academic underachievement which leads to schools being classified as dysfunctional (South African Department of Basic Education, 2013, p. 82). Strategies should therefore be devised to specifically support the professional development of under-qualified teachers in rural areas.

2.2.1.2 Defining the concept 'professional development'

The National Professional Development Center on Inclusion (NPDCI) of the United States refers to inconsistency in the interpretation of professional development in the field of education (National Professional Development Center on Inclusion, 2008, p. 2). According to the NPDCI, consensus on the meaning of professional development for teachers is necessary to establish professional competencies and standards for diverse groups of practitioners since it embraces all types of facilitated learning opportunities from formal programmes to informal and situated in practice (§1.2). This view is shared by Martinet, Raymond and Gauthier (2001, p. 13) where they define professional development as "the process undertaken to develop the competencies that make an occupation a profession: the organisation of professional knowledge, on-going professional development, individual effectiveness and

efficiency, the sharing of expertise between group members and the codification of practical knowledge." Moletsane (2004, p. 202) cites Goodlad (1990) who, more than a decade ago, emphasised that society expects of a professional teacher to make a difference in children's lives. According to Goodlad, when we entrust our children to teachers we assume they are of good moral character, are well qualified, have adequate content knowledge and pedagogical skills, are motivated to provide the best education they can, and are able and willing to effectively run the schools and classrooms in which they teach. This important relationship between pedagogical content knowledge (PCK) and professional attitude is also highlighted by Richter et al., (2010, p. 116), and is further explored in Chapter three (§.3.2.3). Gabela (2004, p. 56) describes 'professional teaching' as setting an example of what good teaching entails: "If it is not good it is unprofessional."

In some countries the term 'professional development' in the context of teacher education is generally used to refer to the further development of qualified teachers in practice (§2.3). Musset (2010, p. 7) notes that the purpose of continuing teacher education as part of professional development is to update, develop, and broaden the knowledge which teachers acquired during their initial teacher education and/or to provide them with new skills and professional understanding. Even if teachers receive high quality initial teacher education, professional development should continue throughout their careers to develop the skills needed to reach higher learner outcomes. Musset further claims that continuous professional development of teachers is even more important in countries where teachers do not receive the academic preparation they should during initial training. Continuing training in practice is also linked to the idea that the school context is a valuable place for teacher learning (Musset, 2010, p. 7).

Advocacy for an interrelationship between knowledge and practice is necessary; Fullen and Hargreaves (1992, as cited by Adams, 2010, p. 22), describe professional development as "continuing education opportunities that promote growth in knowledge, skills, and judgment for practising teachers as they learn new concepts, ideas, skills, applications, and teaching strategies." This definition implies that professional teacher development is not a once-off opportunity for professional growth but that practising teachers should, on a continuous basis, be equipped with

additional knowledge and skills to make informed judgements about the most appropriate teaching strategies in the contexts in which they teach. It further accentuates the critical need for teachers to apply new skills and knowledge in practice.

A more comprehensive definition confirms the notion of improved practice as a result of professional development and includes teacher support and contextual learning as critical components in teacher professional development programmes:

> … a comprehensive, sustained, and intensive approach to improving teachers' effectiveness in raising student achievement by providing job-embedded education and other forms of assistance to support the transfer of new knowledge and skills to the classroom. (National Staff Development Council (US), as quoted by Hirsh, 2009) PAGE

Reviewed in light of the above a professional teacher can be described as a person who not only has the relevant pedagogical knowledge and practical competence to maintain quality education in practice, but a person who is also committed to quality teaching directed by a professional attitude. However, where practising teachers are not yet fully developed, it is required that they undergo specialised training to attain the required knowledge and competencies leading to professionalism. Professional development programmes should thus lead to professional knowledge, competencies, and attitudes which equip teachers to be agents of change in the education of the country.

Different models are implemented for teacher professional development. Taylor (2013) expresses his concern about the top-down approach to teacher professional development in South Africa whereby teachers and leaders look outside the school - to the district, province, or non-government partners - for help. According to Taylor, add-on programmes by distance and short courses have little impact on teachers' competence. He suggests a more bottom-up approach where a promising but under-utilised source of assistance lies within the school itself where the teachers at the same grade level, learn from each other through lesson observation, team teaching and mentoring. Fullan (1994, p. 1) believes that a sophisticated blend of top-down and bottom-up strategies is required for educational reform. Such an approach where

centralised-decentralised forces are combined for more effective results will embrace the role of teachers in their own ongoing professional learning while the quality is controlled by authorities. (§6.6)

2.2.1.3 Applied competence as outcome of professional teacher development

According to Desimone, Smit, and Ueno (2006) professional development of teachers is the major focus of educational reform initiatives as it is considered an essential mechanism for deepening teachers' content knowledge and developing their teaching practices. This description identifies the two main facets of teacher professional development, namely teacher knowledge and the way teachers apply this knowledge in practice. Since teaching is viewed as a competence-based profession, programmes aimed at professional development should not only include both these facets, but also ensure that teachers are supported and enabled to apply knowledge effectively in practice.

The MRTEQ defines applied competence as the ability to integrate and apply different types of knowledge in the moment of practice to secure effective learning (South African Department of Higher Education and Training, 2011, pp. 7, 8). The important role of content knowledge and experience learning in the development of applied competence in all teacher education programmes cannot be denied, but mere transfer of this knowledge from the teacher-educator to the student-teacher does not guarantee the development of professional teachers who can apply knowledge in a competent and informed manner in practice. This requires a deeper knowledge and understanding of how learners learn, and of the most relevant ways to support learning. Teacher professional development programmes should thus include design features that support the development of applied competence based on sound pedagogical knowledge. In Chapter one (§1.5.1) elements of applied competence as identified from a literature review included PCK, self-directed learning which includes reflection and inquiry learning, the development of a professional attitude and the opportunity for guided applied practice. Chapter three (§3.2) describes the essence of each of these elements as well as their interrelated roles in the professional development of teachers.

Although the essential purpose of professional development in ICs correlates with that of the South African Department of Education, namely improved applied competence in practicing teachers (§1.5.2; §2.3.1), professional development in the South African context can also mean attaining initial qualifications by practising under - or unqualified teachers (Welch, 2008, p. 325). This study is focused on the practical component of a DL programme aimed at under-qualified practicing Foundation Phase teachers. In the context of this study the term 'professional development' therefore includes the attaining of initial teacher qualifications by under - or unqualified practising teachers, as well as the continued teacher professional development of qualified practising teachers. To place the study in context the term *'teacher professional development'* needs further delineation.

2.3 CONTEXTUALISING TEACHER PROFESSIONAL DEVELOPMENT IN SOUTH AFRICA

In most developed countries the term 'teacher professional development' is associated with on-going or further development after acquiring initial qualifications. The OECD (2005, p. 124) defines professional development as "in-service training which seeks to update, develop and broaden the knowledge teachers acquired during initial education and/or provide them with new skills and professional understanding." The terms 'teacher professional development' and 'continuous/on-going professional development' are often used interchangeably (i.e. further professional learning and development in specific areas of education such as inclusive education, administration, and new policies).

In South Africa many under - or unqualified persons work as teachers and are referred to as 'teachers' irrespective of previous qualifications (or lack thereof). Some of these under - or unqualified teachers have been in the teaching profession for a considerable number of years and therefore have substantial teaching experience. When these teachers enrol for studies to attain professional and accredited qualifications it is therefore also termed 'professional development' even though it is often these teachers' initial formal education. Moreover, the National Framework for Teacher Education also uses the term to refer to these initial qualifications (South African Department of Education, 2005b, p. 9).

The Norms and Standards for Educators (NSE) (South African Department of Education, 2000, p. 9) defines educator development as “the on-going education and training of educators, a continuum, including both pre-service and in-service education and training.” The definition thus embraces both pre-service and in-service teacher education programmes as part of teacher professional development. The South African Government introduced various policies on teacher education during the past years in an attempt to reform education and to uplift the quality of teaching in schools. As the programme under investigation was also part of an NCDoE bursary project aimed to improve teaching quality in the Northern Cape, the following section provides a background to South African teacher education policies with specific focus on policies regarding the professional development of teachers.

2.3.1 South African government policy on teacher professional development

Goal 16 of the Action Plan 2014: Realisation of Schooling 2025 (South African Department of Basic Education, 2011a, p. 107) stipulates that teacher professionalism, teaching skills, and subject knowledge should be improved throughout their entire careers. It is thus important that government education plans include continuous teacher development. It is also essential that teachers develop and apply the necessary self-regulation and intrinsic motivation in the implementation of knowledge and skills gained through teacher development programmes if the action plan is to contribute to enhancing the education standards of the country.

Government policies on teacher education reflect expectations of the role teachers should play in the socio-economic success of a country. Various government documents were consulted to investigate the policies regarding teacher professional development with specific focus on the development of teacher competence. In the White Paper on Education and Training (South African Department of Education, 1995), the then newly appointed Ministry expressed the view that teacher education (including the professional education of trainers and educators) is one of the central pillars of national human resource development and that the growth of professional expertise and self-confidence is the key to teacher development.

According to the National Framework for Teacher Education (South African Department of Education, 2005b) the minimum qualification, namely the ACE (§1.2), serves as prerequisite for registration with the South African Council for Educators (SACE) which promotes an opportunity for promotion. This framework for *licensing* motivated many under - or unqualified practising teachers to enrol for the ACE programme delivered by various HEIs via DL in order to attain the required qualifications (§4.2). While the impact of these programmes on the standards of education in schools is questioned (Taylor, 2013), the DL delivery mode is widely criticised for its inability to support the development of applied competence (Binns & Wrightson, 2006, p. 8; Creed, 2001; Ojala et al., 2004; Paige et al., 2008; Upko, 2006).

The MRTEQ aims to provide a basis for the construction of core curricula for initial teacher education (ITE), as well as for continuing professional teacher development (CPTD) programmes by all accredited institutions (South African Department of Higher Education and Training, 2011, p. 5). The purpose of this policy is to define agreed-upon standards for teacher education at different levels and to set minimum competences as outcomes of teacher education programmes (South African Department of Higher Education and Training, 2011, p. 7). Although it appears that these requirements mainly refer to ITE programmes, no minimum requirements could be identified for DL programmes which offer practising under - or unqualified teachers an opportunity to attain initial accredited qualifications. It can thus be assumed that professional development programmes are also subjected to these criteria and that the agreed-upon competences should be ensured by DL programmes for the professional development of teachers.

Policy documents such as the MRTEQ (South African Department of Higher Education and Training, 2011, p. 56) reiterate the basic teacher competencies as set out in the Norms and Standards for Educators (NSE) (South African Department of Education, 2000, pp. 10-22) which include the ability to demonstrate *PCK*, *professional values and attitudes* as well as *self-regulated skills*. According to this policy document, PCK involves sound *subject* and *curriculum knowledge.* Teachers should know how to teach their subjects by selecting, sequencing, and pacing the content in accordance with the curriculum as well as the needs of learners. To meet

the needs of learners requires *pedagogical knowledge* which means that teachers need to *know* who their learners are and how they learn. Teachers should further understand learners' individual needs and be able to adapt teaching strategies and content accordingly.

The MRTEQ also highlights the development of *professional values and attitudes* as an important outcome of all teacher education programmes. Teachers should be able to demonstrate a positive work ethic, display appropriate values, and conduct themselves in a manner that befits, enhances, and develops the teaching profession (South African Department of Higher Education and Training, 2011, pp. 8-9). The role of teachers' attitudes and values in developing applied competence is further explored in §3.2.3.

Another important requirement set by the MRTEQ is the development of *self-directed skills* by teachers. This policy emphasises that teacher education programmes should support the development of reflective practice grounded in theory (South African Department of Higher Education and Training, 2011, pp. 7-9). This self-regulated skill will equip teachers to constantly improve their own teaching and also to adapt teaching strategies according to changing circumstances.

The MRTEQ (South African Department of Higher Education and Training, 2011, p. 6) further emphasises *applied competence* as the primary means of assessing whether or not the requirements of a learning programme are being achieved. Although the MRTEQ does not differentiate between different kinds of competencies, the NSE (South African Department of Education, 2000, p. 9) views *applied competence* as the overarching term for three kinds of competence, namely practical, foundational, and reflexive competence:

- **Practical competence** is the demonstrated ability, in an authentic context, to consider a range of possibilities for action, make considered decisions about which possibility to follow, and to perform the chosen action.
- It is grounded in **foundational competence** where the teacher demonstrates an understanding of the knowledge and thinking that underpins the action taken.

- This in turn is integrated through **reflexive competence** where the teacher demonstrates an ability to integrate or connect performances and decision-making with understanding, to adapt to change and unforeseen circumstances, and to explain the reasons behind these adaptations.

Although the MRTEQ does not set specific standards to define competences at deeper specialised levels for specific subjects or specialisations, it is suggested that such standards will be developed by the relevant teacher education communities of practice (South African Department of Higher Education and Training, 2011, p. 4). However, in the South African context where teaching standards are rated as amongst the poorest in the world, the quality of such competence development cannot be guaranteed.

As HEIs need to submit new teacher qualifications for approval to the Council for Higher Education and also to the DoE for advice, the government can control the quality of the programmes offered. The latest policies take great care to describe:

- clear and specific requirements for the development of learning programmes with guidelines regarding practical and work-integrated learning,
- flexibility and allocation of credits within learning programmes, and articulation pathways within teacher qualifications offered by HEIs, and
- a knowledge mix that should form the basis for programme design (South African Department of Higher Education and Training, 2011, p. 6).

Although the value of the above-mentioned policies is not disputed, these criteria do not stipulate definite principles and attributes to which teacher education programme design, content, and delivery need to adhere in order to guarantee the development of applied competencies as programme outcomes.

Darling-Hammond refers to various research findings which confirm that professional learning by teachers improves teacher practice and student learning (Darling-Hammond et al., 2009, p. 7). As the quality of teacher training programmes is linked directly to the level of learner performance and the consequent future of a country's people (Darling-Hammond, 2010b, p. 35), it serves as motivation to investigate the

teacher education policies and programmes offered by countries which set the pace in teacher education. A literature search was therefore conducted to determine elements of quality in international teacher education models and the role of these elements in supporting applied teaching competence. The focus was therefore not on delivery mode or qualifications but on the fundamental principles which underlie the development of competent teachers. These elements served as the theoretical framework for an empirical study which investigates the way a practical component added to a revised DL programme supported the applied competence of Foundation Phase teachers.

2.4 INTERNATIONAL MODELS FOR TEACHER PROFESSIONAL DEVELOPMENT

Countries that are serious about quality education should also take teacher education and preparation seriously. Hertert and Teague (2003), in their investigation into the way US education policy contributes to the narrowing of the achievement gap, refer to research that correlates the level of teacher qualification to learner performance and come to the conclusion that the single most important school resource linked to academic success is the teacher. Teacher qualification as critical determinant of quality education in schools is confirmed by various studies and reports (Yates, 2007; Yoon, Duncan, Lee, Scarloss, & Shapley, 2007). Yates (2007, p. 2) asserts that, “while there is little universal agreement on what actually constitutes ‘quality education’ or how best to achieve it, schools and teachers remain central to the achievement of a quality education process.”

According to Guo and Pungar (2008, p. 247) teacher quality can be defined in terms of their pupils’ performance or in terms of teacher qualifications. Yoon et al. (2007, p. 1) affirms that professional development opportunities for teachers is a key mechanism for improving classroom instruction and learner achievement, and that teachers who receive substantial professional development can boost their learners’ achievements by about 21 percentile points. The important relationship between teacher quality and quality of learning by learners cannot be ignored. Successful models and their underlying principles should thus be explored as a way to build knowledge of what constitutes effective teacher education programmes.

Setting standards for certification allows for the establishing of a common understanding of *what a good teacher is;* it is therefore more important to certify output requirements (professional values, knowledge, and teaching skills) than inputs (coursework that has to be completed) (Musset, 2010, p. 43). This author adds that what is perceived as criteria for a good teacher may vary widely between different countries, and that the way performance standards are measured is an extremely complex process since it is based on subjective judgments (Musset, 2010, p. 43). The opinions held by faculties of education, government, and policy designers regarding the competencies of a good teacher as well as beliefs about the role of the teacher in an education system, will thus greatly determine the criteria set for teacher professional development.

Gambhir, Broad, Evans, and Gaskell (2008, p. 18) believe that teacher education programmes need to introduce and model powerful forms of instruction, collaborative inquiry, and research infusion that is responsive to on-going change. Such a view encourages a more constructivist orientation to teacher education that includes a rich repertoire of professional learning practices for all teachers, from the beginner to the experienced (Gambhir*,* et al*.*, 2008, p. 18).

Although the focus and content of international policies on teacher competencies and education diverge widely as a result of political, historical, and socio-economic factors, a search for set criteria to certify quality teacher education reveals concurrence regarding teacher knowledge and competencies. Yates (2007, p. 2) refers to the Global Monitoring Report (GMR) identifying Finland, Korea, Canada, and Cuba as among the top performers in terms of offering quality education for student-teachers. Apparently the high quality in these countries can be ascribed to the fact that the quality of teachers and their continuing education and training is central to the achievement of quality learning. These four countries are however not necessarily the top performers in TIMSS (Trends in International Mathematics and Science Study) and PIRLS (Progress in International Reading Literacy Study), since the criteria for teacher quality comprises diverse benchmarks. PIRLS and TIMSS are projects of the International Association for the Evaluation of Educational Achievement (IEA) and are designed to assess the reading, mathematics, and science achievements of fourth grade pupils.

These countries identified by the GMR, namely Finland, Korea, Canada, and Cuba, offer ITE as fulltime courses and seldom employ unqualified teachers. Little literature on DL programmes for the professional development of under - or unqualified practising teachers in these well performing countries could be identified. The ITE programmes typically include a practicum component in which student-teachers implement PCK, usually under supervision of an experienced teacher, and their applied competence is assessed by university staff. In DL programmes a practicum is not always feasible because long distances hamper the support and assessment of applied competence; alternative measures should be found to secure this development. The purpose of this literature review is thus not to compare the DL programme under investigation with acclaimed international programmes because the purpose, delivery, and target populations are diverse. As this study focuses on strategies to support applied competence in a distance learning programme for Foundation Phase teachers in South Africa, the literature on Finland, Korea, Canada, and Cuba was specifically scrutinised to identify important elements of applied teaching competence. The elements were: PCK, self-directed learning strategies such as reflection and inquiry, guided applied practice, and aspects related to the development of a professional attitude such as motivation and commitment to teaching practice (§1.5.1 and §3.2). Findings on the way programmes in these four countries accommodate these elements of applied competence, served as grounding for the investigation of the way a practical component added to a revised DL programme supported the applied competence of Foundation Phase teachers in South Africa. The literature findings further also served to strengthen suggestions on ways to include these core elements in a DL programme (§6.3 and §6.4)

Apart from the structure and content of teacher education programmes and the role of training institutions offering these programmes, it is recognised that various factors such as historical and political background, population compilation, and the education system play a role in teacher education models implemented in a country. As this study focuses on the way programmes support elements of applied competence, a brief account of the background and underlying educational principles of each country was deemed necessary for an understanding of the way their teacher education programmes support applied competence. As the international models

mainly refer to ITE programmes when discussing teacher professional development models, the students referred to in the literature are mostly not practising teachers. This section will thus use the term student-teacher to refer to the persons enrolled in teacher education programmes in the respective countries.

2.4.1 Teacher professional development in Finland

Pasi Sahlberg, Director General of the Centre for International Mobility and Cooperation, compiled a comprehensive report on the reasons for Finland's successful education system: *The Secret to Finland's Success: Educating Teachers*. Although other sources were also consulted to confirm the findings stipulated in Sahlberg's brief, the following section on Finland's teacher education model mainly focuses on research by Sahlberg (2010), to explore how the critical elements of applied competence such as PCK, aspects related to self-directed learning, accommodating student-teacher attitudes and motivation as well as guided applied practice, play a role to support applied competence in teacher education in Finland.

The Finnish National Board of Education (2014) ascribes the success of their education policy to quality, efficiency, equity, and internationalisation. Upgrading teacher competencies and enlarging adult learning opportunities are some of this country's key aims in education. In Finland education is viewed as a key factor for competitiveness, and continuous improvement of the education system is the drive behind a successful education model. Through continuous research they strive to enhance the quality and impact of education and training (Finnish National Board of Education, 2014).

Sahlberg (2010, p. 1) affirms that research is the key element that has impacted Finland's excellent teachers and contributed to Finland emerging as the leading Organisation for Economic Cooperation and Development (OECD) country in educational achievement over the last decade. While education policy is clear on teacher competence and accountability, the teaching profession is also held in high esteem.

In Finland applicants from the top 10 % of the nation's graduates earn the required master's degree in education (Hancock, 2011). Screening of entrants not only

ensures a highly competent teaching force, but serves to identify persons who are highly motivated to become part of this valued profession. It is evident that in a developing country such as South Africa where teacher shortages compel the DoE to employ under - or unqualified teachers, the standards of teaching and applied competence hardly measures up to an education system where only academically strong and highly motivated teachers are part of the teaching force.

The only way to receive a teacher's qualification in Finland is through a university degree which gives teachers a license to teach. Entry requirement for permanent employment as a teacher in Finnish basic and high schools is a Master's degree while pre-school and kindergarten teachers must have a Bachelor's degree. Successful completion of a Master's degree in teaching (including the Bachelor's degree) generally takes from five to seven and-a-half years (Sahlberg, 2010, pp. 2, 3).

It is evident that teacher qualification is a critical determinant of a country's academic performance. The design, content, and delivery of their teacher education programmes and curricula should therefore be explored in more detail.

2.4.1.1 Principles for teacher professional development in Finland

Teacher education programmes are nationally coordinated to ensure coherence (Sahlberg, 2010, p. 3). A similar system is implemented in South Africa where minimum standards for teacher qualifications are set by the national government (South African Department of Higher Education and Training, 2011). In Finland, educational theories, research methodologies, and practice are integrated in teacher preparation programmes, and grounded in research. Sahlberg (2010, p. 3) cites Westbury et al. (2005) who highlight the assimilation of PCK, applied practice, and self-directed skills such as reflection in successful teacher education: "Particular attention is given to building pedagogical thinking skills that enable teachers to manage the teaching process in accordance with contemporary educational knowledge and practice." The role applied competence plays in teacher education in Finland was explored in the relevant literature.

- **Pedagogical content knowledge**

According to Sahlberg (2010, p. 3) the focus in primary teacher education in Finland falls on three main areas: (1) theory of education, (2) pedagogical content knowledge, and (3) subject didactics and practice. Prospective primary school teachers normally complete their Master's theses in the field of education while the level of academic expectations for teacher education is similar for all teachers.

A balance between theory and practice is ensured by a broad-based curriculum that aims to equip teachers with the necessary content knowledge and pedagogical skills. The curriculum furnishes prospective teachers with "a deep professional insight into education from several perspectives, including educational psychology and sociology, curriculum theories, assessment, special-needs education, and pedagogical content knowledge in selected subject areas." (Sahlberg, 2010, p. 3). Concurring with Dewey, various researchers identify the interrelationship between reflection on PCK, and a reflective practice. As teacher education programmes in Finland aim to promote student-teacher insight into PCK they also enable student-teachers to reflect on the implications of PCK in practice which in turn promotes applied competence (Ciminelli, 2011; Hatton & Smith, 1994; Huisman & Edwards, 2011; Stanley, 1998).

- **Self-directed learning and teaching**

From Sahlberg's report it is apparent that the general confidence in teachers' competence to work autonomously as well as the authority's belief that teachers are able to apply their scientific knowledge and skills gained through university studies, lend social prestige to teaching as a profession. Relevant literature sources were therefore explored to determine how self-directed learning skills such as learning trough inquiry and reflective learning are accommodated in Finland's teacher preparation. While teacher attitude and motivation are identified as the drive behind self-directed learning and teaching, references to student-teacher disposition were also explored.

Reflective learning

Finnish students are prepared as reflective practitioners by equipping them with the knowledge and skills to design, conduct, and present original research on practical or theoretical aspects of education to build an understanding of the systemic interdisciplinary nature of educational practice. Various studies concur regarding the significant responsibility Finnish teachers take on for curriculum and assessment, as well as experimentation with and improvement of teaching methods - which imply reflective practice (Darling-Hammond, 2010a, p. 18; Sahlberg, 2010, pp. 2, 4).

As educational goals endorse assessment *for* rather than *of* learning, teachers are expected to support reflective learning by their learners. According to the Finnish National Board of Education, the main purpose of assessing students is to guide and encourage their own reflection and self-assessment; teachers give students formative and summative reports both through verbal and narrative feedback (Sahlberg, 2010, p. 4). It can thus be assumed that teacher education programmes prepare Finnish teachers through reflective learning as part of the curriculum. The interrelatedness between inquiry-based learning, thinking processes (reflective learning), and self-directed learning is clearly understood by the Finnish as a key to effective teacher education. Student-teachers are therefore not only equipped with PCK but also the necessary expertise, accountability, and commitment to support their learners (Sahlberg, 2010, p. 2).

Inquiry based learning

Darling-Hammond (2010a, p. 18) points out that apart from all teachers receiving three years of high-quality academic preparation completely at state expense, the quality of education is enhanced by a major overhaul of the curriculum and assessment systems to ensure access to a ‘thinking curriculum’ for all students. A critical pillar of Finland’s successful education is adherence to the principle that all education including curriculum development should be supported by scientific knowledge and cognitive skills grounded in research. The high qualification requirement, namely a Master’s degree, further implies that teachers develop critical research skills before entering the profession. A

Master's thesis requires independent research, participation in research seminars, and presentation of a final educational study (Sahlberg, 2010, p. 3). This approach to teacher professional development, whereby teachers are guided in reflective and investigative practice, is underscored by various educationists (Hargreaves, 2007, p. 3; Kansanen, 2006, p. 11; M. G. Moore, 2007b, p. 127). According to Sahlberg "teacher education curricula are designed to create a systematic pathway from the foundations of educational thinking to educational research methodologies and then on to more advanced fields of the educational sciences." Inquiry is a major focus of learning in Finland, and assessment is used to cultivate students' active learning skills by asking open-ended questions and helping them to address these (Sahlberg, 2010, p. 4).

- **Professional attitude and motivation**

The value attached by society to the teaching profession greatly influences the approach of prospective teachers towards their own learning and professional development. Education has always been an integral part of Finnish culture and society, and teachers enjoy great respect and trust in Finland. Finns regard teaching as a noble prestigious profession – akin to medicine, law, or economics – and one driven by moral purpose rather than material interests (Sahlberg, 2010, p. 1). This high value placed on teaching implies that teachers are regarded by society as professionals who have the autonomy to manage their practice in a responsible way (Darling-Hammond, 2010a, p. 19).

Finnish teachers' devotion to improvement in classroom practice, the school as a whole, as well as community service is confirmed by Sahlberg (2010, p. 7): "Because Finnish teachers take on significant responsibility for curriculum and assessment, as well as experimentation with and improvement of teaching methods, some of the most important aspects of their work are conducted outside of classrooms." It is clear that teacher education programmes in Finland promote the development of a professional attitude and self-directed teaching propensity in practice.

- **Applied practice**

Sahlberg accentuates that teachers' strong competence and preparedness in Finland create the prerequisite for professional autonomy that makes teaching a valued career. Approximately 15% of primary school student-teachers' study time is devoted to practice teaching in identified highly functional schools where only experienced teachers are endorsed to support and assess student-teachers. The curriculum integrates practical training in schools with theoretical and methodological research studies. This approach concurs with the literature which states that PCK cannot be separated from practice in teacher education (Darling-Hammond, Hammerness, Grossman, Rust, & Shulman, 2005, p. 391; L. S. Shulman & Shulman, 2004, p. 3). The development of students' practical competence is supported by three progressive phases over the five-year programme from basic "to advanced and to final practice." While the focus of this study is applied competence in a DL programme, alternative ways should be found to include opportunities for guided applied practice and formative assessment if quality programme outcomes are to be ensured.

Sahlberg (2010) identifies two main kinds of practicum experiences in teacher education programmes in Finland which may also be relevant to the DL context. The first occurs in seminars and small-group classes where students practice basic teaching skills in front of their peers while the second happens in special teacher training schools governed by universities or selected public schools. Learning in and from practice means that students observe lessons presented by experienced teachers, present practical lessons which are observed by supervisory teachers, and deliver independent lessons to different groups of pupils. During the last phase candidates are evaluated by supervising teachers, the Department of Teacher Education, and professors and lecturers (Sahlberg, 2010, p. 4).

2.4.1.2 Continuing professional development of teachers in Finland

While many countries are asking what they can learn from Finland's success story to improve their education systems, Sahlberg (2010, p. 5) reports that Finland's in-service professional development programmes should be improved and advocates for a more uniform induction programme for new teachers. Where in-service

education is the responsibility of municipalities, the central government has limited influence on the extent and quality of professional development. However, in 2009 the Finnish Ministry of Education proclaimed that, in collaboration with municipalities, they plan to double the public funding for teacher professional development by 2016 which further confirms the high priority placed on education (Sahlberg, 2010, p. 6).

According to a report by Darling-Hammond et al. (2009, p. 17) on the professional development of teachers in the US and abroad, the best performing schools in European nations - including Finland, dedicate time for regular collaboration among teachers on issues of instruction. Researchers report that teachers in Finnish schools meet one afternoon per week to jointly plan and develop curricula, and schools in the same municipalities are encouraged to work together and share materials. Time for teacher *professional development* is built into workdays and by providing class coverage by other teachers. Quality teaching is thus enhanced through teachers learning in practice as well as learning from practice.

The fact that further professional development is lacking in the Finish education system, may be ascribed to the existence of an already strong teaching force. It is obvious that where quality IEP lays the foundation for self-directed teaching and learning, the need for organised professional development becomes less critical. Well-prepared teachers are equipped and motivated to evaluate, regulate, and improve their own teaching strategies through continuous reflection and inquiry – individually or cooperatively. It is clear that Finnish teachers are trusted to know how and where to find answers to problems experienced in practice, and are granted the autonomy to implement remedies as needed.

2.4.1.3 Distance learning for teacher professional development in Finland

The literature yielded limited information on DL for initial teacher education in Finland. This may be attributed to the fact that teaching as a complex and highly professional occupation is viewed as requiring rigorous support and monitoring during the development of relevant PCK and practical skills. Sources that refer to DL for teacher education mainly mention supplementary professional development courses available for practising qualified teachers, or short courses that strengthen teaching skills such as the use of technology (The Trade Union of Education in

Finland, 2008). DL is also implemented in career changes such as cases where persons who have received vocational training in other areas of specialisation want to apply their knowledge in the teaching sector. According The Trade Union of Education in Finland, teachers of vocational subjects must have at least three years' work experience in a field compatible with the teaching post before they start their pedagogical studies, which they complete either before they take up teaching or as a distance learning programme while teaching (The Trade Union of Education in Finland, 2008).

Meriläinen, Valli, Valli and Piispanen (2013) report on a distance learning programme aimed to support teacher students during their final practicum. Guidance, discussions, mentoring, and seminars are implemented online to make collaboration between teacher-educator (lecturer) and students possible and visible. The authors report that every student has a mentor at the practicum school who participates with the student-teacher in online seminars organised by the university. Meriläinen et al. (2013) posit that using online support options help to bridge the distance between faculty staff and students and also between students. Students do not only communicate online with their peers during practicums but also 'sit in' during peer lesson presentations through the use of technology. Besides mentoring, learning tasks, online discussions, and reports, a real time 'online monitoring day' forms part of the practicum during which a student is responsible for building a monitoring area with two cameras in his/her classroom.

According to Meriläinen et al. one of the most important benefits of real time online monitoring and guidance is the possibility to record lesson presentations which enables the student as well as the teacher to return to the recorded material for later reflection. Recordings provide additional opportunities for teacher-educators to indicate strong and weak areas in lesson presentation and can also be used for teaching purpose with the permission of the participants. Apart from providing opportunities to support and assess the applied competence of student-teachers, it saves both time and money. The authors are of the opinion that such online support provides even more benefits for student-teacher development than physically being in a classroom. Online support strategies ensure more openness and therefore

support pre-service teachers' academic growth during the practicum in an authentic teaching and learning context (Meriläinen et al., 2013).

2.4.2 Teacher professional development in South Korea

In collaboration with the OECD and the *Korean Educational Development Institute*, Ee-gyeong Kim and You-kyung Han (2002) report on teacher education in South Korea as part of the OECD research project: *Attracting, Developing and Retaining Effective Teachers.* This OECD venture aimed to compare similar reports on teacher education from various countries in order to contribute to an international perspective on effective teacher education. Although other more recent sources are cited to strengthen findings reported by Kim and Han, the following section relies mainly on this literature for a framework of how critical elements such as PCK, aspects related to self-directed learning, and student-teacher attitude and motivation play a role in supporting applied competence in teacher education in South Korea.

In order to overcome the national economic crisis that hit Korea in 1997, the country has restructured various sectors of society which include teacher education. This reform initiative has focused on the quality of teacher education rather than quantity (Kim & Han, 2002, p. 5). The success of this reform shows in the results of the OECD Programme for International Student Assessment (PISA) and TIMMS evaluations, showing that the Korean education internationally compares with the best performing countries (Park, 2010). Despite the good performance of Korea's learners in the PISA and TIMMS, Seong, Shin and Ilon (2009) warn that the current obsession with education and a propensity towards a test-dominated culture is in direct conflict with previous views of education in Korea which called for "educating the whole person—a combination of head, heart and hand."

As the GMR categorises South Korea among the top performers in terms of offering quality education for student-teachers (Yates, 2007, p. 2), South Korea's teacher education should be investigated to determine programme features that contribute to the applied competence of teachers and the consequent academic success of its learners.

2.4.2.1 Principles for teacher professional development in South Korea

Teacher education is offered by many institutions but Kim and Han (2002, p. 49) as well as Park (2010) note that Universities of Education are solely designated for elementary teacher training. The 1995 Education Reform Plan includes various improvement strategies such as curricular reorganisation, adoption of evaluation and accreditation system, upgrading teacher education, and an overall integration of institutions which deliver teacher education programmes. The main aim is to train excellent teachers who are able to meet the challenges of increasingly assertive students, the information age, globalisation, and the changing field of education itself (Kim and Han, 2002, p. xi).

Apart from a general academic high school qualification or an academic qualification equivalent to a high school grade, admittance to a University of Education depends on an applicants' score in the College Scholastic Ability Test which includes an aptitude and character evaluation (Kim and Han, 2002, p. 52). In a country where there is no teacher shortage, such a screening process could contribute to quality in terms of a teacher force that is well-suited to the profession and has a passion for teaching.

After completion of the four years of coursework leading to a Bachelor's degree, teachers are eligible to apply for a teacher certificate. They are issued a grade two certificate (first level), which can be upgraded to grade one (second level) after three years of experience and fifteen credit hours of in-service training as part of their further professional development. Teacher graduates are hired centrally at municipal or provincial levels based on their scores in a competitive examination referred to as the 'teacher employment examination' (Center on International Education Benchmarking, 2013; Kim and Han, 2002, pp. 41, 67). This exam consists of a written test which according to Park (2010) includes an in-depth interview in which subject knowledge and pedagogy as well as the teaching competence of an applicant is evaluated. According to Kim and Han (2002, p. 64) the rigid screening of teacher proficiency sets high standards for teacher competence and subject knowledge. It is thus apparent that teacher applied competence is viewed as a critical requirement for employment as well as for promotion in South Korea.

- **Pedagogical content knowledge**

In order to address previous deficiencies, substantive PCK forms part of teacher education curricula. The education reform initiative training programmes emphasise pedagogy, ethics, information management ability, class management, and counselling skills as important components of teacher education programmes (Kim & Han, 2002, pp. 2, 8).

According to information provided by the Centre on International Education Benchmarking (2013) teacher education programmes offered by HEIs in South Korea involve four years of coursework in a curriculum that is made up of both subject-area content and pedagogical theory. General courses comprise 30% of the curriculum which requires a generic component including courses in humanities, social sciences, natural sciences, and physical education as well as electives which students choose from humanities, language and literature, social sciences, natural sciences, and the arts. The other 70% of the curriculum is made up of major courses as every teacher in Korea is required to have a subject major which is listed on his or her teaching certificate. These comprise general pedagogy (11 subjects including educational psychology, educational sociology, educational philosophy, and school and classroom management); subject-specific pedagogy; training courses for the arts and physical education; advanced courses in one of the subject areas as well as a graduation thesis and credits in practice teaching (Center on International Education Benchmarking, 2013). Although this report does not differentiate between elementary and senior phase teacher curricula, it seems that student-teachers need to master a wide range of prescribed PCK.

- **Self-directed learning**

Various authors refer to the dilemma of teachers who, although renowned for excellence, are subjected to prescriptive regulations from the government with regards to *what* and *how* they should teach (Kim and Han, 2002; Park, 2010; Seong et al., 2009). Such trends may limit the way teacher education supports self-directed learning by intrinsically motivated teachers who are equipped to improve their own practice through reflective and inquiry learning and teaching

Reflective learning

Although more recent sources (Kim and Chin, 2011; Lee, 2005; Seong et al., 2009) report on changed perspectives and more self-directed strategies in teacher professional development, the available literature on reflective learning in South-Korean teacher education curricula is limited. The curriculum-based and test-driven approaches reported on by many authors (Kim and Han, 2002; 2011; Seong et al., 2009) may be the reason for less focus on reflective learning. The reform movement may however be changing these values according to Lee (2005) who investigated the development of Korean pre-service teachers' ability to reflect on practice as well as students' levels of reflection during their practicums. Strategies such as journaling, clinical interviews, dialogues, narrative inquiry, observational learning, and reflective teaching were implemented to support the development of a reflective practice in this study. According to Lee the students showed some improvement in reflective thinking and although no recent literature on the implementation of such design features by Korean teacher-educators could be identified, studies such as this may be an indication that reflective learning and teaching is on the uptake in teacher education in Korea.

Inquiry based learning

Developing a research based disposition towards education is viewed as a priority in South Korea's teacher education programmes and a thesis forms part of the four year teacher education qualification (Center on International Education Benchmarking, 2013). However Kim and Chin (2011, p. 23) report that the concept of inquiry-based learning was only recently introduced to student-teachers who have been schooled in a theory-focused and test-orientated environment, and warn that the lack of groundwork for inquiry-based learning in schools may hamper elementary student-teachers in the implementation of inquiry-based teaching. The authors also note that the social context in Korea further hinders the implementation of inquiry-based teaching and learning. The test-driven focus is blamed for students' unwillingness to

undertake a more inquiry-based approach and teachers tend to depend heavily on curriculum materials such as textbooks and teacher guidebooks.

- **Professional attitude and motivation**

There is an old saying in Korea: “One should not even step on the shadow of one's teacher” (Asianinfo.org, 2013). This proverb relays the degree of respect traditionally accorded to teachers. However Kim and Han (2002, p. 45) posit that although qualified teachers in Korea have the status of national civil servants and teacher training is centrally regulated, the respect which the profession previously enjoyed is ebbing, as is the trend in many countries worldwide. Motivation for learning and professional development in the teaching profession still appears to be extrinsically motivated by authorities and probably originates from the historical background of Korea. Kim and Han confirm this external force behind teacher learning. According to these authors the aim of the education reform was to change the status quo (authority driven professional development of teachers) by creating a new culture in which education nurtures creativity and strengthens character in order for students to acquire self-directed learning attitudes and the capacity for democratic citizenship in order to maximise self-realisation (Kim and Han, 2002, p. 3). According to Kim and Han the reform aimed to develop teachers who can be trusted to act autonomously, and to strengthen their status as professionals.

- **Applied practice**

HEIs have to prepare teachers for their responsibilities as professionals which imply supporting the development of applied practice in aspects such as teaching and learning activities in class, extra-curricular teaching after hours, special activities, learner guidance through interviews with parents, counselling to learners, and managing classes (Kim and Han, 2002, p. 83).

Apart from a practicum component (field experience) consisting of observation practice and participation practice, teaching practice and administrative work practice (Center on International Education Benchmarking, 2013), the in-service teaching support plan supports beginner teachers to acquire the necessary practical skills after employment. The South-Korean teacher education system clearly prioritises the

role of applied practice in teacher preparation. The BA degree merely admits teachers to register for a level two certificate which can only be upgraded to a level one certificate after three years of experience, 15 credit hours of in-service training, two weeks in-school pre-employment training, and six months post-employment training (Kim & Han, 2002, p. 20). While the DL programme investigated relies on teachers' current teaching experience, it does not include a practicum which guides teachers in the application of knowledge. Programme designers and the South African DBE could take heed of the in-service training model implemented in South-Korea in which newly appointed teachers first have to undergo a practical training period at the school where they are appointed.

2.4.2.2 Continuing professional development of teachers in South Korea

Although the investigated South African DL programme is aimed at under-qualified practising teachers the programmes in Korea that support qualified teachers after employment in schools were explored to identify features which can contribute to applied competence. Kim and Han (2002, p. 58) as well as the Centre on International Education Benchmarking (CIEB) (2013) describe pre-employment (two weeks) as well as post-employment training (six months) for beginner teachers. According to the CIEB *pre-employment training* focuses on aspects such as case studies, practical tasks, theory, instruction in student guidance, and classroom management, while the *post-employment training* involves instructional guidance and evaluation, classroom supervision, instruction on clerical work, and student guidance.

Despite the fact that teacher education is held in high esteem, there is critique on the formalistic manner in which in-service professional development focuses on promotion rather than on raising teacher competence (E. Kim & Han, 2002, pp. 58-62). Points earned by teachers for years of service, evaluation results, and research achievements are added up to culminate in eventual promotion, and teachers can also earn bonus points for aspects like teaching in remote areas or in special education schools. It seems that extrinsic rather than intrinsic factors serve to promote teaching excellence in South Korea which mars the professional reputation of teachers. Part of the education reform initiative of the government therefore

included the opportunity to raise teacher professionalism and morale by improving in-service training.

2.4.2.3 Distance learning for teacher professional development in South Korea

Little reference could be found regarding elementary teachers attaining qualifications via distance learning in South Korea. Although Park (2010) indicates that 61 HEIs operate through distance learning, these programmes are mostly focused on further professional development of qualified teachers.

Shon and Lee (2006) refer to various research studies which support Kim and Han's (2002) criticism of the lack of support in the early childhood and Kindergarten education, and suggest that HEIs should implement distance learning programmes to provide qualifications for practising unqualified Kindergarten teachers. Although the teachers who studied via distance learning showed satisfaction with their programmes, these were mainly offered by private enterprises and HEI cyber-colleges. Since 'cyber' is defined as 'connected with electronic communication networks, especially the Internet' (Hornby, 2010, p. 363), it is understood that programmes are delivered via e-Learning and rely on access to ICT. Shon and Lee question the suitability of these programmes to meet the professional development needs of especially Kindergarten teachers. Further exploration of the reasons for these concerns may also be of value for the designers of DL programmes for Foundation Phase teachers in South Africa.

2.4.3 Teacher professional development in Canada

Gambhir et al. (2008) prepared a report on ITE implemented in Canada for the International Alliance of Leading Education Institutes (Characterizing Initial Teacher Education in Canada: Themes and Issues). Although other sources were consulted to strengthen the data presented by Gambhir et al., the following section draws mainly on this report for information on the way critical elements such as PCK relate to self-directed learning, and on the roles that recognition of student-teacher attitude and motivation play in supporting applied competence in teacher education programmes in Canada.

Canada is the only industrialised country without a national department of education or other mechanism to regulate national educational policies (Wilson, 2003, p. 1). Education is almost entirely a provincial responsibility in Canada, and each of Canada's ten provinces and three territories has the exclusive right to pass legislation on matters of education (Walker & Von Bergmann, 2013, p. 67). Walker and Von Bergman (2013, p. 67) refer to lack of interest in Canada's teacher education policy while Gambhir et al. (2008, p. 3) blame the limited research on Canada's teacher education programmes on this rather complicated governance system. The diverse and independent systems implemented in different provinces do not permit valid evaluations of the quality of implemented teacher education programmes or the consequent levels of education in Canada as a whole. However, compared to other countries, Canada's education system is strong and educational attainment levels in the population are relatively high (Gambhir et al., 2008). This is confirmed by Herrup (2011) who describes Canada's education system as one of the most successful in the world.

The high degree of selectivity in choosing teachers as well as the rigorous training of teachers not just before they become teachers but throughout their entire careers, contribute to Canada's successful education (Herrup, 2011). Canadian applicants to teacher colleges are in the top 30% of their college cohorts (OECD, 2011, pp. 67, 68). The reform initiative headed in Ontario is viewed as the world's leading example of professionally driven change and entails consistent application of centrally-driven pressure for higher results combined with extensive capacity building in a climate of relative trust and mutual respect (OECD, 2011, p. 75).

More than 55 universities graduate 18,000 new teachers every year and offer research-based academic programmes supplemented by mentored field experiences in schools and the community (Gambhir et al., 2008, p. 9). Wilson (2003) and Gambhir et al. (2008, p. 10) found fundamental consensus across initial teacher education programmes despite the absence of national governance with regards to teacher education. The majority of ITE programmes at faculties of education focus on preparing teachers for the Kindergarten to Grade 12 in the school system.

Although four pathways of initial teacher education are distinguished in Canada namely consecutive, concurrent, graduate, and sole degree models (Gambhir et al.,

2008, p. 10; Volante, 2006, p. 167), the detail of these pathways is not the focus of this study. All the pathways include attaining a B.Ed. degree and the admission requirement is secondary school graduation with academic results varying between 65% and 90% depending on the competition for places in the programmes. Proficiency in English is also a requirement. Continuous reviews and assessment of the ITE programmes ensure the quality of teacher preparation, certification, career-long professional development, supervision, and evaluation in the various regions (Gambhir et al., 2008, p. 7).

2.4.3.1 Principles for teacher professional development in Canada

Gambhir et al. (2008, p. 17) describe the approach to teacher education in Canada as follows:

> A holistic orientation uses social constructivist approaches of learning that focus on the development of the individual while fostering awareness and understanding of education in the broader context – community and world. (p. 17)

The Society for the Advancement of Excellence in Education (2008, as cited by Gambhir, et al., 2008, p. 15) reports that the most frequently mentioned principles for initial teacher education programmes in Canada involve the following:

- ✓ producing competent professionals with an emphasis on knowledge, skills and specific competencies,
- ✓ promoting social justice and equity with a focus on *respect for diversity*, and
- ✓ producing reflective teachers.

Components found to contribute to the applied competence of teachers namely PCK, and aspects related to self-directed learning such as inquiry and reflection were explored in teacher education programmes offered in Canada to determine the underlying principles of an effective teacher education model.

- **Pedagogical content knowledge**

Canadian teachers are initially prepared for one or two divisions at primary, middle, and/or secondary level(s), and content and pedagogy are greatly determined by the grades they teach thus influencing the elements of initial teacher education. Although specialisations in particular content areas may be required for admittance into senior teacher education programmes, the elementary programmes generally require less subject specialisation due to the generalist nature of teaching in elementary schools (Gambhir, et al., 2008, p. 12). In the absence of a national regulatory body in Canada, educational programmes differ from one province to another and Volante (2006, p.167) reports that even in individual provinces the nature of course work and performance-based tasks are determined by faculties of education with broad guidelines.

The principle of lifelong learning as part of the outcomes based paradigm underpins Canada's teacher education programmes. Initial programmes are viewed as the first stage of a continuous professional learning process. ITE programmes equip student-teachers with foundational subject knowledge, curriculum knowledge, general pedagogical knowledge, knowledge of learners, and knowledge of the educational context. This knowledge base is continuously applied in classroom practice to ensure the applied competence of beginner teachers (Gambhir et al., 2008, p. 6) 2008, p. 6). Teacher induction programmes and continuing teacher development programmes build onto this knowledge base throughout the teacher's career.

Teachers in the primary grades are regarded as 'generalist' teachers and therefore the curricula include knowledge and skills that span a range of subjects including Math, English, Science, Art, Health, and Social Studies (Gambhir et al., 2008, p. 10). Teacher competence is also refined in areas such as planning, instruction, assessment, effective communication skills, and the understanding of professional and ethical characteristics (Gambhir et al., 2008, p. 6). This generalist role of the teacher resembles the role of Foundation Phase teachers in South Africa (South African Department of Higher Education and Training, 2011, p. 23).

Course content explores themes and issues related to school curricula and instruction, educational law, classroom management, educational psychology, the

sociology of schooling, and professionalism which are all presented through course work as well as experience in practice (practicums). The theoretical content of most of the programmes further aims to equip student-teachers with knowledge of the learner, subject matter, school curriculum, pedagogy regarding principles and practice of teaching, the context of teaching, and the foundations of teaching. The curricula also prepare the student-teachers for inclusive practices (Gambhir et al., 2008, p. 15).

- **Self-directed learning**

Self-directed and self-regulated learning form a critical part of teacher-education programmes in Canada. “Learning to learn, preparation for work, responsible citizenship and instilling values tend to underpin the broad purposes of education in Canada.” (Gambhir et al., 2008, p. 4). Wilson (2003) contends that teacher education in Canada make teachers aware of the interdependence of teacher learning and learning by their learners which implies the development of a self-directed inclination towards the profession.

Professional growth is dependent on the teacher’s attitude towards own professional development, ability to find knowledge to solve problems, ability to promote own professional competence, and to reflect on knowledge and practice. Since Canada’s teachers are regarded as highly successful, literature was perused for ways the development of these self-directed competencies are supported in teacher education programmes implemented in Canada.

- **Reflective learning**

Teacher education programmes in Canada recognise the role of reflection for the development of applied competence (Beck, Hart, & Kosnik, 2002, p. 191; Gambhir et al., 2008, p. 17; Wilson, 2003, p. 10). Gambhir et al. (2008, p. 17) highlight the interrelatedness between reflection and inquiry in a teacher education pedagogy aiming to develop the *whole teacher* by including reflective practice, critical inquiry, and student-teachers’ engagement in learning communities. These authors accentuate the critical role played by reflection and inquiry in mentored course assignments and class discussions in which student-

teachers are asked to critically reflect on their ideas and to question their assumptions about teaching and the profession. Beck et al. (2002, p. 191) pronounce that teacher education programmes strive to respect and engage the reflection and initiative of teachers. The core role of reflection in the learning process is extended to the practicum where the host teacher promotes reflection by students-teachers so that they can think about practice through questioning and feedback.

Canadian faculties of education clearly recognise the critical role of reflection *in* practice and *on* practice to support learning through connecting classroom experience to theory and research; as Gambhir explains, the core subject matter in ITE programmes are attentive to real themes and issues in the day-to-day work of teachers yet grounded in key knowledge bases so that student-teachers are prepared to make informed decisions about teaching and learning (Gambhir, 2008, p. 15).

Inquiry based learning

The decentralised education system in Canada does not allow for generalisations regarding aspects of teacher education such as the accommodation of inquiry based learning since teacher education curricula varies for the different provinces. Walker and Von Bergman (2013, p. 87) raise concern with regards to the divergence in professionalization, autonomy and accountability as aims of teacher education programmes offered in the different provinces. However, Gambhir et al. (2008, p. 18) refer to various studies confirming the positive relationship between the Canadian teacher's capacity for critical inquiry and professional collaboration, and the use of research for pedagogy and improved student learning as well as teacher performance. In spite of the decentralised system it seems as if an inquiry approach to learning and teaching is regarded as high priority.

Casey and Childs (2007) refer to findings of a study of new teachers in Ontario specifying that teachers need to learn 'situationally-relevant' approaches to subject matter; be able to think on their feet after sizing up situations and decide what to do, and to study the effects of their decisions; and how these will affect

their planning. This inquiry approach to teaching is confirmed by Gambhir et al., (2008, p. 18) as well as Wilson (2003, pp. 8, 9), when they refer to the role of collaborative inquiry and research in teacher education programmes. Based in the constructivist theory of learning, programmes are structured in such a way that knowledge is grounded in real issues in teaching and learning, and involve some level of collaboration and professional inquiry. Learning strategies such as lesson study and action research are incorporated into teacher education programmes to allow contextualized, collaborative, and individual inquiry into different fields of education.

- **Professional attitude and motivation**

The value attached to teaching motivation and attitude is evident in the way many programmes consider non-academic factors such as background experience, interest in, or disposition towards teaching, in addition to academic requirements. According to Gambhir et al. (2008, p. 12) student applicants may be required to provide proof of related work or volunteer experiences, and interviews may form part of the application process to determine readiness or propensity to teach.

Beck and Kosnik (2012, p. 62) report on the positive impact of a cohort-based model for teacher education on teacher motivation and attitude. Candidates complete foundation courses through their programme with a small group and a team of instructors. It appears that the relationships which the candidates build through their community contribute to positive affective programme outcomes such as heightened motivational levels. Musset further appeals for the promotion of responsibility in teachers as this will contribute to a professional knowledge for collective goals which are oriented toward the implementation of innovation rather than individual teacher advancement (Musset, 2010, p. 9).

Canada's teacher education models offer valuable lessons for the development of a motivated teacher force with a professional attitude towards the profession such as the cohort-based model for greater collaboration between teachers as well as the contextual focus which allows teachers to make connections between theoretical knowledge and their practice.

- **Applied practice**

In Canada exploring opportunities to practise, taking risks, and exploring learning in a safe environment, are regarded as critical to professional teacher education. Although this study focuses on applied competence in a DL programme, an evaluation of the underlying principles of the practicums implemented in Canada may provide guidelines for strategies to support applied competence.

The practicum is viewed as an opportunity to experience first-hand the connectedness between theoretical and research-based pedagogical concepts presented in an academic programme, and actual teaching practice (Gambhir et al., 2008, p. 19). Schulz 2005, (as cited by Gambhir, et al., 2008, p. 20) stresses that factors such as supervision, rich feedback, and mentoring provided by an experienced mentor teacher and teacher-educator, lead to deeper learning and development of practice-based competencies. The role of the mentor teacher is viewed as cardinal to the learning process and requires a willingness to work collaboratively with the teacher candidate on planning, instruction, and assessment. The host teacher or mentor has the responsibility to guide the teacher candidate in developing a reflective practice (Gambhir, 2008, p. 19).

Apart from core and fundamental course content, educationists are also exploring effective ways in which programmes can bridge the theory and practice gap through coursework. Gambhir points out that ITE programmes should support student-teachers to apply the theories they learn to their future practice in meaningful, critical, and explicit ways (Gambhir et al., 2008, p. 17).

In Canada guided application of theory in practice is clearly a priority. A deeper investigation of commendable strategies implemented in Canada to support applied competence through reflection on practice and linking theory to practice could indicate a way forward for DL programmes to support applied competence in teachers.

2.4.3.2 Continuing professional development of teachers in Canada

The purpose of continuing teacher professional development in Canada differs considerably from that of the South African Government (South African Department

of Basic Education, 2011a, p. 113; South African Department of Higher Education and Training, 2011, p. 29). In South Africa continuing professional development programmes include formal and initial teacher qualifications (for unqualified teachers) while most of Canada's teachers enter the profession with at least a BEd. These programmes are therefore more focussed on refining skills and knowledge attained during IEP programmes and practicums. According to Gambhir et al*.,* (2008, p. 7) initial teacher education programmes are viewed as the first, foundational stage in the professional development process. Although this step is regarded as decisive in preparing teacher students for ongoing professional development, most provinces have introduced comprehensive induction programmes to support beginner teachers during the first year of teaching. During the induction period the beginner teacher is guided by an experienced teacher or mentor to make the transition into practice which is regarded as the next stage of professional development. Gambhir et al. (2008) state that this period provides an introduction to critical knowledge bases, skills, and practices that assist inexperienced teachers to develop a fundamental understanding of education which includes both effective learning by learners and teachers through a process of knowledge sharing. Teaching competencies that are expected to develop during this period include knowledge and skills to meet the needs of diverse learners, establishing and maintaining effective environments for learning, and negotiating the many non-teaching administrative tasks associated with the role of teaching (Ontario College of Teachers, 2006 as cited by Gambhir et al., 2008). The comprehensive induction programme implemented by some provinces implies that in spite of quality initial teacher education programmes, it is not viewed as sufficient preparation for teaching practice, and that induction programmes form a crucial role in teacher competence.

As is the case in South Korea, teacher remuneration is frequently tied to continuing professional learning. However, intrinsic motivation seems to play a decisive role in the professional development path of teachers in Canada. According to the report by Gambhir et al. (2008, p. 22) the important role of continuing professional development opportunities is to ensure that teachers reach their full potential. This study further determined that teacher advancement in a decentralised education system such as implemented in Canada largely depends on the professional

development level of the teacher. Although completion of professional development activities is not a requirement for promotion or the recertification of teachers, competing for restricted vacancies serves as motivation for teachers to participate in these opportunities. Different jurisdictions recognise different kinds of experiences and levels of education in terms of remuneration, and these criteria are not always transferrable to other jurisdictions which results in uneven and sporadic investment in professional development.

2.4.3.3 Distance learning for teacher professional development in Canada

Gambhir et al. report that ITE is mostly delivered through full-time courses because of the comprehensiveness of the programmes. However, some universities have begun offering alternative models of teacher education which include distance learning. These programmes appear to be context-specific and may accord part-time status to candidates who are changing careers or are in financial need. Community-based distance ITE programmes were designed to serve remote locations or marginalised groups such as the Aboriginal people. Some universities offer partial distance education models with on-line courses and mentoring, as well as seminars in remote communities in the absence of university centres (Gambhir et al., 2008, p. 11). Experienced teachers also enrol for DL programmes for further professional learning (Broad & Evans, 2006, p. 76).

Gambhir et al. (2008, p. 11) also refer to alternative and traditional ITE programmes developed in several provinces to accommodate teachers who have studied or been professionally trained outside of Canada. Many are moving from one type of education system to another and need to negotiate their new professional identity. These specialised programmes focus on bridging knowledge of the profession across contexts.

Strategies which support applied competence in teachers in DL programmes in Canada could not be identified. However, as one of the countries renowned for quality teacher education (Yates, 2007, p. 2), the literature and research on teacher education in Canada yielded noteworthy determinants that designers of DL programmes for the professional development of Foundation Phase teachers could investigate for future programme development.

2.4.4 TEACHER PROFESSIONAL DEVELOPMENT IN CUBA

During 1868 to 1959 intellectuals in Cuba took part in a political struggle, initiating and developing socialist and anti-imperialist thinking which eventually became known as the Revolution (1868-1959), which played a major role in teacher education (Cruz-Taura, 2003, p. 17; Lutjens, 2000; Pumar, 2010, p. 100). There is a clear divide between authors such as Gasperini (2000) and Carnoy (2007) on the one side, who take an appreciative stance towards Cuba's education system and those on the other side of the divide, such as Cruz-Taura (2003), Lutjens (2000), Pumar (2010) and O'Sullivan (2008), who are more critical of Cuba's socialist approach to education. Critics such as Cruz-Taura not only question the reliability of statistics which reflect a successful education system, but also doubt the motives of the government's socialist system in education reform, and the way the behaviourist-based *'rewards and deprivations'* – strategy implemented in Cuba would promote the development of self-regulated citizens to alleviate the social, moral, and cultural situation in the long-term (Cruz-Taura, 2003, pp. 24, 37). Nonetheless, educationists are fascinated by the way Cuba has built a strong education system in spite of poverty and limited resources.

Various authors have investigated the reasons behind the good performance of Cuba's learners across the education spectrum (Carnoy, 2007; Cruz-Taura, 2003; Gasperini, 2000; Gomez, 2008; Legon, 2012; Lutjens, 2000; Pumar, 2010 to name but a few). The South African Minister of Higher Education and Training signed an agreement with his Cuban counterpart in Havana in 2012 aimed at strengthening relations with Cuba in the area of tertiary education, and at the same time encouraging mutual understanding between the people of the two countries (South African Government, 2012). It can therefore be assumed that the South African government acknowledges Cuba's higher education system as exemplary for developing countries such as South Africa. Where applied practice is the focus of this study, a brief description of circumstantial aspects serve as background to how critical elements such as PCK, self-directed learning, as well as applied practice play a role in supporting applied competence in teacher education in Cuba.

Gasperini (2000, p. 22) and Carnoy (2007) declare that despite the poor economy Cuban schools are in many ways comparable to schools in top performing OECD countries. In 2006 UNESCO's Education For All (EFA) development index ranked Cuba's education highest among the 11 selected Latin American and Caribbean countries presented, and as the only Latin American and non-English speaking Caribbean country achieving EFA goals (Johnstone, 2008). Ravsberg (2013) notes that, although the quality of education offered in Cuba has undeniably deteriorated since the economic crisis of the 1990s, 23 years after the collapse of the Soviet Union, all Cubans who wish to have an education can still rely on a classroom and an educator, free of charge.

The Cuban government is still faced with various challenges such as poverty and an acute need for qualified teachers. During the revolution (1868-1959), young teachers underwent a one-year training course after completing ninth grade to fill the teacher shortages. They were then expected to complete their pedagogical training toward a higher education degree (Cruz-Taura, 2003, pp. 4-10). These emergency measures to supplement teacher shortages by employing under qualified teachers strongly resembles the situation in South Africa; after the dismantling of the apartheid regime in 1994 thousands of under - and unqualified teachers were employed in South Africa, especially in rural schools. Many of these under and unqualified practising teachers in South African are attaining qualifications through DL programmes but these programmes do not include guided application of knowledge in practice or performance-based assessment of applied competence (§1.5.3, §1.5.4). The concern for a lack of practice-based learning in Cuba is shared by Cruz-Taura (2003, p. 28). According to recent reports, the current exodus of Cuban teachers from the profession has again compelled government to appoint under-qualified teachers (Ravsberg, 2012, 2013).

Enríquez O´Farrill, a professor and dean of the School of Languages at Enrique José Varona Pedagogical University, reports on teacher education in Cuba. She is however also the English Language Teaching consultant to the Cuban Ministry of Education and this dual role and affiliation with the Ministry may affect her objectivity regarding the government's political agendas in education. However, little recent literature on teacher education in Cuba could be identified in order to verify and

compare different accounts. Although other sources were also consulted to confirm the findings by O'Farrill, the following section on Cuba's teacher education model focuses on O'Farrill's research to explore how critical elements such as PCK, aspects related to self-directed learning, and accommodating student-teacher attitudes and motivation play a role in supporting applied competence in teacher education.

2.4.4.1 Principles for teacher professional development in Cuba

In direct contrast with Canada, Cuba has a highly centralised education system and the ministry of higher education manages policy, content, and learning in practice for both undergraduate and graduate programmes (O'Farrill, 2012, pp. 4, 8). Education on all levels is free and authors concur that education provided by universities is of a high standard (Carnoy, 2007, p. 59; 2014; Gasperini, 2000, p. 1).

According to authors such as Carnoy (2007), Gasperini (2000), O'Farrill (2012), and Brown (2008), Cuban teacher education renders good quality teachers. On the other hand, authors such as Cruz-Taura (2003, pp. 19, 20) and Pumar (2010, pp. 100, 101) question the legitimacy and sustainability of Cuba's socialist teacher education policies and the way these programmes hamper teachers to develop as autonomous self-regulated professionals.

Although teacher education is prioritised, education programmes are unvaryingly influenced by the political agendas of the Cuban Ministry (Gambhir et al., 2008, p. 20). While Gambhir (2008, p. 21) asks questions regarding the long-term impact of the government monopoly on education, she also acknowledge the impressive results achieved by Cuba's education system. After 1991, the Cuban Ministry of Education made it a goal to raise the education standards and teacher education via a five-year course delivered by 13 teaching universities. Access to these institutions is based on test scores of entrance exams, and analysis of applicants' aptitude and interpersonal qualities specific to teaching (O'Farrill, 2012, p. 4; StateUniversity.com, 2013).

- **Pedagogical content knowledge**

Carnoy (2007, p. 40) ascribes the good performance of Cuban learners to Cuban teachers' subject knowledge and how to teach it effectively: "Children with knowledgeable, pedagogical proficient teachers who care deeply about them are bound to learn more in school. And the reason Cuban schools are staffed with effective teachers, we discovered, is that teacher training programmes focus heavily on teaching so that children learn." According to Carnoy it can be assumed that teacher education curricula not only include subject and pedagogical knowledge, but that the delivery enables teachers to apply this knowledge in their classrooms. The professional teacher training programme lasts for five years but students begin their studies in their pre-university year of school.

O'Farrill characterises the curriculum for teacher education as student-centred and reports that curriculum designers aim to consider the students and the types of curricula best suited to their needs (O'Farrill, 2012, p. 12). She affirms that the diversity of the student-teachers in terms of cultural and economic background complicates curriculum design, and that teaching methods may vary depending on the target population; some methods are more appropriate for certain types of student-teachers than others. This approach is also meaningful in the South African context where a diverse population has huge implications for teacher education programme design.

The curriculum for undergraduate studies comprises four components:

- An academic component to learn the contents of the core and optional subjects,
- A practical component related to the teaching practicum which helps to develop teaching skills,
- A research component to develop research skills for the solution of educational problems,
- A university extension component to promote student involvement in cultural, community, and sports activities to contribute to their comprehensive formation as human beings and citizens (O'Farrill, 2012, p. 12).

During the first two years of the programme emphasis is placed on general studies, political, and cultural topics. During the third year of instruction educational psychology is introduced and in the fourth and fifth year of study practice teaching is initiated under the supervision of experienced teachers (O'Farrill, 2012, p. 29; StateUniversity.com, 2013).

Gasperini (2000, p. 11) comments on the effect of the closed nature of the Cuban education system on teacher education curricula. Little consideration is given to educationists who are acknowledged in the western world for their groundwork in learning theory such as Montessori, Dewey, Piaget, and Bloom while emphasis is placed on traditional Cuban and Latin American authors such as Marti and Bolivar as well as thinkers from the former USSR such as Vygotsky and Gorki. O'Farril (2012, p. 8). Although the valuable contribution made by Vygotsky's social constructivist theory to the social sciences is not negated, Gasperini (2000, p. 8) confirms that social science curricula have been overshadowed for four decades by Marxist-Leninist orthodoxy. It can therefore be assumed that such a narrow view of learning had considerable impact on teacher education curricula offered at universities. Cruz-Taura suggests that all curricula, including teacher training programmes, should be freed of Marxist-Leninist thought and jargon. She recommends that teacher training also includes new content and methods because Cuban teachers would need balanced professional training to teach the new curricula in an informed way (Cruz-Taura, 2003, p. 36).

- **Self-directed learning**

Although Gasperini (2000, p. 1) stresses the importance of a transparent system of accountability and strategies to develop a culture of professionalism amongst teachers, little evidence could be found of programme design features aimed at self-directed learning by student-teachers. O'Farrill (2012, pp. 36, 37) confirms the absence of the latter and suggests that more self-directed strategies such as action research, teaching journals, and teacher development groups be included as part of teacher education in Cuba to support *self-development and reflection*.

According to Cruz-Taura (2003, p. 27) a lack of decision-making independence to liberalise content and methods is the direct result of constraints imposed by Marxist

pedagogy which is rigidly followed in institutions. Such an approach to teacher education leaves little room for the development of self-directed learning, critical thinking, and social problem solving. Cruz-Taura contradicts the account of Gasperini's (2000, p. 2) of the way teacher education acknowledges teacher status and morale through a transparent system of accountability and developing a culture of professionalism based on own initiative. To state her case, Cruz-Taura (2003) cites a Cuban activist, Valdés (1998), who writes in an electronic publication *Vitral:*

> Cubans cannot choose the philosophical position, the pedagogical methods, the religious orientation, or the type of school that we want for our children. In exchange for mass access, we have given up our personal responsibility to educate. In exchange for free access to instruction, we have not exercised the freedom to choose the type of education. [ ]. In exchange for no expenses we have disregarded quality. Free services exact a price in Cuba: be grateful and faithful. [ ] assistance that creates dependency is not liberating but enchaining. (p. 18)

Reflective learning

Although mention is made by Cuban educationists of the value of reflection in as reported in international literature, little evidence could be found of strategies to support reflective learning – either in school or teacher education contexts. According to Cruz-Taura, (2003, p. 19) the authoritarian approach to education in Cuba does not educate 'persons' but creates repeating 'machines' and diminishes people's abilities to take responsibility for their own choices. O'Farrill (2012, p. 2) also identifies the accommodation of reflection in Cuban teacher education programmes as a significant challenge.

Pumar (2010, p. 98) bases his reservations in terms of sustainable outcomes in Cuba's education system on the absence of self-regulated strategies such as critical and reflective learning skills. Educationists in Cuba such as O'Farill and Pumar are progressively calling for a more reflective approach to learning to empower the nation to make informed choices. According to Pumar (2010, p. 98) the already mentioned evaluations in 2006 by UNESCO's EFA development index measured student performance in such basic skills as reading and math and although these are essential academic subjects, they are poor predictors of

critical thinking skills and other more comprehensive academic requirements in the social sciences and humanities. Pumar (2010, p. 98) therefore questions whether Cuban student-teachers are supported to develop the relevant critical thinking skills required for reflective practice and whether they will be able to transfer such skills and knowledge to learners in schools: “While Cuban students might perform consistently well in the more technical subjects, comparable levels of achievement are not evident in other more interpretative, but not less rigorous, academic fields.”

While O’Farrill (2012, p. 24) refers to the importance of developing reflective practice through teacher education programmes, she indicates that this is still an ideal that needs to be pursued in Cuban education. She calls for programmes inspire reflection on the relation between theory and practice, as well as on the teaching experience.

It thus seems that although educationists are voicing concerns regarding the absence of reflective learning in Cuba’s teacher education, there is still an expectation that student-teachers should act according to the prescribed curricula.

- **Inquiry based learning**

In Cuba’s education system disparity exists regarding the way inquiry-based learning is implemented in teacher education programmes. Gasperini (2000, p. 9) states that every teacher is expected to carry out applied research on ways to improve learning achievement and systemise pedagogical experience. This implies that the teacher education curriculum aims to prepare student-teachers to carry out classroom studies on how to address student problems. According to Gasperini practising teachers present their best work on innovative teaching practices at *municipal education conferences* or *Pedogogia*. Gasperini adds that moral and material incentives are provided to teachers who present the best research. Although O’Farrill (2012, pp. 12, 22) reports on the inclusion of a research component in the teacher education curriculum aimed to equip teachers to find solutions to educational problems, she admits that the research skills of student-teachers is one of the areas that needs to be developed. She

suggests that teachers should be motivated to develop a healthy questioning attitude toward practice in the teaching profession (Taghilou, 2007, as cited by O'Farrill, 2012, p. 27). This statement concurs with the appeal of Cruz-Taura (2003, p. 27) for a move away from the fixed curricula and pedagogy as prescribed by the Marxist government:

> If Cubans could research their past and teach it to their children without being bound to one official interpretation, it would be the clear sign that Cubans were being educated to think and make choices for the island nation. (p. 17)

- **Professional attitude and motivation**

While dated sources report on a strong and motivated teacher force (Gasperini, 2000), recent reports show that Cuba's socialist approach to education is taking its toll. Ravsberg (2012) reports that 14,000 teachers left the profession during 2011 with medical leave certificates or requested self-employment licenses. This author also notes that while in 2012 another 4,000 teachers gave up teaching without any excuse, statistics show that 80 per cent of the teaching posts are vacant while untrained practitioners referred to as *instant teachers* are employed to replace nearly 13,000 teachers who left the practice. Such an adverse state in the education sector will also have a negative effect on prospective teachers' morale and motivation.

Ravsberg (2013) echoes previous critique by Cruz-Taura (2003, p. 19) with regards to the negative impact of the paternalistic approach to education maintained by the government on the development of teachers as autonomous professionals. According to this author such an approach does not recognise the critical role of teacher autonomy in teacher motivation and the development of a positive attitude towards the profession. Teachers are required to repeat ideas and attitudes identical to those of teachers who came before them. This continuous stronghold of the government on education and teachers is confirmed in recent critique (Ravsberg, 2013). Cruz-Taura warns that although a paternalistic and manipulative education system provides security, it creates uncertainty for the future; when teachers need to make moral decisions based on their own discretion without instruction from the top, they do not have the necessary skills. This results in indecision and corruption.

Gomez (2008, p. 2) points out that the people of Cuba developed a set of values and attitudes shaped by the formal indoctrination that defined their daily behaviour in order to align their own wants and needs to the restrictions imposed by the state Cruz-Taura (2003, p. 33) highlights the role of anxiety when making autonomous decisions when dealing with a transition from the paternalism of a totalitarian system to an open society where the consequences of success or failure revert to the individual. Liberating education in Cuba may thus be viewed as a risk if teachers are not equipped to make informed choices. This author proposes support for the development of a more autonomous teaching corps that delivers quality teaching based on intrinsic motivation: “Only he who is free to choose can accept responsibility for his actions. It lets us discover the richness of diversity, and we respect it as a guarantee that we appreciate the rights of each individual [sic].” (Cruz-Taura, 2003, p. 19).

In contradiction to the view of Cruz-Taura and Ravsberg, accentuating the negative impact of the paternalistic approach of the Marxist government on all levels of education in Cuba, O’Farrill (2012, p. 23) refers to the comprehensive preparation of the teacher as a professional and as a human being. According to O’Farrill teachers are not only supported in the acquisition of new knowledge, but also in the developing of skills, values, and attitudes required to perform their tasks effectively in the classroom, school, and wider community. However, O’Farrill (2012, p. 24) admits that much should still be done to enhance teachers’ commitment to quality education and that teacher development programmes should be more flexible and contextualised. Training strategies should meet the needs of teachers, their potential, and the demands of the teaching context. O’Farrill points out that preparing teachers for the 21st century requires teacher education to accommodate personal factors and that training strategies should foster greater active involvement in the professional learning environment based on dialogue.

- **Applied practice**

Gasperini (2000, p. 10) affirms that practising teachers are continuously evaluated in order to provide useful information to improve teaching practice through action research and life-long learning in Cuba. O´Farrill (2012, p. 18), views practicums (or

practice teaching) as the core of the initial teacher education programme and adds that the practicum integrates all aspects of the programme to bridge the gap between theory and practice.

O'Farrill (2012, p. 12) reports that connecting theory and practice is still a challenge in teacher education programmes. The practicum model implemented in Cuba implies that the school and community play a leading role in initial training of teachers. The framework is based on the principle that a student-teacher is trained *in* the school, *by* the school, and *for* the school. While the training institution determines teacher training, the practicum schools have become a micro-university by acting as laboratories (O'Farrill, 2012, p. 17). Exploring this approach will provide insight into the viability of such a model to support the applied competence of teachers enrolled for DL programmes in South Africa.

In Cuba the student-teacher supervision during the practicum is a shared responsibility between the university and the practicum school. While the associate teacher assumes daily responsibility, the university lecturer takes overall charge and is finally accountable for what happens in the practicum. The supervisor (both an associate teacher and faculty member) is a guide, mentor, counsellor, supervisor, and an evaluator. Supervisors also need to observe teacher candidates' professional and ethical behaviour, regularly provide assessments of teaching performances, highlight strengths, discuss weaknesses, make suggestions for improvement, and evaluate and report on student performance (O'Farrill, 2012, p. 19). This model resembles teacher education models in Finland (§2.4.1) as well as Canada (§2.4.3) which rely on the input of a qualified mentor to guide student-teachers' application of skills and knowledge in practice. Exploring ways to include mentoring by expert teachers in a DL programme in the South Africa will yield information with regards to the value of and preconditions for a mentoring model in supporting applied competence of teachers.

According to O'Farril's documentation, the Cuban model for teacher education is viewed as a lifelong journey and places a strong emphasis on professionalism that is evidenced by a strong practical component as teachers are equipped with the necessary skills that will enable them to face the responsibilities of the classroom and the school (O'Farrill, 2012, p. 20). After an investigation into Cuba's successful

education system, Carnoy (quoted by O'Sullivan, 2008, p. 115) documents four lessons to be learned from Cuba. One of these lessons entails that, although curriculum matters, its successful implementation depends on teacher capacity. In spite of diverse opinions on Cuba's successful education, statistics do show that teachers are attaining good classroom results. Although no evaluation study could be found to confirm the sustainability of these learning outcomes and long-term educational success of a behaviourist approach to teacher education, teachers are apparently well equipped to support learning.

2.4.4.2 Continuing professional development of teachers in Cuba

Career advancement of teachers in Cuba depends primarily on positive evaluations of teachers' applied competence. Gasperini (2000, p. 9) and O'Farrill (2012, p. 19) refer to institutional support provided to schools to promote professional development among teachers in the form of a mentor (metodologo) who works with teachers to support them in different subjects. While Gasperini (2000, p. 12) and Carnoy (2007, p. 40) applaud the mentor system as effective support for beginning teachers as well as on-going professional development of teachers, Cruz-Taura argues that the mentor's task is to establish government control over the ideological preferences of teachers and students and not primarily aimed at supporting applied competence of teachers (Cruz-Taura, 2003, p. 31).

O'Farill comments on the shortage in experienced teachers who are equipped to act as mentors (O'Farrill, 2012, p. 39). Similar barriers are experienced in the SA context, where especially schools in rural areas are identified as dysfunctional and expert teachers to act as mentors may not be available. An analyses done in the last few years indicating that approximately 80 per cent of South African schools are essentially dysfunctional (Pretorius, 2014, p. 51), has implications for the professional development of these teachers. Where DL programmes are often the only way for unqualified teachers practicing in rural areas to attain a qualification, innovative ways should therefore be devised to guide these student-teachers' in applied practice.

Carnoy (2007, p. 41) as well as Gasperini (2000, pp. 10-13) refers to the role of support offered to schools with regards to the continuous training and monitoring of teachers as one of the main factors contributing to the quality of education. Gasperini

also reports that continuous evaluation of teachers' performance is a part of teachers' professional development which includes various role players in the education process as well as the teacher working group *(colectivo)*. Cuban Universities are also involved in teacher evaluations whereby programmes can be adapted to the realities of schools.

Gasperini (2000, p. 9) emphasises the effectiveness of social learning in Cuba within a community of teachers which promotes teamwork and the sharing of experience. Clusters of teachers working in the same field meet periodically to discuss teaching and assessment methods and the educational climate of the school, produce learning materials, adapt the curriculum to local needs, and exchange experiences. Working in groups they develop a 'bank of problems' and possible solutions. In schools every programme has a methodological guidebook for teachers of each grade which provides examples of good lessons and guidance on how to teach different learning units. Working groups or the establishing of communities of practice could also greatly benefit practising teachers enrolled in a DL programme in South Africa where teachers often feel isolated; learning *with* and *from* experienced colleagues could support the applied competence of all involved.

2.4.4.3 Distance learning for teacher professional development in Cuba

Cuban teachers can register for DL courses to qualify for permanent teaching certificates, and to prepare themselves for new curricula (Cruz-Taura, 2003, p. 36), while DL is also implemented to provide appointed teachers who lack a university degree with the opportunity to attain the qualification. Gasperini refers to the difference in time-frame between pre-service (five years) and in-service courses which takes six years, but does not elaborate on the structure or purpose of these DL programmes (Gasperini, 2000, p. 9). Various authors comment on the lack of access to technology and the implementation of ICT for learning and suggestions are made that technology be implemented in teacher education programmes (Cruz-Taura, 2003, p. 28; O'Farrill, 2012, p. 27). Cruz-Taura refers to the lack of funds curtailing the implementation of technology enhanced education which may be one of the reasons DL is not utilised more for teacher education.

Although Cuba's success story holds various lessons to be learnt – especially by developing countries – the long-term effect of a socialist approach on education, the motivation and the ability of teachers to act in a responsible and informed way in the best interest of the learners, should be researched to determine the sustainability of positive short-term outcomes in a centralised and socialist education system. According to Ravsberg (2012) the quality of education in Cuba is deteriorating and the biggest challenge faced by Cuba's educational system is to remain sustainable without ceasing to be free and accessible to everyone.

2.4.5 Lessons learned regarding applied competence in teacher professional development in the four countries

The literature on the four countries which are rated as top performers with regards to teacher education were scrutinised for factors that may have contributed to their exceptional achievements. Specific attention was given to the way the teacher education programmes in these countries accommodate elements identified as contributing towards applied competence. These elements include PCK, self-directed strategies such as reflective and inquiry-based learning, and aspects related to professional attitude and opportunity for guided applied practice, as summarised in the following table:

Table 2.1: Lessons learned regarding applied competence in teacher professional development in the four countries

	FINLAND	SOUTH KOREA	CANADA	CUBA
Educational policy/aim	Quality, efficiency, equity and internationalisation	Education for financial and social success	Capacity building in a climate of relative trust and mutual respect	Seeks to engender the new socialist man, political aims, based on Marxism-Leninism
PCK	Curricula aligning and refining across HEIs to ensure all programmes equip teachers with the critical PCK to serve as basis for effective teaching; Three main areas: • theory of education • pedagogical content knowledge • subject didactics and practice	Pedagogy, ethics, and information management ability; Class management and counselling skills; Subject-area content; Pedagogical theory; 30% generic component 70%: subject major	Theoretical content aims to equip student-teachers with knowledge of the learner, subject matter, and the school curriculum; Pedagogy regarding principles and practice of teaching; Context of teaching foundations of teaching; Inclusive practices	Fixed prescribed subject knowledge and pedagogical knowledge: • *Academic component* • *Practical component* • *Research component* • *Community service* Closed teacher education curriculum - social science curricula overshadowed by Marxist-Leninist orthodoxy
Self-directed strategies	Interrelatedness between inquiry based learning, thinking processes (reflective learning), and self-directed learning; Collaboration amongst teachers contributes to sustaining a community of practice	Limited autonomy and extrinsically motivated learning and professional development hampers self-directed teaching; Curriculum-based and test-driven approach limits educating the *whole person*	Focus on learning to learn, preparation for work, responsible citizenship Instilling values that underpin purposes of education in Canada; Self-directed and self-regulated learning; *Whole teacher* approach - includes reflective practice, critical inquiry, engagement in learning communities	Absence of self-directed learning strategies and development of self-directed learning, critical thinking and social problem solving; Plea for more autonomy and balanced professional training to enable teachers to teach new curriculum in an informed way and making own choices based on critical thinking and reflection

Inquiry	Inquiry is the major focus of learning; self-directed learning through research-based components; Curriculum development, supported by scientific knowledge and cognitive skills grounded in research; Teachers develop critical research skills before entering the profession – a Master's degree; Assessment is used to cultivate students' active learning skills by asking open-ended questions	Self-directed inquiry in the form of research to acquire the necessary knowledge for teaching is encouraged; Teachers' promotions are based on their research achievement; No groundwork done in schools to prepare student-teachers for inquiry based learning - schools based on theory-focussed and test-orientated environment may hamper elementary student-teachers in implementation of inquiry-based teaching	Focus is on collaborative, case-study, and inquiry-based pedagogy that engages student-teachers in reflective praxis; Inquiry serves to link knowledge content to practice and equips teachers with the skills needed for on- going professional development	Research skills of student-teachers are identified as an area that needs to be developed; Prepares student-teachers to carry out classroom studies on how to address student problems; Incentives are provided to teachers presenting the best research
	FINLAND	**SOUTH KOREA**	**CANADA**	**CUBA**
Reflection	Reflective learning to support the development of reflective practice; *Thinking curriculum* Teachers responsible for curriculum and assessment, as well as experimentation with and improvement of teaching methods which requires a reflective practice; Assessment of student-teachers' progress is based on guiding and encouraging students' own reflection and self-assessment	Little evidence in literature; Strategies such as journaling, clinical interviews, dialogues, narrative inquiry, observational learning and reflective teaching is explored to support the development of a more reflective practice; Teacher-educators should be equipped to guide teacher students in critical responsiveness and consequent behaviour to supply in the diverse needs of learners in schools	Student-teacher are asked to critically reflect on their ideas and question assumptions about teaching and the profession; Reflection on practice – important role of the host teacher is to promote reflection by teacher- students in order to think about practice through questioning and feedback	Negative long-term effects of a socialist system on education; Repression of critical thought and adverse effects of a militaristic neo-liberalism approach on the development of critical reflection skills of student-teachers; Sustainable outcomes of Cuba's education are hampered by the absence of self-regulated strategies such as critical and reflective learning skills as part of curricula

Attitude and motivation	Teachers currently enjoy great respect and trust; Regarded as professionals with autonomy to manage their practice in responsible ways and building trust among teachers; Education programmes instil in teachers a devotion to the improvement of classroom practice, the school as a whole, as well as community service	Extrinsic motivation by authorities originates from the historical background of Korea; The College Scholastic Ability Test includes aptitude and character evaluation of applicants	Student applicants may be required to provide proof of propensity to teach; Positive impact of a cohort-based model for teacher education on teacher motivation and attitude; Relationships through collaboration contribute to positive affective programme outcomes such as heightened motivational levels	Socialist approach in Cuba: social justice and self-sacrifice for national dream damages teacher autonomy; Extrinsic motivation – *'rewards and deprivations'* strategy Monitored ideology-based curricula, course content, and student learning experiences are affected by limiting mandate; Inadequate learning processes decrease student learning potential and motivation; Prescribed instruction aim to teach citizens how to repeat and continue ideas and attitudes without member participation; Aptitude test for applicants
	FINLAND	**SOUTH KOREA**	**CANADA**	**CUBA**
Guided applied practice	Teachers' strong competence and preparedness create the prerequisite for professional autonomy that makes teaching a valued career; Practical competence is supported through progressive phases over the five-year programme; Practicums, seminars, and small- group classes in which students practise basic teaching skills in front of their peers	Practicums, pre- and post-employment training to prepare teachers for practice; Continuous in-service teaching support plan assists beginning teachers to acquire the necessary practical skills after employment	Practicums regarded as critical to professional teacher education; Collaboration between HEI, mentor, school, and student; Opportunity for collaborative research and learning for novice teachers, support teacher, and faculty; Connectedness between theoretical and research-based pedagogical concepts and teaching practice; Comprehensive mentoring model: mentor leads student to deeper learning, applied competence, and reflective critical practice, linking theory and research to practice	Cuba's biggest education asset: student-teacher trained *in* the school, *by* the school and *for* the school ; Partnership with schools in the practical training of teachers; The integration of academic and vocational training supports student-teachers to link course work to real-world application, deepen interest, and prepare them for practice; School becomes a micro-university by acting as laboratories for the practicum

	FINLAND	SOUTH KOREA	CANADA	CUBA
Professional development programmes	Regular collaboration among teachers on issues of instruction supports professional development; Not separated from practice - teachers learning *in* practice as well as learning f*rom* practice; Teachers are equipped and motivated to evaluate, regulate, and improve own teaching through continuous reflection and inquiry – individually or cooperatively	Pre-employment (two weeks) as well as post-employment training (six months) for beginner teachers; In-service professional development focuses on promotion rather than on raising teacher competence	Mostly focussed on refining skills and knowledge attained during IEP and the practicum; Comprehensive induction programme to support beginner teachers; Opportunity for school-focused research: teachers study and evaluate their own teaching strategies and share findings	Support offered to schools for continuous training and monitoring of teachers; Positive impact of mentoring system on the quality of teaching reported; Programmes adapted to the realities of schools; Social learning within a community of teachers which promotes teamwork and sharing of experience
	FINLAND	**SOUTH KOREA**	**CANADA**	**CUBA**
Distance learning	Little reference to DL - view teaching as a complex and highly professional occupation requiring rigorous support and monitoring during the development of relevant PCK and practical skills ; Online support during practicums; DL for further professional development and career changes	DL mostly focussed on ongoing professional development of teachers; Viability of DL to meet professional development needs is questioned	DL mostly used for transitioning from careers or because of financial restraints ; Community-based distance ITE programmes to serve remote locations or marginalised groups (e.g. Aboriginal people); Partial DL models with on-line courses and mentoring	DL does not seem to be utilised for initial teacher education; DL to qualify for permanent teaching certificates and for unqualified teachers (maestros emergentes); Lack of access to technology and the implementation of ICT for learning

The aim of the literature study was not to evaluate the teacher education programmes but to identify strategies for applied practice in a DL programme for Foundation Phase teachers in a developing context.

Although the literature indicates differences regarding the focus, terminology, and organising of ***PCK***, all four countries include knowledge on theory of education, pedagogical theory, subject knowledge, and subject didactics as part of their academic component. However, the way in which the intended curriculum concurs with the enacted curriculum greatly depends on determinants such as political framework and the context in which the curriculum is implemented, the design and delivery of the teacher education programme, the accommodation of reflection and inquiry as self-directed learning skills, guided application of theory in practice, and support for the development of a professional attitude.

The way student-teachers are supported to develop ***self-directed learning strategies*** greatly determines *what* they learn, *how* they learn and if learning will be transferred to the teaching practice in a meaningful way. While Finland and Canada were found to support self-directedness by acknowledging reflection and inquiry as a critical part of teacher education, the literature on teacher education in South Korea and Cuba reveals to a more prescriptive approach where teachers have less autonomy. The test-driven approach in South Korea is criticised by various authors (Kim and Han, 2002; Kim and Chin, 2011; Seong et al., 2009). Gambhir et al. (2008, p. 17) refer to the development of teachers in Canada as developing the *whole teacher* by including reflective practice and critical inquiry. Such competencies equip teachers as advocates of change, teachers who can think, plan, and act beyond the requirements of the prescribed curriculum and task agreements. In Korea Lee (2005) explored the use of journals as a way to support reflections which could also be investigated as a way to support reflection in a DL programme. Teacher education models in all four countries implement collaborative work in some form or other, where teachers learn *from* and *with* each other. The ability to collaborate with peers and the propensity to learn from others are regarded as important characteristics of a self-directed teacher, and ways should be explored to effectively incorporate social learning as part of DL programme design.

While Cuba's teachers perform well viewed in the light of their socio-economic circumstances, educationists question the sustainability of a socialist system which also forms the basis for teacher education. If teachers are not supported to develop as autonomous professionals who are able to make informed choices, it may have long-term effects on education. Critics of the Cuban teacher education programme argue that teachers need more autonomy to make independent decisions and liberalise content and methods. There seems to be a relationship between teacher autonomy and teacher **attitude and motivation** which also influences applied competence. The literature frequently refers to the roles of respect and trust in teacher morale. This indicates that affective factors play an important role in the way a student-teacher will be motivated to master programme outcomes and the way knowledge and skills will be implemented in practice.

While the literature on Finland and Canada indicate that teachers are motivated by intrinsic factors such as devotion to improved classroom practice, mention is made to the way Korean and Cuban authorities rely on extrinsic incentives to enhance the quality of education. Such strategies also have an impact on teacher preparation and the way student-teachers view teaching practice. Teacher education programmes should therefore instil commitment and a desire to contribute to the quality of education.

Guided applied practice is viewed as a critical prerequisite for applied competence and a way to support the connectedness between theory and practice. All four countries implement practicums to support the development of practical teaching skills. Although the structure of practice-based components in DL programmes will differ from ITE programmes, small group classes where student-teachers practise basic teaching skills in front of peers (Finland), as well as pre- and post- employment programmes (South Korea), could be investigated as strategies to support applied competence in a DL programme.

In Canada the practicum is viewed as an opportunity for research where the student-teacher, support-teacher, and teacher-educator collaborate in action research projects. Research findings are used to improve teacher education programmes. The mentor/support teacher also has the responsibility to guide the teacher student in the development of reflective practice.

Most countries view the ***continuing professional development*** of teachers as an opportunity to refine skills and knowledge attained during ITE. The role of a community of practice in the further professional development of teachers as well as the mentor model should be explored as a means to support the development of applied competence of practicing student-teachers enrolled for DL programmes.

As this study focuses on strategies to support applied competence in qualified teachers enrolled in a ***DL programme,*** the literature was also scrutinised for ways in which the four countries implement DL for teacher education. The practical disposition of especially Foundation Phase teaching poses various challenges to DL programmes for teacher education. Although Korea is viewed as one of the most advanced technological countries, little literature was found on effective DL for teacher education in this country. DL is used in Cuba for the education of practising unqualified teachers. It is however noted, that the lack of access to ICT hampers the effective delivery of teacher education programmes via DL in this country. The other three countries mostly use DL for the continuing professional development of qualified teachers, where financial restraints necessitates DL (Canada), or where persons need additional training to effect career changes.

A study by Meriläinen et al*.* (2013) report on online support during a practicum component implemented in Finland. They found that the use of ICT not only provides opportunities for continuous feedback and support to the student-teacher, but that recordings of the practical lessons also provide meaningful learning opportunities for other students. DL is implemented more and more for teacher education because it is an economically viable way to provide opportunities to acquire accredited qualifications, especially in developing countries. Investigating such design features may indicate ways to support South African teachers in developing applied competence through a DL programme.

2.5 CHAPTER SUMMARY

Chapter two reported on aspects of teacher professional development found in international and national studies. The literature defining teacher professional development as well as national and international policies and criteria for teacher professional development was also explored. Works reflecting the education of

countries identified as leaders in teacher education, namely Finland, Canada, South Korea, and Cuba were scrutinised and compared for correlating traits in teacher education programmes with specific focus on the way these programmes support the development of relevant PCK, self-directedness and a professional attitude as well as the way these programmes guide applied practice.

Although the literature also revealed aspects that may negatively impact the applied competence of teachers, there is general consensus on elements of applied competence. Various sources confirm that teacher professional development should equip teachers with the necessary *pedagogical content knowledge* and practical skills to meet all the requirements of professional teaching. Teacher education programmes further need to instil critical *self-regulated skills* such as reflective and inquiry-based learning as a mechanism to ensure that teachers are able to sustain quality teaching and learning through autonomous classroom practice. The development of *professional values and attitudes* as outcomes of teacher education programmes serves as intrinsic motivation that drives self-directed teaching and consequent quality learning in schools. The literature further confirms the importance of guided application of new knowledge in practice as a critical element in all teacher education programmes. Recognition and accommodation of these elements in the target teacher population will further support the development of applied competence as a programme outcome.

Countries world-wide, but specifically developing countries such as South Africa, are relying more and more on distance learning for teacher education. It is thus imperative that elements of quality teacher education should be accommodated in DL programmes to ensure professional competence. While the transfer of knowledge is relatively accomplishable through DL by means of text and media such as ICT, support for the development of applied competence in student-teachers pose a challenge to DL programme design. To ensure the effectiveness of DL teacher education programmes in a country where education is under severe pressure is problematic. Chapter three thus further explores the literature on the elements of applied competence, the role of these elements in the development of applied competence, and ways to include these critical elements in a DL programme for Foundation Phase teachers.

CHAPTER 3

APPLIED COMPETENCE IN THE PROFESSIONAL DEVELOPMENT OF FOUNDATION PHASE TEACHERS IN A DISTANCE LEARNING PROGRAMME

3.1 INTRODUCTION

Chapter two reported on aspects of teacher professional development as found in the relevant literature. National and international policies were explored to identify critical elements of quality teacher professional development that support applied competence as programme outcome. The literature revealed that supporting the development of relevant PCK, self-directed competencies such as reflective and inquiry based learning, opportunity for guided application of knowledge in practice, and a professional attitude play a critical role in applied competence as outcome of teacher education programmes. The literature was also explored to determine how these elements are accommodated and prioritised in teacher education programmes in countries rated as top performers in teacher education. The practical disposition of teaching, especially Foundation Phase teaching, poses challenges to DL programme design for teacher education. While strategies to support applied competence in a DL programme for Foundation Phase teachers is the focus of this study, Chapter three firstly reports on the identified elements of effective teacher education programmes. Ways to include these elements in a DL programme for Foundation Phase teachers practising in a developing context in South Africa is also researched to determine strategies that support the development of applied competence as programme outcome.

3.2 DEFINING CORE ELEMENTS OF APPLIED COMPETENCE

The literature concurs regarding the following core elements as critical requirements of programmes aimed to support the development of applied teaching competence (§1.5.1; §2.4):

- relevant pedagogical content knowledge,
- self-directed skills namely reflection and inquiry,
- development of a professional attitude, and
- guided applied practice.

Together with the profile and teaching context of the teacher enrolled in a professional development programme, these elements are inextricably interrelated in the way they individually and collectively play a role in the development of applied competence. This interrelatedness is illustrated in Fig 3.1.

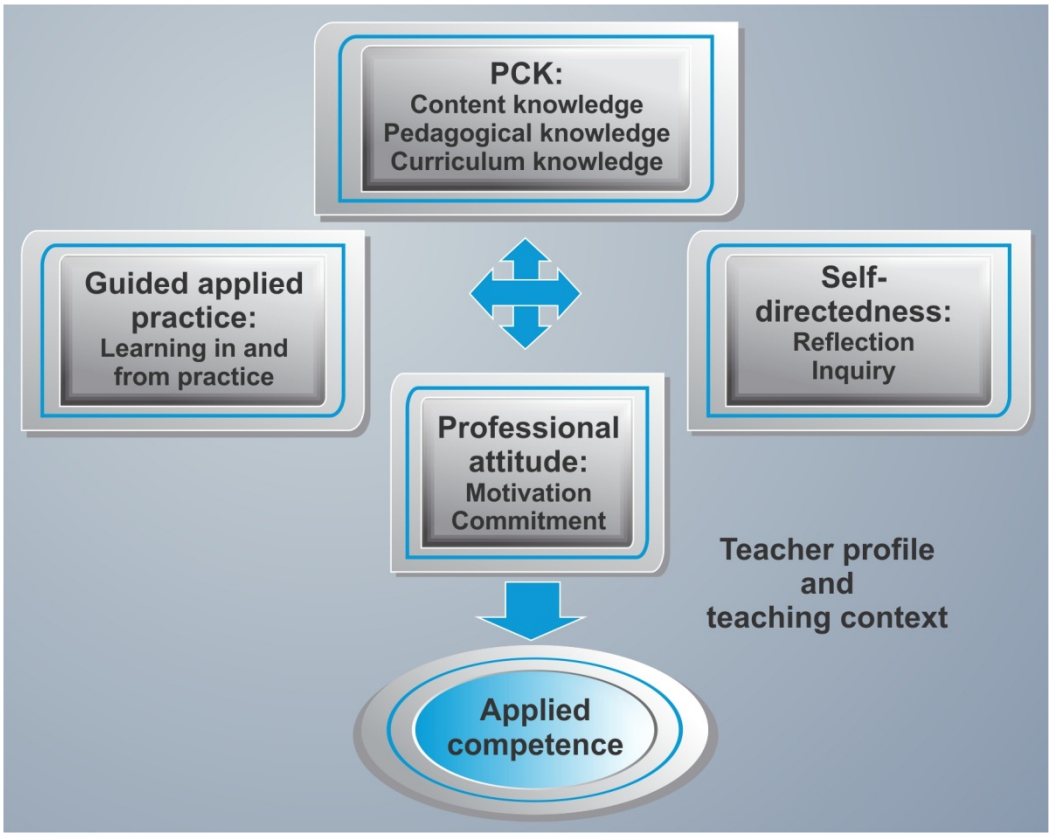

Fig. 3.1: Interrelatedness of elements of applied competence within the teaching context

The literature confirms the interrelatedness of all these elements in teacher education (Opfer & Pedder, 2011, p. 388; Richter et al., 2010, p. 116; Shulman, 2005; Shulman and Shulman, 2004, p. 1; Sparks, 2002, p. 4 of Chapter 1). A holistic approach was

therefore required; as no single element could be discussed without taking into account the effects of the other elements as well. For instance, teacher attitude and motivation as well as contextual factors such as socio-economic background of the school where new knowledge is to be applied, will determine *if* and *how* teachers master and apply PCK in a meaningful way. The way in which programme design features accommodate guided application of PCK in practice will also play a critical role in the way teachers are supported to link theory and practice in their teaching contexts.

In his report on an investigation by NEEDU into the state of Foundation Phase education in South Africa, Taylor (2013) also refers to the interrelatedness of the mentioned elements when he sketches a scenario where a teacher lacks applied competence:

> If a teacher does not construct tasks to elicit higher order comprehension and problem- solving processes in her learners in class (teacher competence), it must be because she does not understand how they function in developing cognitive capacity (PCK), which in turn is certain to arise if she does not herself undertake complex problem-solving activities or apply the perspectives of inference, interpretation and evaluation (disciplinary knowledge) to her own appreciation of her subject. In other words, sound subject knowledge is a necessary (though not sufficient) condition for effective teaching. http://www.politicsweb.co.za

The teaching profile and teaching context also play a role in sustaining applied competence as programme outcome and are discussed in §3.3.

3.2.1 Pedagogical content knowledge

Teacher professional development implies the meaningful integration of different kinds of knowledge including subject specific knowledge, knowledge of the curriculum, and pedagogical knowledge. The latter necessitates knowledge of effective teaching strategies to facilitate meaningful learning (§2.2.1.3).

The search for excellence in relation to teacher learning has led educationists to consider what a teacher ought to know and be able to do as an outcome of teacher

education programmes. Qualified teachers are frequently criticised for being under-prepared in the knowledge content of the subjects they teach as well as knowledge of teaching strategies that take into account the diversity and developmental levels of their learners. The National Education Evaluation and Development Unit (NEEDU) (2013, p. 8) also reports that the poor subject knowledge on the part of educators at every level of the system which is a curtailment to learning in Foundation Phase classrooms across the country. The South African government agrees that this is a serious matter that requires urgent attention (South African Department of Basic Education, 2011a, p. 108).

A definition posited by Shulman (1987) is still regarded as a comprehensive view of PCK:

> Pedagogical content knowledge identifies the distinctive bodies of knowledge for teaching. It represents the blending of content and pedagogy into an understanding of how particular topics, problems or issues are organized, represented, and adapted to the diverse interests and abilities of learners, and presented for instruction. Pedagogical content knowledge is the category most likely to distinguish the understanding of the content specialist from that of the pedagogue. (p. 8)

Reference to the ability to adapt content and pedagogical skills according to the diverse learning needs of learners highlights the dependence of PCK on critical reflection in action. Shulman (1987, p. 8) also identifies knowledge of classroom management and organisation, the school curriculum, teaching and learning materials, and knowledge of learners and their characteristics, as essential to PCK. He adds that knowledge of the educational context which includes the character of communities and cultures, as well as knowledge of educational ends, purposes, values and their philosophical and historical grounds, should form part of all teachers' knowledge base.

Although the value of a learner-centred classroom, especially in the Foundation Phase cannot be denied, the DoE acknowledges that a teacher cannot teach something they themselves do not know, and that re-emphasis on the importance of

content knowledge is needed at this time (South African Department of Basic Education, 2011a, p. 108; South African Department of Education, 2005b, p. 13). The MRTEQ (South African Department of Higher Education and Training, 2011, p. 10) endeavours to bring the interconnectedness between different types of knowledge and practices into the foreground, and envisions a teacher who can draw reflectively from integrated and applied knowledge to work flexibly and effectively in a variety of contexts.

Subject knowledge and knowledge regarding pedagogy inform each other and together form part of the critical determinants of applied competence. Although a balance between subject knowledge and pedagogical knowledge is pronounced by various educationists (Gabela, 2004, p. 57; Shulman, 1987, p. 8), each of these aspects of PCK, as well as ways to support the development of PCK in teacher education, are explored in detail.

3.2.1.1 Subject knowledge

Shulman (1987, p. 8) strongly emphasises teachers' subject matter proficiency or content knowledge as a prerequisite for the development of pedagogical content knowledge and instructional expertise. However in the developed context, technology and the increasing technological capabilities of learners have changed the role of teachers from source of knowledge to facilitators in the process of knowledge generation by learners themselves (Martinet et al., 2001, p. 7).This new role of the teacher not only requires a new approach to teaching and learning but also a new understanding of the subject content, how learners could participate in order to explore content, and ways in which to support inquiries from the learners. Although this may not be true in a less developed context, such as schools situated in rural areas where learners do not have access to technology and other resources, the view of the teacher as a co-learner implies an inquiry-based approach to practice; in other words, teachers need to stay attuned to learners' knowledge needs (§3.2.2.2).

The MRTEQ policy (South African Department of Higher Education and Training, 2011, p. 6) emphasises that *integrated and applied competence* is the primary means of assessing if teacher education programmes comply with the requirements

of a learning programme. According to Welch and Gultig (2002, p. 20), integrated and applied competence as an outcome of teacher education implies that:

- A teacher's subject knowledge is central to their competence, and
- Subject competence ('knowing that') can only validly be demonstrated in practice in the way that teachers teach (a 'knowing how' approach to knowledge).

This view accentuates the interrelatedness between subject and pedagogical knowledge.

3.2.1.2 Pedagogical knowledge

Based on the definition of *pedagogy* a teacher's knowledge of pedagogy should entail deep-rooted knowledge of the methods and practices of teaching (Oxford University Press, 2014). Cochran-Smith and Lytle (1999, p. 249) hold knowledge of practice in high regard as the three conceptions of teacher knowledge distinguished by them are all grounded in practice, namely:

- Knowledge *for* practice – formal knowledge as a basis for practice which includes both subject knowledge and knowledge of pedagogy,
- Knowledge *in* practice – foregrounding teachers' practical knowledge, and
- Knowledge *of* practice – breaking down the distinction between formal and practical knowledge by adopting 'inquiry as stance' i.e. reflecting on both own practice and external theoretical perspectives on teaching.

This emphasis on practice confirms the prominence of applied competence and consequent sustainable competence in classroom contexts as outcomes of teacher education. *Knowledge of practice* gives form to the development of a more reflective and inquiry-based practice which serves as basis for continuous advancement of practice. Although all three conceptions mentioned are focused on practice they are primarily knowledge-based which does not necessarily guarantee application of knowledge and consequently applied competence.

Knowledge for practice entails both subject knowledge and knowledge of the learner and how learners learn. Learning by young children includes physical, mental, social, and emotional processes. Making sense of sensory information, the body, and the environment implies that all aspects of development should be synchronised (Woodfield, 2004, p. 23; Woolfolk, 2007, pp. 251, 252). This has specific implications for Foundation Phase teachers especially in a context where they have to support many learners with special educational needs. Knowledge of the characteristics of the learner will not only empower the teacher to implement a developmentally appropriate practice by basing teaching on how children grow and develop (Morrison, 2006, p. 14), but will also enable her to identify and address barriers to learning which learners may experience. According to Robson (cited by Köhler & Rigby, 2003, p. 552) identification of learning deficiencies is one of the most important responsibilities of a Foundation Phase teacher: “The basic reason for this emphasis on development is the generally accepted notion that the earlier a deviation is detected, the easier the treatment and the better the results.”

This ability is even more critical if learners are from poor socio-economic backgrounds; Hertert and Teague (2003, p. 5) cite research which indicates that poverty is the single best explanation for why children differ in ways that affect school performance.

The teacher working with young learners should therefore not only have a good knowledge of the subject content as set out in the curriculum but also needs a thorough knowledge of learners’ physical, cognitive, emotional and social development in order to facilitate meaningful learning (Woodfield, 2004, pp. 1, 2). Through guided learning in practice this knowledge will be supported by knowledge *of* practice and knowledge *in* practice which will support pedagogical content knowledge and consequently also applied competence.

Apart from the role of programme content, design and delivery, various factors may influence the way teachers gain pedagogical content knowledge to support applied competence such as teacher profile, the environment in which teachers apply PCK as well as teacher motivation and attitude. These determinants will be explored in more detail in §3.2.3, §3.3.1 as well as§3.3.2. As the literature confirms that effective

professional teacher development needs to be grounded in a thorough pedagogical content knowledge base, the interrelatedness between PCK and practice cannot be denied.

3.2.1.3 Interrelatedness of PCK and practice

Knowledge empowers teachers to make informed choices regarding the most relevant pedagogical strategies for practice. Informed choices are not only grounded in a sound PCK but also serves as basis for intellectual reasoning about the most relevant pedagogy (Shulman, 1987, p. 20). From the literature it is apparent that PCK and applied practice cannot be viewed as isolated elements in the teaching context because of the reciprocal relationship between them. Korthagen (2010, pp. 98-99) grounds his concerns regarding the impact of teacher education on classroom practice in previous research studies by Wideen, Mayer-Smith and Moon (1998) as well as Cochran-Smith & Zeichner (2005). Many educationists blame the poor impact of teacher education on practice on the divide between theory and practice (Broekkamp & van Hout-Wolters, 2007, p. 203; Cheng, Cheng, & Tang, 2010, p. 94; Korthagen, 2001, p. 2; Korthagen, Loughran, & Russell, 2006, p. 1038; Vreugdenhil, 2005, p. 1). The literature concurs regarding the way teacher education programmes should equip teachers with the necessary decision-making skills grounded in PCK in order to make informed choices regarding content and pedagogy relevant to the context within which teaching and learning can take place (Cheng et al., 2010, p. 102; Korthagen et al., 2006, p. 1031).

This role of reflection and informed decision making is also accentuated by South African teacher education policy. From the MRTEQ policy document (South African Department of Higher Education and Training, 2011, p. 10) it is clear that the South African Department of Higher Education and Training (DHET) also values THIS interrelatedness by envisioning a teacher who can draw reflectively from integrated and applied knowledge to work flexibly and effectively in a variety of contexts. The role of self-directed learning in the professional development of teachers therefore needs to be further explored.

3.2.2 Self-directed learning

There is agreement in the literature regarding to the role of SDL in lifelong learning (Bolhuis, 2003; Candy, 2004, p. 4; Guglielmino, 2013, p. 13; Loyens, Magda, & Rikers, 2008, p. 416). Loyens et al. (2008, p. 416) asserts that SDL starts with the student's intrinsic motivation to learn and that SDL can be considered both a means and an end to lifelong learning. Students who direct their own learning thus take ownership of the learning process as well as the learning outcome. In line with the theory of Biggs (1987a, pp. 9-11) (§3.3.1), this intrinsic motivation to learn promotes deep-level processing which not only supports lifelong learning but also impacts applied competence. Candy (1991) highlights the importance of SDL for performance outcomes, both in the short- and long-term which confirms that SDL is not only pertinent to the way students' master course content but also applies to the way they master knowledge *of, in* and *for* practice (§3.2.1.2).

The role of the HEI in supporting SDL is also highlighted in the literature (Francis & Flanigan, 2012; Guglielmino, 2013). Korthagen (2010, p. 98) refers to prior research by Grossman, (2008) as well as Zeichner and Tabachnik (1981), indicating a lack of autonomous thinking, self-regulation, and reflective professional practice as outcomes of ineffective teacher education programmes. Korthagen warns that according to research findings, the impact of teacher education on practice tends to be minimal. According to Francis and Flanigan (2012, p. 13) instructors must consider allowing students to influence the topics of study, the process of learning, or both the topics and processes in order to support SDL and student engagement.

Moore (1983, p. 7) views autonomous and self-directed learning (SDL) as synonyms referring to the ability to plan, implement and evaluate own learning. This view concurs with the definition by Knowles (1975, p. 18) of SDL as "a process in which individuals take the initiative, with or without the help from others, in diagnosing their learning needs, formulating goals, identifying human and material resources, choosing and implementing appropriate learning strategies, and evaluating learning outcomes."

Based on the definition by Knowles it is evident that SDL requires reflection on own knowledge and practical competence in order to diagnose own learning needs. Such an approach implies a degree of metacognition to serve as stimulus in the search for knowledge that may be lacking and which is needed to improve own teaching practice. This knowledge includes knowledge of theory, subject, and curriculum as well as pedagogical knowledge which informs PCK (§3.2.1).

In this study it is acknowledged that self-directedness involves various actions that influence all facets of teaching and learning. However, reflection and inquiry are highlighted as the two skills that play a primary role in all self-directed behaviour. In the context of teacher education, reflection and inquiry refer not only to the way teachers acquire PCK but also to the way these actions are implemented to improve classroom practice. Dewey (as cited by Rodgers, 2002, p. 849) further views *reflective thinking* and *inquiry* as essential components for effective self-directed learning by teachers. In order to accommodate these components in a teacher professional development programme in a meaningful way requires a deeper exploration into the way reflection and inquiry as components of self-directedness contribute to the applied competence of teachers.

3.2.2.1 Reflection

Reflective learning has been the focus of education studies for decades and across disciplines while various authors refer to the lack of reflective practice in teaching as contributing to poor education standards (Grant & Zeichner, 1984, p. 108; Welch & Gultig, 2002, p. 27). Dewey (1938, p. 9) defines reflective thought as “active, persistent, and careful consideration on any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends.” According to Dewey objective contemplation as well as existing beliefs and knowledge with regards to the object of thought, clearly illustrate the high level of cognition on which reflection operates. Dewey (1916, p. 73) further views reflection as an act of self-regulation and describes it as taking responsibility for the future. Reflection will thus lead to taking up the responsibility for teaching that could have negative consequences and actively changing the environment and behaviour to bring about positive teaching and learning outcomes. Biggs builds onto Dewey’s

theory by describing reflection in professional practice as an important mechanism to bring about change in education (Biggs, 2003, p. 31).

Various authors refer to the role of reflection in bringing about change in teacher behaviour. LaBoskey (as cited by Grant, 2004, p. 60) suggests that "reflective teachers reflect in order to learn – to improve their understanding of, feeling about, and responses to the world of teaching." Lee (2004, pp. 700-702) recognises the interrelatedness between the ability to reflect and an aptitude towards self-directedness, by asserting that practitioners engage in reflection as a means of understanding the nature of teaching, personal values and beliefs, using common processes. Reflection is not only critical for effective learning but also plays an important role in evaluating incoming knowledge using new knowledge to inform future behaviour.

- **The reflective process**

Lee (2004, pp. 700-702) builds onto the theory of Shulman (1987, p. 12) and states that reflection is a cyclic process which starts with a problem to be resolved, or when a teacher simply wishes to reconsider an educational situation or a conclusion previously reached. Programme design should thus scaffold the process by posing problems to which teachers can relate, and should equip and support teachers to progress through reflective cycles on their own. This cyclic process is confirmed by Boud, Keogh, and Walker (1996, p. 33) who emphasise the evaluating function of reflection: "Reflection is an important human activity in which people recapture their experiences, think about it, mull over and **evaluate** it." Such an autonomous self-evaluation based on experiences plays a critical role in changing teacher behaviour for improved teaching practice.

They illustrate the reflection process as follow:

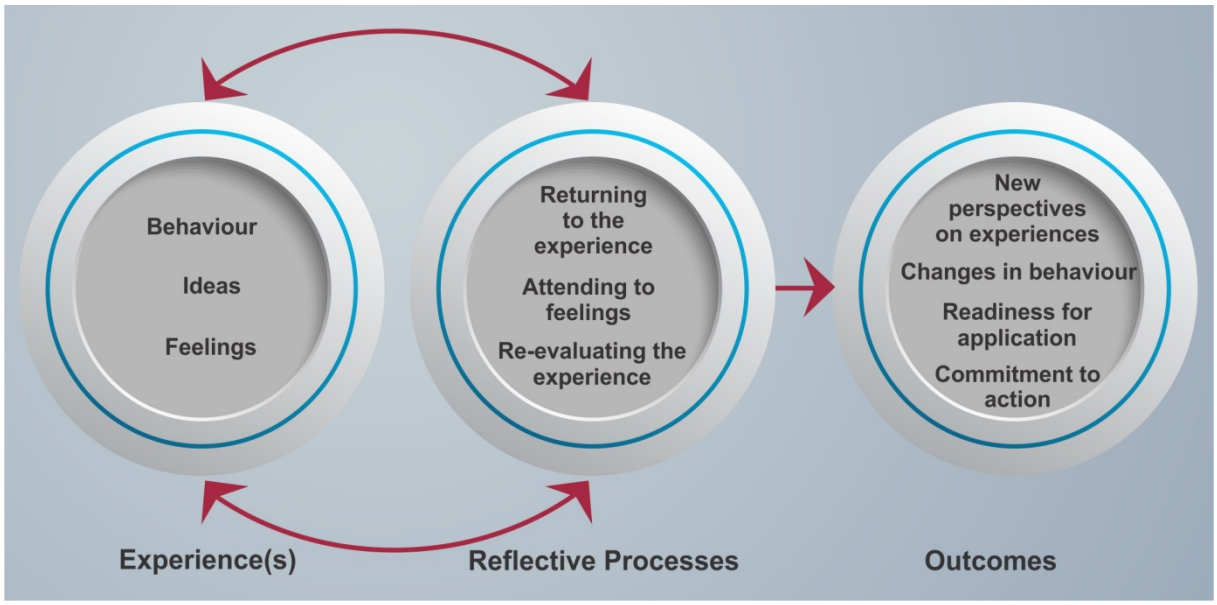

Fig. 3.2: The Reflective process (Boud et al., 1996, p. 34)

Boyd and Fales (1983, p. 100) define reflective learning as the process of "internally examining and exploring an issue of concern, triggered by an experience, which creates and clarifies meaning in terms of self, and which results in changed conceptual perspective."

The interrelatedness between reflection, PCK, guided applied practice, teacher beliefs and attitudes, and consequent improved applied competence clearly surfaces in the literature. Where teachers are guided in the application of theory and in reflection on the outcomes of such practice, it may support improved applied competence.

➢ Reflection and PCK

The important role of relevant PCK in meaningful reflection is confirmed by Welch and Gultig (2002, p. 25) who state that a good theoretical knowledge base assists teachers in becoming more flexible and thoughtful about the methods and techniques they choose to use in the classroom.

Reflective learning can therefore be viewed as an indispensable component which supports teachers in linking theory to practice in programmes geared to the professional development of practising teachers.

- **Reflection and teacher attitude**

The impact of reflection on teacher attitude and consequent sustainable changes in practice are well documented in the literature and serve as impetus for programme designers to consider ways to support meaningful reflection in DL programmes for teacher professional development. This self-directing skill is also viewed as a critical prerequisite for life-long learning (Krebera, 1998, p. 82; O'Farrill, 2012, p. 25). According to Boud et al. (1996, p. 33) reflection involves “those intellectual and affective activities in which individuals engage to explore their experiences in order to lead to new understandings and appreciations.” Ellis (2001, as cited by Williamson, Hostetter, Byers, & Huggins, 2010) also emphasises the confidence that can result from a reflective practice, enabling the teacher to better deal with future challenges in practice.

- **Reflection and applied practice**

Various authors ground their studies in Dewey’s theory (1938) based on the interrelatedness between experience learning and the development of reflective practice (Grant, 2004, p. 59; Grant & Zeichner, 1984, p. 105; Welch, 2008, p. 333; Welch & Gultig, 2002, p. 24). Grant (2004, p. 59) posits that reflection in learning requires that experience and theory work together in an informative way. Welch further emphasises the relationship between knowledge and practice and the role of reflection in this relationship (Welch, 2008, p. 333). Loughran (2002, p. 33) adds that the relationship between time, experience, and expectations of learning through reflection is an important element of reflection. This implies continuous guidance in reflection on practice (and the implications of theory for practice) during or directly after teaching to make learning episodes meaningful. Welch and Gultig (2002, p. 24) highlights the role of reflection in the development of applied competence as “a process in which teachers learn to apply their foundational knowledge in practice in

authentic contexts, and reflect on their practice in the light of experience as well as theory. This is a cyclical process in which competence can be achieved only over time and with frequent practice – opportunities should be on-going."

Guiding teachers in the cyclical process of reflection poses challenges to DL programme design and delivery. Furthermore, will the way the programme accommodates the teacher profile and teaching context influence the reflective process.

- **Recognising teacher profile and context in supporting reflection**

Although numerous studies concur regarding the critical accommodation of reflective learning in teacher education to develop teaching competence, Zeichner and Wray (2001, p. 619) warn that more investigation regarding the nature and quality of reflection that emerges under different conditions is necessary as reflection in and of itself does not automatically make for better teachers. An awareness of teaching and learning outcomes serve as motivation for changes in teacher behaviour and consequently improved applied competence. Strategies to support reflection in DL programmes for teacher professional development should thus take cognisance of the profiles and levels of learning of the target teacher population. Furthermore, not all student-teachers have a natural tendency to reflect on teaching and learning in order to improve their own teaching practices (Gabela, 2004, p. 57).

- **Supporting reflection in a DL programme**

According to Henderson, Napan and Monteiro (2004, p. 358), structured approaches to reflection in DL programmes could assist students to understand their own learning processes, encourage deeper learning, and develop professionals who will be lifelong learners and are committed to continuous improvements in practice. The value of deeper learning through self-directed skills in DL programmes for teachers is echoed by Welch (2008, p. 330 and 333). Welch and Gultig also highlight the need to support the development of reflective learning strategies and reflective practice in South African teachers enrolled in DL programmes (Welch & Gultig, 2002, p. 28). Guiding self-directed reflection in a DL programme for teachers, who may not have

had the opportunity to attain prior teaching experience in functional schools and under the guidance of experienced mentors, is even more challenging.

The distance between the teacher-educator and the teacher hampers continuous support in the development of reflective practice in a DL programme. DL programmes for the professional development of teachers require innovative programme design features to motivate teachers to reflect on theory, the implications of theory for their teaching practices, and ways to improve their own practices. Supporting this process is difficult where teachers have been in practice for a considerable number of years and have developed their own beliefs about practice (Timperley, 2008, p. 11 and 15), especially in cases where they have been subjected to ineffective education themselves.

To be able to reflect requires *openness to potential meaning* which implies *motivation to inquire* and thus to learn. This value of reflection is confirmed by Hillier (2002, p. xi) who states that reflection changes perspectives by informing teaching and reducing prejudice. Teacher education programmes aiming to equip student-teachers with the skills to act as agents of change, should thus heed the literature which stresses the value of reflection for the motivation and changed behaviour of teachers in practice.

3.2.2.2 Inquiry learning

The role of inquiry as a critical component of SDL is highlighted in the literature (Darling-Hammond & Snyder, 2000, p. 529; Guglielmino, 2013, p. 4; Savin-Baden, 2000, p. 15; Zumbrunn, Tadlock, & Roberts, 2011, p. 17). According to Cheng et al. (2010, p. 101) supporting self-learning in student-teachers is essential for teacher education in the global context. Creed (2001, p. 10) views teacher education as a product of the interaction between theory, practice, and research. Equipping teachers to find answers for teaching including subject content and pedagogical issues, will thus contribute to transform teachers into active agents of change in education standards.

- **Inquiry-based approach to learning for improved PCK and applied practice**

Darling-Hammond and Snyder (2000, p. 529) posit that research and inquiry develop teachers as social science analysts. The capacity to find knowledge and to build a knowledge base serves to navigate teachers' actions such as planning and implementation of teaching and learning, and assessment activities. According to Darling Hammond and Snyder inquiry allows novice teachers to integrate different areas of learning and to apply them in different ways that, together, include many dimensions of a professional teaching role. Teacher education programmes should therefore prepare student-teachers to research *generic aspects* of education, expand their *subject knowledge* through enquiry, and study the behaviour of learners to develop practice-based *pedagogical knowledge*.

While the DoE is concerned about the subject knowledge of teachers in the field, equipping student-teachers with the skills to *find* knowledge may help to fill the knowledge gap. The DoE (South African Department of Education, 2005b, p. 13) however acquiesced that not all teachers have access to resources to find knowledge and that it is necessary to provide them with substantial knowledge on subject content.

Inquiry-based teaching also refers to the ability of teachers to find solutions for *pedagogical challenges*. Where learner behaviour or learning barriers hinder effective teaching and learning, a teacher should be equipped to research the causes and to devise a plan of action to address the problem. When learners are the subjects of inquiry, case studies can help teachers learn to apply knowledge of development, learning, motivation, and behaviour to specific children as they function in their families, schools, and community contexts (Darling-Hammond & Snyder, 2000, p. 532). Edwards (2007, p. 85) postulates that teacher research should provide reflexive learning experiences for teachers and should be shared with other teachers in order to contribute meaningfully to solving practice-based problems as a shift towards a more socio-cultural approach to the teaching practice. A teacher's findings through inquiry-based learning in practice could thus be of critical value by contributing to a pedagogical knowledge base which could benefit the wider teaching community. The

importance of sharing and discussing experiences in a social model of reflection is particularly effective for academic development (Kahn, 2006). Inquiry also implies that teachers should be able to collaborate in finding solutions to problems and share their knowledge as professional development includes social learning whereby teachers learn from and with others (Lieberman & Mace, 2008, p. 230; Villegas-Remers, 2003, p. 139).

- **Inquiry-learning initiated by reflection**

Opfer and Pedder (2011, pp. 389, 392) refer to the role played by self-evaluation through reflection as a drive to search for knowledge that may be lacking. These authors maintain that the dissonance between the ideal and an evaluation of own current capability may result in a *change-provoking disequilibrium*. However, if the dissonance between what a teacher knows and what he/she should know is too large, it may lead to rejection rather than adoption of new learning. Teacher education programmes should thus equip teachers with relevant knowledge base and support them in the development of self-directed skills to evaluate their own knowledge through honest reflection. When teachers develop the propensity towards inquiry-based learning and teaching, they will be motivated to search for the relevant knowledge required for effective teaching in their own teaching contexts in a self-directed manner.

- **Inquiry grounded in research**

Supporting inquiry-based learning in teacher education does not only refer to the way student-teachers are encouraged to inquire regarding the *why*, *how* and *what* of programme content but also requires that the programme content be grounded in researched pedagogy (Edwards, 2007). Such scientific grounding will ensure that programme content permits students from various milieus to explore the meaning of the teaching practice literature in their own teaching contexts and also base their professional goals on a scientifically sound foundation.

Shulman (1987, pp. 10, 11) affirms that all facets of a teachers' knowledge base should be grounded in a scientific understanding of teaching and learning. The work for example, of Piaget, Maslow, Bloom, or Erikson would serve as valuable

background for making informed choices regarding teaching and learning strategies, resources, and content. Shulman points out that scholarly knowledge on teaching effectiveness supports teachers in identifying teacher behaviours and strategies that are most likely to lead to achievement gains among learners (Shulman, 1987, p. 10).

Knowledge on generic aspects of teaching and learning as well as content-specific domains is of benefit when it is grounded in scientific knowledge. Apart from a scientific grounding, teacher education programmes should also support understanding of the implications of research findings for teaching practice (Edwards, 2007, p. 85).

A self-directed approach, in which teaching practice is supported through reflection and inquiry, is dependent on a professional attitude which includes teacher motivation and commitment to improve own teaching competence. The role of teacher-education in supporting the development of a professional attitude and positive affective outcomes therefore needs further exploration.

3.2.3 Development of a professional teacher attitude

The National Framework for Teacher Education defines a professional teacher as a person characterised by a commitment to the ideals of the profession and by flexible competencies to pursue those ideals in a variety of circumstances, rather than by mere obedience to the legitimate requirements of the employer (South African Department of Education, 2005b, p. 6) (§2.2.1.1). This view is shared by Shulman who stresses that teacher education programmes need to strive towards standards without standardisation by equipping teachers to serve the practice and not the system (Shulman, 1987, p. 20). This implies that teachers should not merely teach according to the set norm but apply innovative strategies based on a reflective and inquiry based practice that will lead to the implementation of the most meaningful teaching strategies within their specific context.

The relationship between attitude, motivation, and self-directedness is confirmed in the literature (Ahmad, Said, Zeb, Sihatullah., & Ur Rehman, 2013, p. 25; Bandura, 1993, p. 132; Opfer & Pedder, 2011, p. 395; Zimmerman, 2008, pp. 177, 178). According to Opfer and Pedder (2011, p. 387) student-teachers' attitudes, values,

theories and beliefs affect the decisions about what they are willing to learn, and consequently also the instructional decisions they make. Grant and Zeichner (1984, p. 105) highlight the three attitudes defined by Dewey as prerequisite to becoming a reflective teacher, namely open-mindedness, responsibility, and wholeheartedness. According to Dewey, when a student-teacher possesses these attitudes together with the critical skills of inquiry and problem solving, they will be able to consider new and better ways of teaching based on circumstantial knowledge. Findings by Tsai (2007) confirm the relationship between teachers' epistemological views and their interpretations of teaching and learning processes.

Aedo (2002, p. 4) asserts that experience influences attitudes of commitment and purpose. This implies that although attitudes may be largely intrinsically motivated, prior teaching experience as well as the way teacher education programmes support experience learning, can play critical roles in establishing teacher-student beliefs about teaching practice as well as their motivation to master the essence of effective teaching. This interrelatedness between experience and belief has critical implications for programme design. Teachers' beliefs are firstly shaped by the kind of teaching they have experienced as learners, and secondly by their own experiences as practicing teachers. As the programme under investigation is often implemented in rural schools, exposure to quality teaching practice is not guaranteed. However, Opfer and Pedder (2011, p. 387) are of the opinion that new experiences and knowledge can motivate student-teachers to change their beliefs and consequently also their teaching strategies.

Motivation and self-regulation are often investigated concomitantly as motivation is an inextricable part of self-regulated learning. Zimmerman (2002, p. 66) not only highlights motivation as an important prerequisite for meaningful self-regulated learning, but also for the way in which knowledge will be applied in practice. Gabela (2004, p. 57) confirms this interrelatedness by pointing out that being a good teacher is as much a matter of basic attitude, personality, and understanding, as it is a matter of possessing factual knowledge.

Student-teachers' motivation for learning will thus play an important role in how they learn, which knowledge and skills are mastered as learning outcome, and consequently also their applied competence.

The role played by teacher-attitudes in turning around ineffective teaching practices is further highlighted by Opfer and Pedder (2011, p. 395) as they describe the cyclic nature of the change process: "Changes in beliefs lead to changes in practice that bring changes in student learning that bring further changes in practice that result in additional changes in belief and so on. The relationship between these processes is also reciprocal with changes in one being contingent on changes in another." These authors add that the interrelatedness between teacher reflection, attitude, and applied practice for changing beliefs about practice, is not possible without reflection on the outcomes of own practices which constitutes SDL.

The relationship between teachers' views of a programme and the way they will implement the programme content in practice is highlighted by Oolbekkink-Marchand, Van Driel, and Verloop (2006, p. 219): "If teachers' perspectives are not in line with the ideas underlying an innovation, changes suggested will probably never be put into practice." Ferlazzo (2012) posits that the best way to engage students is to develop their intrinsic motivation. Ley (2005, p. 1) highlights the important role played by student motivation in DL programmes. She suggests that students should be guided to set learning goals, organise learning resources, monitor their own learning progress, and evaluate their learning effectiveness. This kind of support and guidance is hampered by the distance between teacher-educator and teachers in a DL programme, and designers should therefore devise ways to substitute the motivation role of the teacher-educator or lecturer. DL programmes should thus find ways to build students' self-efficacy through formative feedback and acknowledgment of progress to ensure effective programme outcomes including applied competence.

The DL programme that is the focus of this study does not specifically set out to develop a professional attitude. However, grounded in the literature on the relationship between improved competence and enhanced attitude and motivation, I anticipated that attaining the aim of the practical component will also support the

development of a professional and positive attitude of teachers towards their teaching practice.

3.2.4 Guided applied practice

Supporting teachers in the application of PCK in the most effective way in practice is viewed by various authors as a prerequisite for applied competence (Lobman et al., 2004, p. 9; Rumajogee et al., 2003, p. 32; Sandberg et al., 2007). Taylor (2013) stresses the importance of guided applied practice as follows: “If PCK is knowing the kinds of strategies which are effective in teaching certain subject topics, classroom competence is the practical ability to deploy these strategies with learners as to effect learning.”

Although the importance of relevant PCK in teacher education programmes cannot be denied, authors such as Granlund, Berglund, and Erikson (2000) as well as Sandberg et al. (2007), agree that the application of practical knowledge is important for durable changes in behaviour. When students are exposed to quality teaching environments and have the opportunity to pragmatically link learning content in a meaningful and reflective manner, professional development will be effective (Lobman et al., 2004, p. 32). The Draft Policy on Minimum Requirements for Teacher Education (MRTEQ) reflected on lessons learnt from past policy implementation and found that the lack of applied and integrated competence hampered the realisation of educational policy aims (South African Department of Basic Education, 2010, p. 10). The final MRTEQ document further confirmed the importance of applied knowledge in practice in teacher professional development: “Integrated and applied knowledge should be understood as being both the condition for, and the effect of scrutinising, fusing together and expressing different types of knowing in the moment of practise.” (South African Department of Higher Education and Training, 2011, pp. 7, 8).

Guiding applied practice is inextricably interrelated with guiding reflection on practice. The interrelatedness between experience learning and reflection in developing applied competence is accentuated in the literature. Dewey (2008, p. 70) emphasises the change brought about by experience learning, but concedes that change is meaningless unless the consequences that flow from the experience is consciously

reflected upon. This sentiment is echoed by Shulman who maintains that the knowledge gained from teachers as they are guided to reflect on principles of good practice (or ineffective practice), can serve as basis for efforts of educational reform and lay a foundation for scholarly literature specifically focused on pedagogical practice (Shulman, 1986, as cited by Shulman, 1987, p. 11). Shulman adds that although teaching is among the world's oldest professions it is not static: “Most of the knowledge base is yet to be discovered, invented and refined.” As DL for teacher education is expanding rapidly, supporting the development of reflective practice will not only benefit the teaching practice of teachers currently enrolled through improved SDL, but also serve to improve future DL programme designs.

Classrooms are essentially social places. The approach of Feuerstein, Feuerstein, Falik, and Rand (2006) to experience learning in practice accentuates the guiding role of a mentor in the learning process which they refer to as the mediated learning experience (MLE). This approach supports the belief of Vygotsky that learning always involves interaction with others (Vygotsky, 1978). In this model stimuli experienced in the environment are transformed by a mediating agent, usually a more knowledgeable intentioned person in the life of the learner (in this study the teacher-learner). According to Feuerstein et al., MLE provides students with the opportunity to reflect on objects and events related to the larger field of learning rather than being restricted to only dealing with them in their direct and concrete presence. They identify MLE as the crucial ingredient that determines differential cognitive development, thus equipping the learner with the ability to differentiate between significant and insignificant knowledge which ensures *cognitive modifiability* – a theory which refers to the enhancement of human learning potential. Exposure to a variety of strategies implemented in diverse contexts builds the student-teachers’ knowledge network from which to draw information when making informed choices in practice, and constitutes the prerequisites for higher order mental operations (Feuerstein et al., 2006). MLE emphasises the social aspect of learning in practice which poses challenges to DL programme design.

The way a programme supports teachers to link new knowledge to their teaching context will motivate content mastery as well as the application of knowledge in

practice (Opfer & Pedder, 2011, p. 387). Carlson (1999, p. 212) as well as Rumajogee et al., (2003, p. 32) confirm the important role of experience learning in shaping a teachers' view of their roles in the learning process. The dire need to devise ways to guide the applied practice of teachers in DL programmes aimed to support applied competence, is thus apparent.

- **Guiding applied practice in DL programmes in the South African context**

Teacher education models in top performing countries such as Finland, South Korea, Canada, and Cuba, clearly prioritise guided applied practice as a core programme component to ensure applied teaching competence (§2.4). Although the structures and time frames differ from country to country this programme component always aims to provide students with the opportunity to experience the interconnectedness of theory and practice.

ITE programmes in South Africa incorporate a practicum in the programme structure during which student-teachers visit identified schools for a set time to experience and demonstrate the integration of various competences they had developed during the programme as a whole. The MRTEQ requires that practical learning be implemented in functional schools, and be fully integrated into overall learning programmes while including structured supervision, mentoring, and assessment (South African Department of Higher Education and Training, 2011). However, where practising under - or unqualified teachers are acquiring their teacher qualifications through DL programmes, the teachers have to make do with the context of the school of employment as the only opportunity to apply new knowledge in practice. The schools in which teachers implement the practicums as well as the support received by the school management, play a vital role in the way students are exposed to quality teaching and if they experience theory to be meaningful in the teaching context. Ways should therefore be found to ensure that all teachers enrolled in DL programmes are guided in meaningful ways in the application of knowledge in practice.

Methods to support applied competence in DL programmes identified in the literature include the implementation of ICT, mentoring, and a work-integrated portfolio

(§1.5.4.1 & §2.4). These mechanisms are explored in more detail in §3.4.4. Welch (2008, p. 334) suggests that DL resource design should follow an interactive approach to education whereby student-teachers are engaged in critical and reflective discourse looking for answers to problems posed relating to practice. She further suggests that action research forms part of summative assessment strategies in DL programmes for in-service programmes to support reflective approaches to practice.

In the top performing countries (§2.4) practicum schools commit as role players in supporting and equipping student-teachers with the necessary teaching competencies, and enter into partnerships with HEIs. All four countries refer to a mentor system in which experienced teachers support student-teachers in the application of knowledge in practice. O'Farill (2012, p. 17) reports that the system in Cuba where teachers are trained *in* the school, *by* the school, and *for* the school. Although these models are ITE programmes, the value of guided applied practice in quality teacher education is accentuated. Similar systems could be investigated for DL programmes where school management teams (SMT) take responsibility for guiding teachers in applied practice. Where the SMT is suitably equipped as mentors and committed to support teachers who are enrolled in DL programmes, it may also contribute to developing a culture of mutual accountability amongst the SMT and teachers, where all stakeholders collaborate to support learning cultures in schools.

The literature explored in Chapter two confirms that teacher education programmes, whether full-time or DL programmes, should include a practical component to provide for the development and assessment of applied competence in the classroom context since the practice-based disposition of the teaching profession requires that teachers learn *from* and *in* practice. The literature further underscores the essential aim that all teacher education programmes should strive towards, namely sustainable effective teaching in practice. Ways to support sustainable applied competence with specific focus on the role of student-teacher profile and teaching context in applied competence therefore needs further exploration.

3.3 Supporting sustainable applied competence in teacher education

The importance of sustainable programme purpose was described in the White Paper on Education and Training of 1995 (South African Department of Education, 1995). This document accentuates that education and training systems must meet the test of sustainability*:* “Unsustainable development is not development at all, but a kind of fraud practised on the people.” The MRTEQ highlights knowledge, reflection, connection, synthesis, and research to ensure integrated and applied knowledge which will equip teachers to make informed choices in the moment of practice (South African Department of Higher Education and Training, 2011, p. 7). It can therefore be assumed that policy also anticipates sustainable applied competence in practice as the outcome of all teacher education programmes.

This plea for sustainable outcomes in education programmes is echoed in the international literature (Huckle, 2008; Shephard, 2008; UNESCO, 2001). UNESCO states: “The ultimate goal of education for sustainable development is to impart the knowledge, values, attitudes and skills needs to empower people to bring about the changes required to achieve sustainability.” (UNESCO, 2001, p. 1).

Apart from PCK, self-directed learning strategies, guided applied practice and a professional attitude to teaching practice, the literature also confirms that contextual and personal factors of the target population and the way a programme accommodates these factors will greatly determine the way student-teachers learn - which will consequently impact sustainable outcomes in practice (Biggs, 1989, p. 8; Biggs & Tang, 2007, pp. 26-29; Chalmers, 2007, p. 88; Hamilton & Tee, 2013 p. 11). The way the programme accommodates the teacher profile as well as the teaching context will determine the way teachers learn and are able to apply new knowledge in a sustainable way in practice.

The model of Biggs (1987b, p. 9; 2001) highlights the role of the learning environment, including programme design, content, delivery, and teacher profiles, in the way a teacher will approach learning. Thus both teacher personal factors as well as situational (teaching and institutional) factors interact to determine the

sustainability of learning. Deep learning implies that student-teachers will not only learn new knowledge but also acquire relevant knowledge in a meaningful way. When teachers experience learning as meaningful for their context they are encouraged to take ownership of new knowledge, leading to improved motivation to apply the knowledge in practice. Deep learning will therefore support sustainability of applied competence.

The following section explores the literature on the role of teacher profiles and teaching contexts and the implications thereof for programme design and sustainability. These factors are especially important in a DL programme geared to the professional development of under - or unqualified teachers in a developing context.

3.3.1 The role of the teacher profile in sustainable applied competence as programme outcome

Various investigations based on the interrelatedness between student-teacher context and learning outcomes are grounded in the theory of Biggs (Chang & Chang, 2008; Gijbels, Coertjens, Vanthournout, Struyf, & Van Petegem, 2009, p. 503). Biggs' model (1987b, 2001) outlines the accommodation of situational as well as personal determinants to ensure deep leaning in teacher education programmes. Dewey, who is regarded as the father of experience learning, theorised that experience arises from the interaction of two principles – continuity and interaction (Fishman & McCarthy, 1998, p. 30). Continuity implies that each experience a person has will influence his/her future for better or for worse. Interaction refers to the way a specific situation and the environment will have an influence on one's experiences. Prior experience and personal background forms part of a teacher's profile. The unique situations of a student-teacher therefore need to be recognised by programme design. Opfer and Pedder (2011, p. 376) further note that the existing literature on teacher learning fails to acknowledge that teacher learning is embedded in professional lives and working conditions.

An HEI creates an environment for teaching and learning – whether that environment is a campus where students enrol for fulltime studies or a DL environment. Biggs and

Tang postulate that this environment should accommodate the personal factors of the target population as this will determine how students will react to the teaching environment which will in turn have an impact on the effectiveness of learning: “Surface and deep approaches to learning are not personality traits, as is sometimes thought, but are most usefully thought of as reactions to the teaching environment.” (Biggs & Tang, 2007, p. 29).

Language diversity in South Africa plays a significant role on all levels of education. Accommodating language diversity as part of the teacher profile has huge implications for DL programmes aimed at the professional development of Foundation Phase teachers. Apart from under - or unqualified teachers often lacking the necessary competence in English and academic literacy required for further academic studies (Welch & Gultig, 2002, p. 28), accommodating teachers represented by all 11 official languages poses challenges to DL programme design, delivery, and assessment. The flexible delivery mode of DL programmes provides a pathway for practising teachers in all parts of the country including those in remote rural areas (Welch, 2008, p. 326). It can thus be assumed that the target population will represent all 11 official language groups; which is not only costly but also difficult to implement. The content of DL teacher professional development programmes is mostly presented in English as is evidence of the programme outcomes even though English is often the teachers’ and their learners’ second or third language and not the language of learning and teaching (LOLT) at the schools where the teachers are employed. Language diversity could thus impede conceptualisation of knowledge and practice grounded in theory (Nel & Müller, 2010, p. 646; Probyn, 2001, p. 251). Support and assessment of applied competence is therefore hampered by language diversity.

Hellman (2003, pp. 19, 20), Rumajogee et al., (2003, p. 28) and Creed (2001, p. 17) claim that programme content and design should recognise prior knowledge, situational factors, and the cultures of student-teachers. Research indicates that typical Foundation Phase teachers enrolled in DL programmes are often mature, lack academic literacy skills and academic proficiency in English, and often teach learners from poor socio-economic backgrounds (Kruger, 2010, p. 163 and 197). The

programmes should therefore ensure that both design and content accommodate the teachers' profiles.

From literature it is thus evident that DL programmes aiming to improve the standard of teaching in our schools should take cognisance of the personal and situated factors of under or unqualified teachers who are often employed in poor socio-economic environments. Such personal factors of the typical student-teacher enrolling for DL programmes in South African context should therefore be determined and accommodated by programme design including content, delivery and assessment strategies, to ensure professional development and consequent applied competence as programme outcome.

3.3.2 The role of teaching context in sustainable applied competence as programmes outcome

Researchers such as Biggs build onto the theories of Dewey (1916, p. 22) which recognise the importance of prior experiences in the continuity of student-teacher professional learning. In this programme where the focus is on the professional development of practising teachers, cognisance is taken of the fact that they come to the learning situation with experiences of teaching and learning regardless of whether these prior practices have been effective or not. The implications of existing prior knowledge for a DL programme are twofold:

Firstly, unless students have had *prior experiences* similar to a current situation, they will struggle to make sense of new knowledge and to act in meaningful reflective ways in practice. A teacher education programme aiming to improve applied teaching competence will therefore have to use teachers' current contexts as starting point and also support critical reflection on their prior learning and practice. *Secondly*, teachers have to be guided to *reflect on prior experience and practice* in order to improve their practice. Dewey, as cited by Aedo (2002, p. 6), points out that the process of thinking starts with dissonance between the known and the unknown. Students will rely on previous experience and beliefs of what worked or did not work in order to understand new information. Various studies indicate that teachers tend to use teaching strategies in the same way they were taught or to use strategies

modelled by their teachers unless they are motivated to make informed decisions based on reflection to implement effective new teaching strategies (Lobman et al., 2004, p. 32; Modiba, 1997). Merriam (2001, p. 5) posits that certain life experiences can act as barriers to learning. A teacher's experiences of teaching thus start when they enter the school as learners. Should teachers have attended dysfunctional schools themselves, the chances are that they will themselves model poor teaching strategies in their classrooms. Pretorius (2014, p. 54) posits that a school becomes dysfunctional when, due to abnormal or impaired functioning, it fails to accomplish the true purpose of teaching and learning for which it was instituted. He refers to concurrence in the literature with regards to unstable management conditions, inappropriate or lack of leadership, lack of vision, an unhealthy school climate and culture, and low staff and learner morale as characteristics of a dysfunctional school. Teachers enrolling for a DL programme come from a diverse background and the teaching context of the teacher cannot be generalised as dysfunctional. However, DL programme designers cannot assume that all teachers have the necessary prior experience of functional education. Programme design should therefore accommodate a diverse teaching context and find ways to support teachers who may have to apply new knowledge in a dysfunctional school.

The implications of the diverse teaching contexts for DL programme design and content are evident. Lave (1996, p. 150) builds onto the socio-constructivist theory of Vygotsky and concedes that learning is situated as it is a function of the learning activity, context, and culture in which it occurs. This view confirms that teacher education programmes should involve knowledge which accommodates the context within which the student-teacher will eventually apply the knowledge. The South African DBE also affirms that education should assist teachers to deal with classroom situations that exist in reality and not just to manage ideal situations; different teachers need to deal with different challenges (South African Department of Basic Education, 2011a, p. 109).

The South African DBE also views the ability to make informed choices based on contextual factors as a critical skill to be developed by all teachers. Accordingly the MRTEQ policy (South African Department of Higher Education and Training, 2011, p.

9) situational learning must include knowledge of varied learning situations, contexts, and environments (classrooms, schools, communities, districts, regions, and countries). Although this document envisions that all learning should involve learning *in* context, situational learning specifically refers to learning *about* context. This implies that DL programmes should support an understanding of the diverse contexts in which teachers need to apply new knowledge and skills in order to work in nuanced ways with the diverse challenges they may encounter.

As assessment forms an integral part of teacher learning (Darling-Hammond, 2010b, p. 44 and 45) it is imperative that DL programme assessment strategies also accommodate the profiles and teaching contexts of the enrolled teachers. Shulman (1987, p. 6) argues that teacher knowledge bases or competence (§3.2.1) cannot merely be assessed through tests or observation of classroom practice but also need to take cognisance of the contextual factors that play a determining role in the way teachers are motivated to apply knowledge in practice. Shulman adds that the teacher should not only know the requirements of the prescribed school curriculum as per the government's education policy, but also have knowledge of the contextual factors that need to be accommodated in order to implement the curriculum in the most relevant way in a specific milieu: "If a teacher needs to know the territory of teaching, then it is the landscape of such materials, institutions, organisations and mechanisms with which he or she must be familiar. These comprise both the tools of the trade and the contextual conditions that will either facilitate or inhibit teaching efforts." (Shulman, 1987, p. 9). Competent teachers reflect on the implications of their teaching context such as the socio-economic context of the school, the available resources, and the background or their learners which includes their developmental level, prior knowledge, preferred learning styles, LSEN, diverse culture and socio-economic backgrounds, before making choices regarding subject content and pedagogy.

Various factors related to the teaching context pose specific challenges to the development of applied competence through a DL programme for Foundation Phase teachers in the South African context. These include socio-economic and cultural backgrounds of teachers as well as of the learners (Kruger, 2010, p. 197; Kruger,

2012, pp. 179 - 182). Factors related to the education system and policies and factors related to school management may also hamper the development of applied competence. Bush, Kiggundu, and Moorosi (2011, p. 31) accentuate that “effective leadership and management are vital if schools are to be successful in providing good learning opportunities for students, and emerging evidence that high quality leadership makes a significant difference to school improvement and learning outcomes.” One such barrier emerging from the socio-economic and cultural context as well as from the education system, is the multi-language approach which stipulates that Foundation Phase learners are to receive education in their mother tongue (South African Department of Education, 2007, p. 12). Recognition of South Africa’s 11 official languages therefore not only challenge the South African education system in general, but also Foundation Phase teacher education programmes in which teachers have to accommodate the mother tongue of all learners in Grades R to 3. Although schools have language policies which prescribe the language of learning and learning (LOLT), a lack of resources and insufficient schools and teachers to accommodate the large number of Foundation Phase learners, result in children enrolling in schools which use a LOLT different form their mother tongue (NEEDU, 2013, pp. 8, 9). Teachers often accommodate learners from diverse cultural and language groups in the same classroom. Not only is learning hampered when language diversity results in poor communication between the teachers and their learners (Nel & Müller, 2010, p. 646; Probyn, 2001, p. 251), but under - or unqualified teachers often lack the necessary competence in English and academic literacy required for further academic studies (Welch & Gultig, 2002, p. 28). A shortage of teachers especially in rural areas further results in a high teacher-learner ratios which often exceed 1:40 (South African Department of Basic Education, 2011a, p. 80). Overcrowded classrooms challenge management skills and often lead to poor discipline which may further impede the sustainability of applied teaching competence as outcome of DL programmes.

Other factors related to the context of teachers enrolled in DL programmes that may hamper sustainable applied competence as programme outcome, are determinants such as the education system which includes the DoE and school management as

role players in teacher professional development. Frequent changes in the school curriculum require extensive teacher training. DL programmes geared at the professional development of practising teachers assume that they have a basic knowledge of the prescribed school curricula as introduced by the DBE. However, the literature confirms that teachers do not always receive proper training in the implementation of new curricula. Moreover, Hall, Altman, Nkomo, Peltzer, and Zuma (2005, pp. 1, 3) identify low salaries, a lack of recognition of experience, and increased bureaucracy in the Department of Education (DoE) as contributing to the low morale of teachers.

Lumadi (2014, p. 5) refers to the numerous curriculum changes – from curriculum 2005, Outcomes-Based Education, National Curriculum Statement, and Revised National Curriculum Statement to Curriculum Assessment Policy Statements which were all implemented without intensive training for teachers. Lumadi (2014, p. 5) cites inadequate resources, dilapidated buildings with out-dated libraries, vandalism, arson, and poor wages as factors which contribute to the low morale amongst teachers.

A lack of support by school management for teachers enrolled in DL programmes could hamper applied competence as outcome of professional development (Van der Berg, Taylor, Gustafsson, Spaull, & Armstrong, 2011, p. 8). Poor socio-economic learner backgrounds together with an increase in LSEN could further deter teachers from implementing new knowledge in reflective ways in practice. According to Williams, Olivier and Pienaar (2009, p. 198) teachers have not been adequately prepared to accommodate LSEN in an inclusive education system. Foundation Phase teachers are expected to identify learning barriers, effectively support identified learners, and record all learner progress. A lack of knowledge, training, and resources to support LSEN (Campbell, 2006, pp. 7, 8) together with socio-economic factors that impact on the attention, ability, and discipline of learners however result in teachers experiencing feelings of hopelessness which leads to low morale and stress-related illnesses (Hall et al., 2005).

In South Africa the pre-school year, generally referred to as the reception year (Grade R) does not yet form part of the subsidised school system. Children from poor

socio-economic backgrounds often do not have access to quality learning readiness programmes in the year prior to Grade one (South African Department of Basic Education, 2011b, p. 3). Poor learning readiness leads to an increase in LSEN which contributes to an unfavourable teaching context for Foundation Phase teachers (South African Department of Basic Education, 2011a, p. 83).

Campbell (2006, p. 101) also highlights the lack of parental involvement and the poor learning readiness of learners from poor socio-economic backgrounds as factors contributing to teachers' unfavourable teaching contexts. Illiterate parents may be a determining factor in learners' ability to learn as parents are often not able to play a role in their children's' learning readiness and further academic progress (Mncube, 2009, p. 95).

It is thus clear that various contextual factors encumber the task of Foundation Phase teachers in laying sound foundations for later learning. DL programmes aimed to improve the applied competence of practising teachers therefore have to recognise the diverse teaching context of the South African teacher.

3.4 IMPLEMENTING DISTANCE LEARNING FOR THE DEVELOPMENT OF APPLIED COMPETENCE OF TEACHERS

The SA government's initiative to ensure that all teachers attain at least the minimum required qualification has resulted in a massive enterprise which allows thousands of under - and unqualified practising teachers enrol in DL programmes as a means to acquire necessary qualifications. Although these teachers have been in practice for a considerable number of years, DL is often the only way to obtain an initial qualification according to the required level of the National Qualifications Framework.

The DL programme that forms the focus of this study is part of a government initiative to provide qualifications to practising under - or unqualified teachers through accredited professional development programmes. Although the study acknowledges the broader framework of professional development as set out in §2.2, the focus of the study is to investigate the way specific design features included in a DL

programme support the applied competence of Foundation Phase teachers. As DL for teacher professional development is often used as a means to uplift educational standards in the country, programme design and delivery should also ensure sustainable programme outcomes in practice (§3.2). Sustainable programme outcomes imply that teachers are equipped by the programme to apply relevant knowledge and skills in an informed way in order to improve their teaching practices as well as their ability to carry on learning *in* practice and *from* practice after completing the programme. The literature affirms that teacher professional development programmes need to accommodate teacher profiles as well as the teaching contexts of practising teachers to ensure sustainable applied competence (§3.3). Supporting the development of sustainable applied competence in a DL programme poses various challenges to programme design, delivery and teacher-support.

While the literature on well-performing countries concur regarding the core elements of applied competence (§2.4), strategies to accommodate these elements in DL programmes need to be explored. Ways in which these elements can be effectively accommodated in a DL programme to support sustainable applied competence in practice (§3.3), necessitates further consideration of programme purpose which also relates directly to the target population of DL programmes in a developing context such as South Africa.

3.4.1 Purpose of DL programmes for teacher professional development

Perraton (2000, p. 60. 67) identifies three main reasons for the implementation of distance learning for teacher education, namely (i) greater access to learning opportunities, (ii) cost effectiveness, and (iii) effectiveness for in-service training to implement new policies in times of change. These purposes correlate with the aim of DL programmes implemented in developing countries such as South Africa (South African Department of Education, 2007, p. 17), Brazil (Bof, 2004; Joia, 2002), Nigeria (Upko, 2006) and Zambia (Siaciwena, 2007). In 2005 the South African DoE (2005b,

p. 12) encouraged HEIs to explore distance learning programmes as a less costly and less labour intensive mode of offering teacher education programmes.

Peters (2007, p. 63) highlights the initial humanitarian mission of DL which allows neglected and underprivileged persons the opportunity and support to attain qualifications. This approach views DL as progress in the expansion of educational opportunities to improve society by improving education (Peters, 2007, p. 63). DL for teacher education as implemented in the context of an IC mostly incorporates information technology, providing autonomous learners a more convenient and economical way to attain a qualification without having to travel for face-to-face presentations (Green et al., 2010; Lea, 2000). Although developing countries view DL as a relatively quick and cost effective way to supply teachers where shortages exist (Perraton, 2000, pp. 60, 67; Siaciwena & Lubinda, 2008), various authors express concerns regarding applied competence as outcome of DL programmes for teacher education (Perraton et al., 2002, p. 18; Rumajogee et al., 2003, p. 14). While educationists agree that quality distance learning programmes offer advantages for the professional development of teachers (Creed, 2001; Greig, McLuckie, Payne, & Williams, 2002; Lea, 2000; 1997; Tait, 2000), where socio-economic factors afford no other option to supply in teacher shortages (Perraton et al., 2002, p. 12; Welch, 2008, p. 325), strategies should be devised to support applied competence in DL programmes implemented in NICs such as South Africa.

3.4.2 Target population of DL programmes for teacher education in South Africa

Previous research found that teachers enrolled in DL programmes in South Africa mostly consist of practising under - and unqualified teachers from poor socio-economic backgrounds who have little or no experience of academic learning (Kruger et al., 2012; Welch, 2008, p. 28). These teachers are often also employed without any prior knowledge or training with regards to subject knowledge and pedagogy (Dladla & Moon, 2002, p. 3) and have to rely on knowledge based on own experiences of teaching and learning (§3.3.1). In cases where they attended dysfunctional schools themselves and have gained teaching experience without

quality supervision, there is no guarantee that prior learning can enable them to set quality education as benchmarks for their own practice.

Previous learning and experience play and important role in epistemological views and where the context of a teacher does not model effective teaching and learning due to socio-historical or other factors, a DL programme for teacher education should find ways to not only fill this knowledge gap but also to scaffold reflection on effective education in order to change the status quo. As the literature confirms the role of PCK, SDL strategies such as the ability to reflect *on* and *in* practice, inquiry based learning, guided applied practice, and the development of professional attitude towards teaching and learning (§2.4 and §3.2), DL programme design features should embrace these elements. This is critical when DL programmes are geared towards the professional development of under - and unqualified teachers with little or no PCK and/or academic learning (Welch, 2008, p. 28).

3.4.3 Implications of distance learning for applied competence

According to the Action Plan (South African Department of Basic Education, 2011a, p. 109) teacher in-service training poses a major challenge for government wishing to improve schools. Since the developing context of South Africa implies that interventions must reach a large number of teachers, the DBE views DL as a way to provide **Initial Professional Education of Teachers** (IPET) as well as **Continuing Professional Teacher Development** (CPTD) programmes for teachers (South African Department of Education, 2007, p. 15 and 23). The situated and contextual nature of teaching has implications for supporting and assessing applied competence in a DL programme. The physical distance between the teacher-educator and student in a DL programme hampers guided applied practice and thus also mediated experience learning (§3.2.4) which plays a critical role in the development of applied competence in teacher education.

The literature confirms that the context in which the teacher gains practical knowledge and skills (§3.3.2) as well as the teacher's prior experience of practice (§3.3.1) will influence the development of applied competence. Authors such as Erkilic (2008) and Dondi and Moretti (2002, p. 366) accentuate that application of

practical knowledge is important for sustainable change in the behaviour of teachers. DL is often used for the professional development of practising teachers, and programme design mostly relies on the current teaching practices and previous experience as a way to develop or improve applied competence. In cases where student-teachers have been practising as unqualified teachers in dysfunctional schools, questions are raised regarding the quality of their experiences and prior learning which form the foundation for future knowledge construction. Where teachers use irrelevant or ineffective teaching strategies, new knowledge of effective teaching will only become meaningful when student-teachers are a) supported to apply this knowledge in practice (Erkilic, 2008), and b) when cognitive development in practice is meaningfully mediated (Feuerstein et al., 2006). These assumptions imply that DL programme design should support the meaningful implementation of PCK as well as critical reflection on the implications of theory for practice.

As applied competence implies the ability to make informed choices in practice (§2.2.1.3), DL programmes need to provide the opportunity for teachers to reflect on the implications of various contexts for teacher actions. According to Griffiths and Guile (2003, p. 58) teachers need to understand the limitations of practice and therefore need to be given opportunities to contextualise their theoretical and practical knowledge and skills in new contexts in order to create new knowledge and practices. DL programmes that do not include guided applied practice and mediated experience learning do not only deny teachers the opportunity to develop more reflective practices but also hamper the development and formative assessment of applied competence as programme outcome.

3.4.4 Strategies to accommodate applied competence in DL programmes

The existing literature confirms that teacher education programmes should support the development of PCK, self-directed learning strategies such as reflective and inquiry learning, a professional attitude as well as opportunities to apply theory in practice (§2.4 and §3.2). Programmes should also accommodate teacher profiles and teaching contexts to support sustainable applied competence (§3.3). The design

of DL programmes for teacher education anticipating applied competence as outcome will thus need to include mechanisms to support SD skills and provide teachers with opportunities to develop and demonstrate practical competencies in authentic contexts. While student-teachers should be exposed to functional and effective classroom practice, they should be able to relate to the context of modelled practice which will serve as motivation to apply good practice in their own contexts.

Formative assessment of applied competence in practice is viewed as a critical opportunity to develop applied competence through feedback and to link theory to practice in authentic classroom environments. According to Banks, Moon and Wolfenden (2009, p. 5) assessment in DL programmes for teachers should relate to practice through formative modes of assessing, including the use of portfolios and competency models. They accentuate that reform in this area is long overdue.

Although the literature on teacher education in top performing countries does not focus on DL programmes per se, lessons learned from these countries indicate the value of design features such as effective use of portfolios, reflective journals, ICT, and mentorship, to support applied competence as programme outcome. Authors Shin and Lee (2009) and Banks et al. (2009) agree that more than one modality or *hybrid* design feature is necessary to support applied competence. I constructed the following diagram based on the literature to illustrate the way possible design features could serve to support elements related to applied competence as programme outcome:

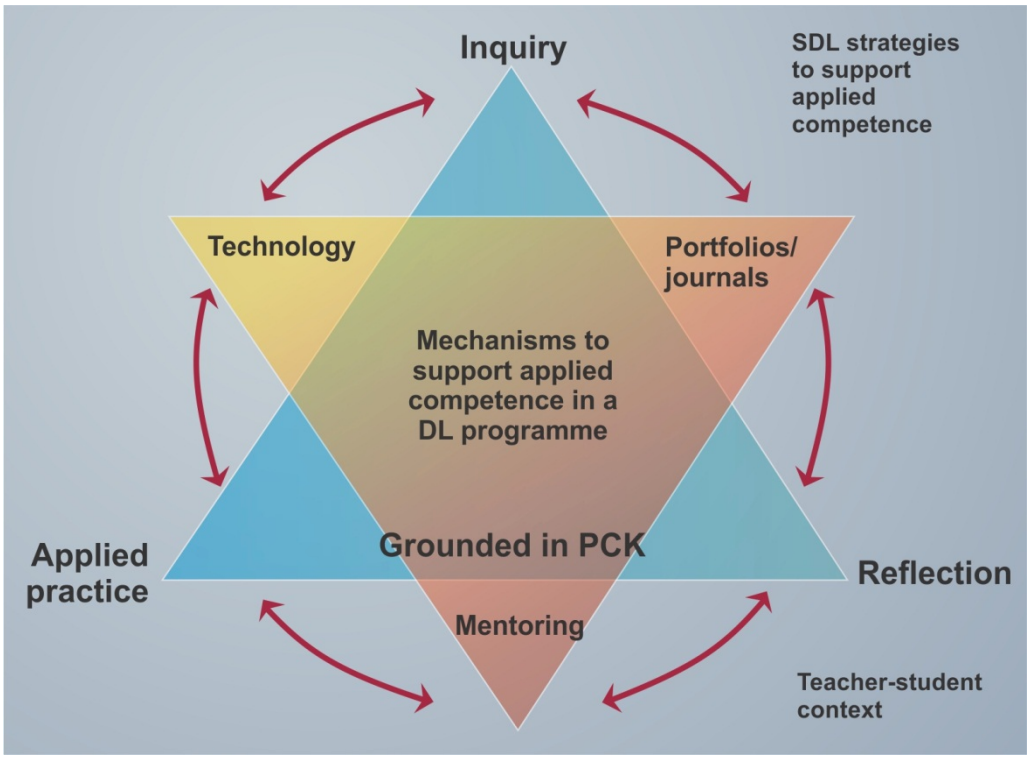

Fig. 3.3: Mechanisms to mediate elements of applied competence in a DL programme offered in a developing context as identified in literature (Kruger, 2014)

The distance between the teacher and the teacher-educator in DL necessitates design features to substitute the teacher-educator as mediator in the guided application of knowledge and skills in practice, as well as formative assessment of applied competence. Fig. 3.3 models a design which identifies technology, mentoring, portfolios and journals which could be implemented to support the identified elements that play a role in applied competence, namely SDL skills such as reflection and inquiry learning, as well as opportunity to apply PCK in practice. The interrelatedness between all facets is indicated by the arrows as well as the overlapping and linked triangulated diagram. The shaded background represents the teaching context which should be accommodated by all components in the model.

The practice-based nature of Foundation Phase teaching further challenges HEIs regarding ways to support and assess the applied competence of teachers. A DL programme in a developing context cannot rely on one design feature only for the

mediation and monitoring of applied competence. DL implemented in industrialised countries for pre-service and in-service teacher education programmes often rely profoundly on electronic learning (Croes, Day, Harris, Leonard, & Tims, 2003, p. 5; Daniel, 2010). In a country where Internet access and computer literacy is not a given (Aluko, 2009, p. 4; Butcher et al., 2011, p. 154; Shava & Ndebele, 2014, p. 324), the DL programme investigated cannot be compared to e-learning programmes employed for teacher education in developing countries (§1.5.3). The digital dive does not only exist between developed and developing countries, but South Africa also experiences huge digital divides between rural and urban areas (Butcher et al., 2011, p. 154). Teachers enrolled for the ACE programme differ considerably from the DL models implemented for the professional development of teachers in ICs. However, both DL and pre-service programmes were explored from the literature for ways in which the three identified design features namely technology, mentoring, and portfolios/journals are used to support applied competence as programme outcome.

3.4.4.1 Technology to support and assess applied competence in a DL programme for teacher education

Although the use of technology for teaching and learning is not restricted to DL programmes and is used in many face-to-face institutions (Council on Higher Education, 2004, p. 25), the latter mostly use technology to *enhance* face-to-face lectures and to provide *expanded* learning opportunities. Creed (2001, p. 6) states that interactive technologies and a participatory approach in DL programmes promote programme outcomes. The DL programme that is the focus of this study uses an interactive whiteboard for face-to-face presentations of programme content which is broadcast to centres across the country. This design feature provides opportunities for interaction between teachers and teacher-educators during real time presentations and for the visual representation of effective pedagogies in the form of pictures and video clips. Attendance of these sessions is however optional in this ODL programme. Learning Management Systems (LMS) such as Dropbox are also used by the NWU ODL model to provide teachers with access to additional resources and recordings of whiteboard presentations. SDL and self-regulated learning (SRL) of student-teachers thus play a determining role in the way ICT it contributes to

meaningful learning and applied competence as programme outcome. Innovative use of ICT will be required to ensure that technology supports applied competence of student-teachers – especially in a developing context such as South Africa.

While technology such as wireless broadband has brought a new dimension to higher education, the developing context in which practising under - and unqualified student-teachers in developing countries need to attain a qualification, hampers non-discriminatory use of innovative technology. Butcher, et al. (2011) confirm this inequality in ICT distribution and skills by referring to the huge digital divide between rural and urban areas in African countries.

Croes, Day, Harris, Leonard, and Tims (2003, p. 8) give account of the rapid advancement from print-based to online applications for education. They warn that while wireless broadband gives credence to the *education anytime, anywhere* slogan, every advancing stage also widens the disparity between levels of technology from one country to the next. Although technology provides access to a broader population the authors express their concern regarding the quality of access. They argue that where students do not have the necessary skills to use technological mechanisms, and do not receive adequate support, technology for teaching and learning may hamper the quality of programme outcomes with specific focus on applied competence.

According to Croes et al. (2003) HEIs offering DL programmes must understand that cultural and technological factors play a determining role in the successful use of technology for teaching and learning. Calder (2000, as cited by Croes et al., 2003, p. 8) points out that inherent differences in organisational cultures, academic cultures, education and training philosophies, and teaching and learning values and traditions within different cultural groups should be considered when technology is employed in DL programmes. This concern is underscored by various authors (Gunawardena & LaPointe, 2007; King, 2003; Thorpe, 2003). It is thus evident that the diverse culture and teaching contexts of teachers enrolled in DL programmes in South Africa pose various challenges to the effective use of technology to support the development of applied teaching competence. However, success stories from LICs and ICs countries regarding the use of technology should be investigated and evaluated. Their

methods, if adapted to the developing context, may contribute to uplift educational standards in the country by better preparing teachers for practice.

Greig et al. (2002, pp. 40, 41) investigated the use of electronic conferencing as a means to support learning in DL programmes for early childhood teachers in Scotland. It was found that various factors inhibited full participation. These included technical system failure, unfamiliarity with (and poor access to) computing equipment, and lack of confidence in electronic conferencing and the nature of electronic communication itself. However the majority of those who did participate found the interactions with fellow professionals helpful for their own practice and cognition. Although the students enrolled in DL programmes in LICs and NICs often do not have access to mechanisms allowing e-conferences, other technologies such as cell phone text messages or Facebook could be investigated to serve as support for applied competence through communication.

In 2001 Creed (2001) listed the challenges posed to the management and synchronous supervision of classroom practice in DL programmes while more recent sources share more positive findings about ways to support applied competence through technology. Meriläinen et al. (2013) (§2.4.1.3) researched the implementation of technology during the final practicum of a programme in Finland. This research experimented with the use of cameras to enable real time monitoring and assessment of lessons by teacher-educators who were not in the same location as the students. Although the focus of the study was a pre-service programme, findings on benefits for student-teacher development and formative assessment in an authentic classroom context could be meaningful for other DL programmes. Recording of lessons was found useful as a basis for reflective learning and since the literature shows that the latter is a prerequisite for a change in teacher behaviours (§3.2.2.1), incorporating this mechanism could contribute to the development of applied competence in DL programmes.

Banks et al. (2009, p. 1) believe that the scale of teacher shortages around the world is so great that school-based forms of ODL using new communication technologies are the only viable way forward. As distance hampers the support and assessment of applied competence as outcome of DL programmes implemented in developing

contexts, further investigations will show *if* and *how* such design features can be implemented to overcome this barrier in South Africa.

3.4.4.2 Mentoring to support and assess applied competence in a DL programme for teacher education

According to Banks et al. (2009, p. 6) teacher development programmes need school-based support no matter how well planned or sophisticated the technologies of DL programmes are. Supporting the development of applied competence is traditionally viewed as dependant on direct support in classroom practice by an experienced teacher or mentor (§3.2.4). Mentoring is commonly used in teacher education programmes to provide this school-based support. Ingersol and Strong (2011, p. 3) describe mentoring as personal guidance provided, usually by seasoned veterans, to beginning teachers in schools. These authors report that one of the main factors behind teachers departing from the profession is the lack of adequate support. A mentor should have the required knowledge and experience to support a novice teacher in her professional development by guiding structured opportunities for experience learning. Mentoring should also support the development of a reflective and inquiry-based practice where the mentor and mentee reflect on most effective practice (Fischer & Van Andel, 2002, p. 1). Mentorship however involves more than guiding student-teachers to attain teaching skills; it also extends to providing strong and continuous emotional support (Haggard, Dougherty, Turban, & Wilbanks, 2011, p. 288).

While the value of reflection on own learning is widely recognised in the literature, Villegas-Remers (2003) believes that the most effective teacher professional development occurs through interactions among teachers and other role players. Mentoring thus falls within the socio-constructivist theory of learning whereby student-teachers construct knowledge and make meaning of pedagogy through interactions with more knowledgeable teachers who act as mentors. This view is shared by Du Plessis, Marais, Van Schalkwyk, and Weeks (2010, p. 326), who assert that individual knowledge construction occurs in social contexts as learning activities and are socially and contextually bound (Du Plessis et al., 2010). According to Mukeredzi (2013, p. 6) interactions between student-teachers and experienced

teachers provide opportunities for learning *from* and *in* practice through discussion, critique, and evaluation, as well as for support during the implementation (trying out) of new knowledge. This approach to mentorship highlights the role of the mentor in supporting reflective practice.

Butcher (2011, p. 155), Upko (2006, p. 260), and Mukeredzi (2013, p. 13) confirm the critical role of mentoring in DL programmes in the developing contexts but also identify the difficulties in implementing such support mechanism in DL programmes. Upko reports on a model in Nigeria where practising under-qualified teachers are enrolled in DL programmes as part of a government initiative to improve teaching standards in the country. This programme employs a compulsory practicum during which time the development of applied competence is supervised by a mentor (also referred to as a tutor) (Upko, 2006, p. 255). Upko found that where mentors are not sufficiently equipped with the relevant support skills, such a system may not have a positive impact on programme outcomes.

Creed (2001, p. 30) further reports on the challenges posed by mentoring systems when supervision from school principals, qualified teachers, district supervisors, and college tutors is implemented to mediate learning in practice. According to Creed effective mentoring is particularly difficult to manage in rural districts where DL is most employed. Monitoring the quality of mentoring is hampered by distance and mentor-teachers, whom the trainees are assigned to, may be under - or unqualified themselves. Poor physical conditions and few teaching materials may further hamper support for the development of applied competence. To ensure quality support by trained mentors, cost is likely to be the largest single challenge especially where mentors need to be remunerated for support rendered during practicums (Creed, 2001, p. 44). In the context of the programme under investigation, a mentor system will not be easy to implement as the teachers mostly live and work in remote rural areas where sufficient expert teachers to act as mentors may not be available. Since DL is also based on economies of scale, the large number of teachers enrolled for DL programmes further hampers the effective implementation of mentorship models.

Although initial teacher education programmes delivered by the NWU via DL include work-integrated learning components which entail experience learning at a school

under the supervision of a qualified peer or mentor, the programme which is the focus of this investigation does not employ mentors. The under - or unqualified teachers enrolled for this DL programme are practising teachers who are expected to have substantial prior knowledge of teaching practice. However, the practical component which was implemented as part of a DL programme for Foundation Phase teachers in the Northern Cape (§1.4; §4.2) suggested that teachers identify mentors in their schools to support their learning in practice. This was not a compulsory programme requirement and the student-teachers were not formally assessed by mentors.

The literature concurs regarding the value of portfolios and/or journals as a means to guide student-teachers with specific focus on the application of theory in practice. A learning portfolio forms part of the practical component of the DL programme which is the focus of this implementation evaluation study. Therefore, the literature reporting on the implementation of a portfolio in teacher professional development was explored as grounding for the evaluation study. The literature focusing on portfolios in other fields of education was also explored as background to the investigation on the value of such a design feature in the South African context.

3.4.4.3 Portfolios and journals to support and assess applied competence in a DL programme for teacher education

In accord with the definition by Darling-Hammond and Snyder (2000, p. 524) the portfolio which is the focus of this study is viewed as a tool to assemble artefacts of practice, exhibitions of performance and problem-based inquiries in order to capture important attributes of teaching, reasoning about teaching, linking theory to practice and drawing generalizations about practice. According to these authors the process may transform teachers' understandings of both theory and practice. The portfolio is thus not only viewed as a tool for evaluation per se, but also aimed to support a reflective approach to teaching practice that is a hallmark of effective teachers (Santiago & Benavides, 2009, p. 15).

Numerous studies have investigated the portfolio as a means to accommodate the critical elements of effective teacher education programmes (Chen, Lumpe, &

Bishop, 2013; Imhof & Picard, 2009; Kitchenham & Chasteauneuf, 2009; Klenowski, 2002; Ohlhausen & Ford, 1990; Wade & Yarbrough, 1996; S. C. Williams, Davis, Metcalf, & Covington, 2003 to name but a few). The foci of these studies vary regarding the purpose, design, learning outcomes, and the way portfolios can be used as mechanisms to assess teacher applied competence. This gave impetus to an in-depth investigation into the findings to determine the value of portfolios in supporting and assessing applied competence in DL programmes in developing contexts such as the Northern Cape (§4.2). While a detailed discussion of the vast number of studies on portfolios is not feasible, 16 literature sources focusing on portfolios were scrutinised for commonalities. It is acknowledged that this literature review is by no means exhaustive but is regarded as meaningful for the programme component under investigation.

An analysis of the 16 studies served as grounding for exploring the role of the portfolio as design feature in the programme under investigation. The findings were analysed for corresponding key words related to PCK, self-directed learning strategies such as reflection and inquiry based learning, teacher attitudes and motivation as well as aspects related to applied practice (Table 3.1). The country and context in which a portfolio is implemented as well as the type of qualifications are indicated:

Table 3.1: General themes derived from literature on the value of the portfolio for teacher professional development

AUTHOR AND COUNTRY	QUALIFICATION DOMAIN	IDENTIFIED THEMES RELATING TO THE VALUE OF A PORTFOLIO
1. Orland-Barak (2005) Israel	In-service training for teacher-mentors	Reflection Self-directed learning Autonomy Process and product portfolios
2. Shulman (2003) United States of America	Teacher professional development (In-service)	Reflection Applied practice Motivation / teacher attitude Understanding Transformative
3. Chetcuti, Buhagiar and Cardona (2011) Malta	ITE (Pre-service)	Reflection Applied practice

AUTHOR AND COUNTRY	QUALIFICATION DOMAIN	IDENTIFIED THEMES RELATING TO THE VALUE OF A PORTFOLIO
4. Yasin, R. M., Rahman, S., and Ahmad (2012) Malaysia	ITE (Pre-service)	Reflection Life-long learning Sustainable education Transformative / changed practice
5. Wade and Yarbrough (1996) United States of America	ITE (Pre-service)	Reflection Understanding Experience learning Self-directed learning Autonomy
6. Farr Darling (2001) Canada	Professional development (In-service)	Reflection Exploration/inquiry Life-long learning Improved professional attitude
7. Imhof and Picard (2009) Germany	Professional development (In-service)	Improved attitude Applied practice (Student profile is important)
8. Zeichner and Wray (2001) United States of America	ITE (Pre-service)	Reflection Applied competence Inquiry Applied practice Self-directed learning / autonomy Professional attitude / perspectives Assessment mechanism (Student profile is important)
9. Van der Schaaf, Stokkinga and Verloop (2008) The Netherlands	Teacher Professional development (In-service)	Professional attitude / beliefs / motivation Understanding Assessment mechanism (Student profile is important)
10. Loughran and Corrigan (1995) Australia	ITE (Pre-service)	Reflection Applied practice Self-directedness / autonomy Professional attitude / motivation/ beliefs Understanding
11. Wray (2007) United States of America	ITE (Pre-service)	Reflection Self-directedness Applied practice Understanding
12. Berrill and Addison (2010) Canada	in-service professional development	Applied practice Student profile is important
13. Williams, Davis and Covington (2003) United States of America	ITE (Pre-service)	Applied practice Self-directness / autonomy Assessment mechanism
14. *Klenowski* (2002) Published in Canada but refers to the use of portfolios in various countries (Book)	Various contexts	Reflection Applied practice Pedagogical content knowledge Assessment mechanism

AUTHOR AND COUNTRY	QUALIFICATION DOMAIN	IDENTIFIED THEMES RELATING TO THE VALUE OF A PORTFOLIO
15. Galluzzo (2005) United States of America	In-service Professional development	Reflection Transformative / changed practice Applied practice Assessment mechanism
16. *Constantino* (2009) United States of America (Book)	In-service teacher portfolio for professional development	Effective design feature for assessment of professional development

❖ Summary of literature on the portfolio as a way to support and assess applied competence of student-teachers

Various authors have reported on studies investigating the effectiveness of work-integrated portfolios and the impact thereof on student-teacher applied competence. The findings mostly agree that portfolios provide a valuable opportunity for student-teachers to reflect not only on their own skills but also on the relationship between theory and practice. Most authors agree that if portfolios are to be implemented as a tool to support the development of applied teaching competence much thought and planning have to accompany the design and implementation. The listed sources were regarded as sufficient data to draw conclusions on possible implications for the implementation of portfolios in DL programmes – in NICs or LICs. The topics as explored by the various authors are summarised according to the most common themes. Little reference is made to the portfolio as mechanism to support the development of PCK. This may be because a portfolio is mainly viewed as a mechanism to support performance based learning and as a means to provide evidence of practice based learning. However, all other elements of applied competence as identified in the literature are highlighted as values of the portfolio.

Portfolios for SDL and cognition

Although cognitive development is less frequently mentioned as aim of portfolio implementation, the interrelatedness of aspects commonly viewed as outcomes of learning by means of a portfolio such as reflection and experience learning,

play a critical role in cognition. These aspects can therefore not go unheeded and is evident in the analysis of the literature on the use of portfolios.

The interrelatedness between the named elements of applied competence and the way a portfolio supports these elements is highlighted by Wray (2007) who found that for most students the process of selecting artefacts, and reflecting on coursework and fieldwork experiences while constructing their teaching portfolios, contributed to their growth and development. These findings concur with that of Loughran and Corrigan (1995), who identify metacognition as an outcome of the portfolio as learning strategy. According to these authors the portfolio process guides student-teachers to question their own learning.

Although the investigation by Wade and Yarbrough as far back as 1996, focused on reflection as outcome of the use of portfolios, they assert that student-teachers should be guided to take ownership of the portfolio process which will in turn provide opportunities for evaluation of SDL (Wade & Yarbrough, 1996). Williams et al. (2003) also believe that evaluation systems such as the portfolio may support the development of greater accountability in teacher education. Should portfolios successfully guide student-teachers enrolled in DL programmes to take responsibility for their teaching, it could have a significant impact on the teaching and education standards of the country.

Previous research findings which gave impetus to revising the programme under investigation indicated that student-teachers enrolled in DL programmes in South Africa often lack SDL skills (Kruger, 2010, p. 218). The literature confirms that SDL is a critical prerequisite for applied competence and a lack of SDL and SRL has serious implications for the professional development of teachers and consequently also for standards of teaching (§3.2.2) (De Clercq, 2013, p. 50 and 51). Portfolios should thus be investigated to play a role in the critical developmental needs of teachers.

Portfolios for reflection

The value of the portfolio as mechanism to support reflection on learning is evident in the literature. Of the 16 literature sources which focus on portfolios for teacher education 11 report on reflection as significant outcome (Table 3.1).

According to Zeichner and Wray (2001) it is obvious that portfolios promote reflective learning. The question to be asked is how to ensure quality reflection that will challenge teachers to confront difficult issues. Portfolios should mediate authentic reflection by student-teachers by providing a platform where they feel free to express their thoughts and learning processes (Farr Darling, 2001). Darling-Hammond and Snyder (2000, p. 538) also report on the way the process of portfolio construction could include critical conversations regarding the student-teacher's practice with mentors or peers who are part of a portfolio team, as well as reflections on the content of the portfolio. The portfolio thereby does not only serve to facilitate reflection but also mediates experience learning where teachers learn from and with peers and mentors (§3.2.4).

Although most of the findings of these investigations concur regarding the way a portfolio supports reflection on theory as well as on practice, Orland-Barak (2005) warns against assuming that the mere construction of a portfolio automatically yields critical levels of reflection on action. Programme designers should thus be attentive to possible 'abuses' of the tool for purposes which might be beyond the scope of its potential in a particular professional context. In a LIC or NIC such as South Africa, ways should therefore be investigated to ensure that portfolios indeed guide the student-teacher in reflection. In a DL programme this may require strategies such as face-to-face real time support by means of an interactive whiteboard or the implementation of a structured mentoring system.

Portfolios for inquiry

Not many of the sources refer specifically to inquiry as a portfolio aim. Farr Darling (Farr Darling, 2001, p. 119) highlights that portfolios should serve as foundation for exploration and on-going discovery. Inquiry in the form of action

research is also suggested by Zeichner and Wray (2001). The relationship between inquiry learning and lifelong learning highlights the value of portfolios in supporting sustainable applied competence (Farr Darling, 2001, p. 119 and 120; Yasin et al., 2012, p. 3837). If teachers are motivated and guided to find solutions for barriers to effective education and record these solutions as part of their portfolios or in a reflective journal, it could also contribute to the body of scholarship on effective pedagogy.

- **Portfolios for applied practice**

Various authors regard the portfolio as a means to guide applied practice and provide evidence of applied practice and learning from experience. Authors such as Chetcuti, Buhagiar and Cardona (2011), Wade and Yarbrough (1996), Shulman (2003), Zeichner and Wray (2001), Loughran and Corrigan (1995), Wray (2007) and Galluzzo (2005) accentuate the critical interrelationship between reflection and applied practice and have investigated ways to support this learning strategy. While Gallazzu (2005) asserts that portfolios can contribute to the professional development of expert teachers, Klenowski (2002) cautions that alignment of assessment, curriculum, and pedagogy is necessary to ensure that the portfolio contributes to applied competence.

- **Portfolios for a professional attitude**

Supporting the development of a professional and positive attitude of teachers through a portfolio has been mentioned by six of the studies on portfolios for teacher education (Table 3.1) The literature highlights that the value of a portfolio is not limited to the mere compilation of evidence of applied competence for assessment purposes but contributes to the development of a professional attitude and improved motivation. According to Shulman, (2003) the greater understanding brought about by the portfolio contributes to a heightening of motivation which in turn leads to improved teaching practice. Farr Darling (2001) believes that when the portfolio guides the student-teacher to a more inquiry-based approach to practice it will instil a passion for on-going discovery and life-long learning.

Loughran and Corrigan (1995) found that when the portfolio is viewed by student-teachers as a tool to convey their understanding of effective teaching and learning to others, it supports the development of an own philosophy of professional teaching. Such a strategy supports the development of a professional attitude through reflection on teaching as a profession.

- **Portfolios for transformation of education and lifelong learning**

Shulman (2003) as well as Yasin et al. (2012) refer to the transformative value of portfolios as learning strategy. Should key elements of a teacher education programme such as relevant PCK and opportunity for the development of applied practice form part of the programme design, the portfolio could thus serve as a mediator of applied competence by guiding the teacher in reflection and inquiry based on relevant theory and effective practice, in an interrelated manner. Shulman (2003) affirms this notion by describing the portfolio process as continuing and cyclical: “As this process continues and recycles, the teachers learn new visions, new understandings, new practices, with new motivations and a growing capacity to reflect critically on their own work in all these areas.”

- **Portfolios for assessment**

Six of the sources listed in Table 3.1 report on the way a portfolio provides opportunities for organising evidence of applied practice which may serve as assessment tool in teacher education programmes. Banks et al. (2009, p. 5) criticise the effectiveness of written examinations in DL which are also often costly. According to these authors assessment relating to practice through formative modes of assessing, including the use of portfolios and competence models, will contribute more to the reform of education. According to Galluzzo (2005, p. 143) portfolios are the closest measure we have of knowing what goes on in classrooms by giving insights into how teachers think and approach the craft of teaching.

The literature largely agrees regarding the effectiveness of portfolios as assessment tools for outcomes such as reflective and inquiry based practice,

applied competence, and teacher attitudes. Zeichner and Wray (2001) however remark that the context in which portfolios are implemented greatly determine if quality assessment is possible by means of the portfolio. Reference to the implications of the teacher profile as well as the teaching context of the teacher for the portfolio as design feature has been reiterated by other authors (Berrill & Addison, 2010; Imhof & Picard, 2009; Van der Schaaf et al., 2008). The developing context in which the DL programme under investigation is implemented should thus take cognisance of the diverse context of the enrolled teachers and the use of portfolios for assessment requires careful planning and implementation to enable authentic, reliable, and fair assessment.

Portfolios implemented in other fields/domains

According to Dede et al. (2009, p. 15) we can learn much from studies on professional development in other domains such as medicine, law, and industry. Monteiro, Gomes, and Herculano (2011) investigated the portfolio as tool for transformation of adults in informal contexts and confirm the transformative value of the portfolio insofar as it strengthens the autonomy of adults. These authors view the portfolio as a process through which adults learn how to think critically for (and about) themselves, rather than making assumptions based on prevailing beliefs, stereotypes, and points of view. The literature on teacher education in Finland, South Korea, and Canada highlights the development of autonomy and self-determination as contributing to successful teacher education programmes (§2.4).

Bell, Kelton, McDonagh, Mladenovic, and Morrison (2011) documented findings on the way reflective reports supply a way to support and assess the development of reflective thinking by tutors in business education. Although the programme investigated in this study does not include reflective report writing, the findings of the study may be meaningful for future recommendations. Apart from the positive influence on affective outcomes and social learning, Bell et al. (2011, p. 66 and 67) report on the value of reflective reports for the development of critical SDL skills such as reflection, self-evaluation, and self-improvement.

Although reflective journaling does not form part of the evaluand in this study, it often forms part of a learning portfolio. The value of a reflective journal for improved applied competence has been recognised in the literature and could serve to inform future designers of DL programmes. Henderson et al. (2004) report on the effectiveness of a reflective journal in a DL programme implemented in New Zealand for the mediation of critical reflective learning and integration of theory and practice in a communication course. As a consequence of the reflective journal, students gained deeper understanding of the material learnt and improved their professional competence (Henderson et al., 2004, p. 362).

The literature confirms the value of a portfolio for the education of student-teachers via a DL programme in a developing context. However, Koole et al. (2011) cautions that internal and external contextual factors such as motivation, instruction, the character of assessment (formative or summative), and the ability of individual learning environments to stimulate reflection, should be considered in portfolio design and implementation. Although the literature findings also indicate possible pitfalls, it can be assumed that through careful planning and effective implementation the portfolio could contribute in a meaningful way to the applied competence of teachers enrolled in DL programmes in South Africa.

❖ Implications of student-teacher profile for portfolio implementation

Shulman (1987, p. 13) views teaching as comprehension and reasoning, as transformation and reflection. The literature indicates that portfolios have the potential to support these capacities in a teacher education programme. Various authors however identify the student-teacher profile as a determinant of the way a portfolio will meaningfully contribute to applied competence as programme outcome (Berrill & Addison, 2010; Van der Schaaf et al., 2008; Zeichner & Wray, 2001). According to Berril and Addison (2010, p. 1183) the way in which teachers will enact the required competencies in the portfolio is linked inextricably with their identities. The implications of teacher profiles and teaching contexts for sustainable applied

competence is also accentuated in §3.3. These situational factors also have implications for the implementation of the portfolio for reliable and valid assessment of teacher applied competence. Zeichner and Wray (2001, p. 620) warn that the way student context is acknowledged will determine the effectiveness of the portfolio as assessment tool.

3.5 CHAPTER SUMMARY

Chapter two reported on the critical elements of applied competence in teacher education programmes namely PCK, SD skills including reflective and inquiry based learning, the development of a professional attitude and guided applied practice. The literature on these elements and the interrelationship between them were further investigated in Chapter three as well as the relevant literature on design features which could be deployed in a DL programme to support applied competencies such as the use of technology, mentoring, and portfolios.

Since the literature confirms the critical accommodation of the elements of applied competence, a learning portfolio as well as a DVD with audio-visual resources were included as design features of the practical component of a revised DL programme in order to accommodate these core elements (§1.4 and §4.2). The portfolio was implemented as a means to guide and mediate the application of knowledge in practice while technology in the form of a DVD further aimed to scaffold reflection on practice as well as to support teachers to link theory and practice (Fig. 3.3). Evaluating the value of this practical component is important for future DL programme design.

Chapter four sets out the design and process of the implementation evaluation study with specific focus on evaluating the way PCK, self-directed strategies such as reflection and inquiry-based learning, aspects related to the development of a professional attitude as well as guided applied practice, are supported by the design features.

CHAPTER 4

RESEARCH DESIGN AND METHODS

4.1 INTRODUCTION

The literature explored in Chapter two identified core elements to be included in quality education programmes aimed to support teacher applied competence as programme outcome. Chapter three further explored the role played by each of these elements in all teacher education including DL programmes. The interrelatedness of these elements is underscored in the literature. They comprise the development of relevant PCK, self-directed strategies such as learning grounded in reflection and inquiry, support in the development of professional attitudes and guided opportunities to apply new knowledge in practice in a reflective way (§3.2). As a way to address concerns regarding the incapacity of DL programmes to support the applied competence of teachers (§1.5 and §3.4.3), a practical component was designed and incorporated into a revised ACE programme delivered by the Unit for Open Distance Learning of the NWU (§1.2). This programme specifically formed part of a bursary project funded by the NCDoE aimed at the professional development of Foundation Phase teachers in the Northern Cape (§3.1 and §4.2). An exploration of the ways in which teachers consider the practical component to have supported them in the development of applied competence in the South African context, was deemed indispensible for future DL programmes aimed at applied teaching competence as programme outcome[4]. A study was therefore conducted based on this practical component.

This chapter starts with the research setting, explaining the structure and purpose of the revised DL programme that forms the focus of the study. This description sets the background to the problem statement. I further describe the purpose, the paradigmatic considerations, and the design of the empirical study. The chapter also explicates the methods used for data collection and the organising of data for

[4] The research purpose is not to evaluate the ACE Foundation Phase programme but the practical component added to the revised programme with the anticipation that findings would indicate ways to improve the DL programme design in order to support the applied competence of teachers within their contexts; A suggested framework for a DL model based on the findings is discussed in Chapter six

interpretation and construction of knowledge on the way the programme supported applied competence. The data analyses process, based on themes derived from the research questions, is also explained. Measures to strengthen the trustworthiness of the findings and the ethical issues that were considered in order to conduct the research in a sound and professional way are explained. In addition Chapter four describes my role as researcher and possible benefits for the participants.

4.2 RESEARCH SETTING

An explanation of the background, purpose, and structure of the DL programme which is the focus of this study is required to contextualise the research purpose as well as the research design and methods employed to collect and analyse data in search for an answer to the research questions.

4.2.1 The Foundation Phase ACE programme offered by the North-West University Unit for Open Distance Learning

The Foundation Phase ACE programme that forms the focus of this study is delivered by the NWU UODL and geared towards practising Foundation Phase teachers who wish to upgrade their qualifications. The open distance learning model allows teachers to organise their own learning and requires the mastering of content through self-regulated studies within a prescribed time frame.

Apart from detailed tutorials, the teacher (student) support plan includes real life broadcasting of lectures from the NWU campus via interactive whiteboards (IWBs) to centres country wide. These sessions are offered by lecturers responsible for the respective modules within the various programme structures. If time allows, the sessions also provide opportunities for questions posed to the lecturers. Presentations typically include aspects of academic content, explanations of module assignments, and aspects teachers need to study for the examination. Qualified teachers are also appointed to support teachers at centres across the country in selected modules. Facilitators are guided by NWU lecturers regarding content and matters of importance that should be included in the sessions.

Assessment structures and strategies vary for programmes on different NQF levels. Teachers enrolled in the ACE programme need to submit a theoretical assignment for each academic module which is assessed by NWU lecturers or contracted markers. The assignment marks serve as proof of participation and contribute towards a participation mark with no subminimum requirements. Teachers also have two examination opportunities for each module.

The Foundation Phase ACE programme is a year-long programme which teachers can spread over two years. The prerequisites for enrolment for any ACE programme is a professional schooling qualification at level five of the National Qualification Framework (NQF) in the field of professional teacher education, training, and development (South African Department of Education, 2000; South African Qualifications Authority, 2001) as well as a minimum of five years relevant prior learning. The participants are thus practising teachers with prior learning in their respective teaching contexts. In accordance with the NQF, the accredited NWU Foundation Phase ACE programme is offered at level six and consists of seven modules (§1.2). Six of these modules are based on different aspects of Foundation Phase pedagogical content knowledge while one module aims to equip teachers with basic computer literacy skills. This is also the only module that includes a practical examination as performance based assessment (Table 4.1).

The NCDoE put out a tender for the professional development of 260 practicing Foundation Phase teachers employed at various schools in the Northern Cape as part of a bursary project.

Background to the Northern Cape Province

With a total area of 372 889 square kilometres, the Northern Cape Province takes up 30.5% of South Africa's land area, and has a population of 1.15-million people (SouthAfrica.info). Even though this is the largest province in terms of land area, it is home to the smallest population (Moses & Yu, 2009, p. 34).

Just over half of the population speak Afrikaans, the other languages being Setswana, isiXhosa, and English (SouthAfrica.info). The Northern Cape Province is known for its generally low socio-economic position and high unemployment rate. The 50 Foundation Phase teachers enrolled in the first cohort of NCDoE bursary

project are employed in schools situated in the two districts in the Northern Cape which have the highest unemployment rates. They are Pixley ka Seme (highest unemployment level) and Frances Baard district (second highest unemployment level) (Jacobs, Punt, Uchezuba, & Bashi, 2007, p. 15).

(www.worldlicenseplates, 2014)

Fig. 4.1: Graphical representation of the Northern Cape Province

A report by Jacobs et al. (2007, p. 29) shows that the Northern Cape province overall is financially worse off than the rest of South Africa. Most inhabitants earn a living through unskilled agriculture labour (Moses & Yu, 2009, p. 104). In cases where work is not available parents often migrate to more affluent provinces to earn a living (Moses & Yu, 2009, p. 104) and leave their young children behind in the care of family members such as grandparents or older siblings.

A high HIV AIDS rate, substance abuse, as well as family violence occurring as a result of substance abuse, further contributes to poor socio-economic living conditions (South African Government, 2010). According to a media statement in 2010 by the then deputy minister of Social Development, Ms Bathabile Dlamini**,** 10-25% of children in institutions for the intellectually disabled in the Northern Cape Province have a primary diagnosis of foetal alcohol syndrome (FAS). She also highlighted that drug and alcohol addiction had become one of the biggest

challenges in the Northern Cape amid poverty, HIV and AIDS, and underdevelopment (South African Government, 2010).

4.2.2 Implementation of the NCDoE Foundation Phase ACE bursary project

In an agreement between the NCDoE and the NWU 260 practicing teachers were enrolled for the revised NWU Foundation Phase ACE programme as part of a bursary project. According to the tender agreement the purpose of the bursary project was twofold, namely:

I. To develop applied teaching competence in teachers by providing the necessary knowledge, skills, and values, and

II. To equip teachers with knowledge and skills to support learners with special educational needs (Kruger, 2011).

In order to comply with the second goal, two academic modules based on aspects of LSEN were included as part of the original ACE curriculum. The first goal, namely the development of applied competence through a DL programme, required an exploration of the literature regarding elements of applied competence and ways to incorporate these into an existing DL programme for Foundation Phase teachers. A thorough literature investigation showed that countries considered successful with regards to teacher education value PCK, self-regulated strategies such as reflective and inquiry learning, the development of professional attitudes, and opportunities for guided application of knowledge in practice as key elements of effective teacher education (§2.4). The literature further confirmed the critical roles of these elements in the development of applied competence in teachers (§3.2). Based on the literature and own previous research findings (§1.4 and §3.4), a practice-based component was designed and included as part of the original ACE Foundation Phase programme. Two design features namely a learning portfolio and audio-visual materials (DVD) were included in the revised programme to support the applied

competence of these teachers[5] (§1.4, §3.4.4, Fig. 3.3). The learning portfolio compiled by each teacher further served as an opportunity for performance-based assessment insofar as teachers had to provide evidence of applied competence.

Teachers were enrolled in three consecutive cohorts. The first cohort of 50 teachers, which makes out the focus of this study, was registered for the revised two-year DL programme during the timeframe November 2010 to October 2012. These were practicing teachers in two Northern Cape districts, namely Frances Baard and Pixley Ka Seme. Although the revised Foundation Phase ACE curriculum (Table 4.1) is organised according to this two-year time frame, the open learning system of the NWU UODL allows teachers an additional year to complete their studies should they not pass all the modules within two years. The open learning system also allows teachers the choice to organise their studies within the maximum three year time frame. However, as part of the NCDoE bursary project teachers were motivated to keep to the prescribed two-year time frame as far as possible.

The **first year** of the programme (November 2010 to October 2011) mostly relied on self-regulated mastering of theoretical content of academic modules as a means to attain the outcomes of the accredited Foundation Phase ACE programme. Although substantive content knowledge forms part of the curriculum, the theoretical component does not form part of this study as the main focus is on the practical component which was implemented in the second year of the revised programme. Lectures broadcasted during the both the first year and second year provided opportunities for knowledge transfer and questioning while facilitators at the centres supported teachers with problems they may have experienced during self-study. Academic support was also available either telephonically or via email.

During the **second year** (November 2011/October 2012) the practical component devised to support applied competence was implemented. This component entailed the compilation of a *learning portfolio* based on various aspects of Foundation Phase education. While the learning portfolio served as design feature to guide teachers in

[5] Although literature also highlights mentorship as a meaningful way to support applied competence in a DL programme, funding and logistics hampered the formal implementation of a mentor system as part of this bursary project. A model for DL programmes aiming to support applied competence of teachers as discussed in Chapter six, however accommodates this important aspect as design feature.

the development of applied competence, it also gave teachers the opportunity to demonstrate how they attained the outcomes of the programme. A *study guide* systematically steered the teachers through the *seven manuals* based on seven core aspects of Foundation Phase education namely i) classroom management, ii) teaching and learning, iii) perceptual skills, iv) language, v) mathematics, vi) life skills, and vii) supporting LSEN in the Foundation Phase. The study guide further explained practical tasks to be included in the seven correlating subsections of the learning portfolio. These tasks included designing and collecting of assessment instruments and documents needed for effective classroom management, a reflection on own theory of effective teaching and learning, designing teaching and learning material, collaborative planning and implementation of learning experiences in the subjects Language, Mathematics and Life Skills, and critical reflection on own practice. Teachers further had to apply new knowledge gained on LSEN by identifying and supporting a learner with special learning needs. The aim of the portfolio process was thus not only to provide additional PCK but also to guide teachers in the application of knowledge in practice and to support the development of a reflective and inquiry based practice.

The study material further included a *digital video disc (DVD)* with audio-visual learning material such as real life classroom settings, examples of resources, and teaching and learning scenarios. The purpose of the DVD was to support teachers in linking theory to practice, and guiding them in reflection on practice and the implications of theory for practice. The study guide therefore continuously referred teachers to inserts on the DVD as well as related theory contained in the respective manuals (Refer to DVD - NC bursary project). The curriculum and programme roll-out is set out in Table 4.1.

Together with the learning portfolio, two academic modules formed part of the second year curriculum which focussed on inclusive education and curriculum implementation respectively. Apart from the fact that these modules were deemed relevant for practice, the open learning system required that the programme structure included academic modules in the second year to prevent completion of the original curriculum after the first year without completing the additional practical component (Table 4.1).

Although lectures on academic modules and sessions explaining the portfolio process were broadcasted through the interactive whiteboard, mastering of the content and skills geared at applied competence in the second year of the programme required self-regulated learning and application of practical tasks as well as collaboration with fellow teachers registered for the bursary programme. The NWU facilitators at the two centres were also instructed to support the teachers during scheduled sessions to link theory to practice by leading discussions on practice-based content, to explain portfolio tasks, and to provide formative feedback on the portfolio process. At the end of the two year programme the learning portfolios were submitted for summative assessment by the NWU lecturers.

Table 4.1: Revised curriculum and programme roll-out for Foundation Phase ACE programme implemented as part of a bursary project in the Northern Cape

FIRST YEAR: Theoretic component (November 2011 – October 2012)			
1st Year Semester 1	**Academic modules to be completed during the first semester:**		
	ORAK 511	Educational law, Systems and Management	
	FSET 511	Education Theory	
	ORLK 511	Teaching and Learning	
	EUCE 511	End-User Computing for Educators	
1st Year Semester 2	**Academic modules to be completed during the second semester:**		
	FROF 571	Introduction to Curriculum (Numeracy, Literacy and Life Skills	
	FROL 571	Technology in the Foundation Phase (Life Skills)	
	***LSDL 528**	**Disabilities and Learning Difficulties in Education**	
SECOND YEAR: Including the practical component (November 2012 – October 2013)			
2nd Year – Semester 1	**Academic modules to be completed during the first semester:**		**DVD with audio-visual resources**
	***LSIE 518**	**Inclusive Education: A Policy Perspective**	
2nd Year Semester 2	**Modules to be completed during the second semester:**		
	FROG 571	Application of Curriculum (Numeracy, Literacy and Life Skills)	
2nd Year Semester 1 & 2	***Learning Portfolio**	**Professional Development of the Foundation Phase Teacher (Seven sections) (Applied Competence)**	

*Shaded cells indicate components added to the existing accredited programme

Programme monitoring and reporting on the teachers' progress and outcomes formed part of the agreement between the NWU and the NCDoE. Although this study does not form part of the agreement and is not funded by the NCDoE, the data collected as part of the agreement (first level) (§1.7.3.2), together with data collected in adherence to the requirements of the PhD study (second level), were analysed and the findings synthesised to search for answers to the research question.

The ***first level*** of data collection which included semi-structured questionnaires and a focus-group interview was thus conducted as part of the agreement with the NCDoE, namely to monitor the process and to support the teachers in their studies. The ***second level*** entailed the gathering of additional data to support the initial data. The data involved individual interviews with teachers to permit a deeper investigation of the programme with specific focus on the experiences of the teachers regarding the ways in which the programme supported their applied competence in their context (Table 1.1).

Data collected on both levels were explored to determine the way the practical component of the programme supported the development of teachers' applied competence. Samples relating to methods implemented on both levels are explained and motivated in §4.5.

4.3 PURPOSE OF THE EMPIRICAL RESEARCH

There appears to be a lack of reports based on teacher experiences about the way design features of DL programmes implemented in South Africa have contributed to applied competence (§1.4). This investigation specifically sets out to evaluate the ways in which the practical component, added to an existing DL programme, met the professional needs of the target teacher population in order to support their applied competence as programme outcome in their context, namely the Northern Cape Province of South Africa. First-hand information collected from the teachers regarding their profiles and contexts, their learning needs, their expectations for the programme, and their experiences of the way the practical component supported the development of their applied competence, therefore forms part of the multiple data collecting methods. Hearing the voices of the target teacher population on DL programme design is expected to guide future programme designers on ways to

align design features with the learning needs of the target teacher population with specific focus on ways to support applied competence.

This research thus aimed to find answers to the following research question:

> *How does a practical component, included as part of a revised DL professional development programme of the NWU implemented in the Northern Cape, support Foundation Phase teachers' applied competence?*

In Chapter one (§1.5.4.1) various related questions that directed both the literature as well as the empirical studies were asked. The following questions are of particular relevance to the empirical study:

- What are the theoretical and conceptual implications of the profile and teaching context of Northern Cape Foundation Phase teacher enrolled in the DL professional development programme?
- What are the expectations of Foundation Phase teachers regarding the way in which the practical component of the DL professional development programme will support applied competence in their contexts?
- How do Foundation Phase teachers experience the practical component of the DL professional development programme in terms of supporting the development of their applied competence?
- To what extent do the learning portfolios of Foundation Phase teachers enrolled in the DL professional development programme interrogate evidence of applied competence?
- How do the findings from the literature and the empirical study explicate critical elements to be accommodated in a model for a DL programme aiming to support Foundation Phase teachers' applied competence?

An in-depth explanation of the research setting was deemed necessary as further motivation for and grounding of the empirical investigation.

4.4 RESEARCH DESIGN

Denzin and Lincoln (2005, p. 25) describe a research design as a flexible set of guidelines that connect theoretical paradigms to strategies of inquiries and to methods for collecting empirical data. The following section explicates the research paradigm and the research approach.

4.4.1 Research paradigm

According to Potgieter (2008) a paradigm marks out, in an agreed and deep-seated sense, a way of seeing the world and how it should be studied, and that this view is shared by scientists. A paradigm is thus based on a specific shared approach to a social theory. The investigation has been approached from a *constructivist* paradigm; an approach that falls under an interpretivist philosophical orientation (Guba & Lincoln, 1994, pp. 109-111). In his responsive model of programme evaluation, Stake, (2004, 2006) (as cited by Mertens, 2010, p. 59), compares an observed value with a standard defined by the expectations and criteria for a programme. According to this model, the observed programme values are based on the elements of applied competence actually held by the programme by collecting data from teachers enrolled for the programme. The object under investigation, namely the practical component of a DL programme, is interactively linked with the values of the investigator as well as with the values of the teachers which inevitably influence the inquiry. The sociological approach, where the aim is to search for understanding of the world as experienced by the participant rather than by the objective observation of the researcher, is thus expected to be value-mediated and implies that varying constructions are interpreted using mainly hermeneutical and dialectic methodology.

Hermeneutics seeks to understand situations through the eyes of the participants, and is based on the view that reality is socially constructed through interaction and language (Cohen, Manion, & Morrison, 2007, p. 27). Dialectic philosophy is defined as “a method of discovering the truth of ideas by discussion and logical argument and by

considering ideas that are opposed to each other." (Hornby, 2010, p. 402). In this study I thus set out to hear the voice of the teacher from various perspectives through multiple data collecting methods. I further interpreted the responses through logical reasoning taking all possible motives for participant responses into account to construct meaning with regards to the true value of the programme.

The study tends more towards the sociology of regulation and focuses on finding out *how does* the practical component of the DL programme supports the development of applied competence of practicing Foundation Phase teachers. It was anticipated that the findings of this study may show new understandings of *how should* applied competence be supported in a DL programme if teachers are to be equipped to apply new knowledge and skills in their own contexts (Burrell & Morgan, 1979, p. 22) (Fig. 4.2).

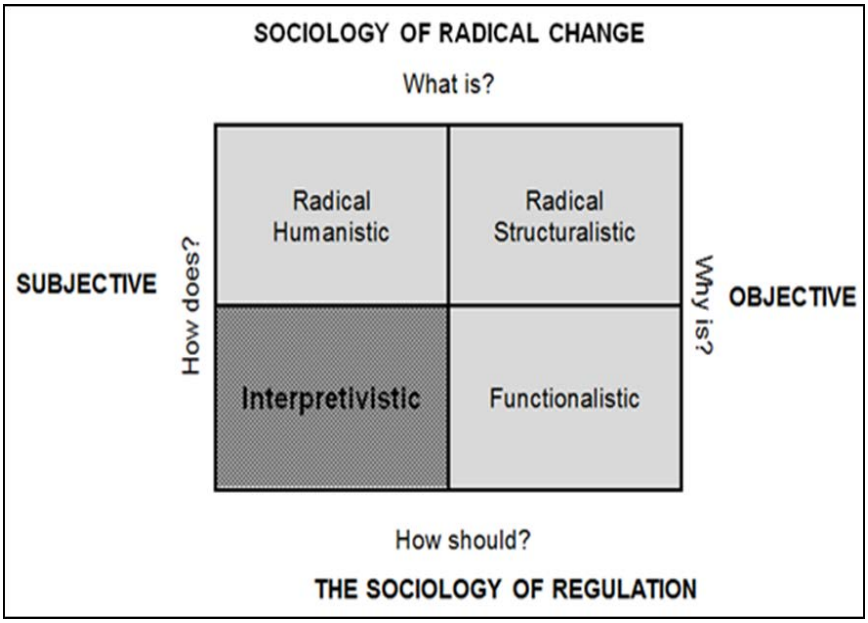

Fig. 4.2: The four paradigms of the epistemological nature of social theory (Burrell & Morgan, 1979, p. 22)

It is anticipated that the findings of this study will contribute toward new understandings of how applied competence should be supported in a DL programme if teachers are to apply new knowledge and skills in their own contexts (§6.4 and §6.5).

Researchers differentiate between three lenses through which the nature of the social world is viewed namely ***ontology*** (what is reality?), ***epistemology*** (how do you know something?) and ***methodology*** (how do you go about finding out?) (Denzin & Lincoln, 2005, p. 22; Guba & Lincoln, 1994, p. 112; 2005, p. 192) (§1.7.1 and §6.1). Burrel and Morgan (1979, pp. 1-7) refer to a fourth lens namely the ***human nature*** (the relationship between human beings and their environment).

The *ontology* that directs this study is based on the view that reality is constructed socially by individuals through describing, making sense of and negotiating the external world. In this study the emphasis is on the relativistic nature of the social world where knowledge is a social reality, value-laden and it only comes to light through individual interpretation (Burrell & Morgan, 1979, p. 4). In this study the experiences of the participating teachers represent the reality of the programme value. The reality is thus viewed as the product of individual consciousness and cognition.

Questions regarding human understanding of the world and the way this understanding is communicated, interrogate the ***epistemological nature*** of man (how humans learn) (Burrell & Morgan, 1979:5). The constructivist-interpretivist paradigm recognises that an increase in knowledge is essentially a cumulative process during which new insights are added to already existing knowledge and incorrect knowledge can be eliminated. According to Burrell and Morgan (1979:24) this approach relates to the sociology searching for an understanding of the world as experienced by the participant rather than through objective observation by the researcher, and falls within a subjectivist-interpretivist paradigm (Fig. 4.2). I acknowledge that my interpretation of the data was shaped by my own experience as teacher-educator and programme designer. The real value of the DL programme component was based on my interpretations of participants' experiences of the way the component contributed to their applied competence. A subjective *interpretive epistemology* thus directed the investigation where I wanted to gain understanding of and construct knowledge on the value of the practical component through interpreting the participants' experiences of the way the practical component contributed to their applied competence. Dialogic input of the participants was interpreted to understand and explain their experiences of the programme in their diverse teaching context.

This stance is grounded in the putative conviction that if teachers are to be actively engaged in their own learning, their voices must be heard (Cook-Sather, 2002, p. 10). Such an approach was expected to render information necessary to address the specific learning needs of the Foundation Phase teacher through DL programme design in the diverse South African teaching context. If programmes are to support the applied competence of teachers it is important to accommodate the teacher profile as well as the teaching context in which the teachers are required to apply these competencies (M. G. Moore, 2007a, p. 134).

In this study my view of ***human nature*** and the role played by man in his relationship with the social world, is on a continuum between determinism and voluntarism and both are situated and natural factors which should be acknowledged as determinants of human actions (Burrell & Morgan, 1979, pp. 2, 6). Should the world of a teacher be characterised by relative poverty and a lack of educational structures, it can have a detrimental effect on the teacher's life, the way the world is experienced, and the way knowledge is constructed (determinism). Although the role of the environment in teachers' experiences is recognised, Foundation Phase teachers enrolled in the ACE programme are viewed as having the capacity to act according to their own free will, and that voluntary actions can serve to change their classroom practices irrespective of situational factors (voluntarism).

My ontological and epistemological approach to the social world had methodological implications for how I evaluated the programme. As I aimed to search for first-hand knowledge of the social world namely the way the practical component of a DL programme supports Foundation Phase teacher applied competence, this study followed an ideographic approach to the ***methodological nature*** of social science. Although nomothetic methods were implemented to gather and analyse descriptive statistical data to support the qualitative data, the methods followed an interpretivist approach relying on the perspectives of the individuals involved in the phenomenon investigated, to come to a true understanding of the problem (Burrell et al., 1979:6, 7).

4.4.2 Research approach

The study followed a *qualitative approach* to programme evaluation where the concern is with a greater understanding of the way a practical component supports Foundation Phase teacher applied competence within a specific context. Creswell (2008, p. 2) defines qualitative research as "an enquiry process of understanding a social or human problem, based on building a complex, holistic picture, formed with words, reporting detailed views of informants, and conducted in a natural setting." Qualitative data were collected through interactive methods as well as non-interactive methods. Quantitative data collected through semi-structured questionnaires served as descriptive data to support the qualitative data while document analysis was also used to evaluate the value of the learning portfolio as instrument for the development and assessment of applied competence (§4.5 and §4.6).

In concurrence with Denzin and Lincoln (in Denzin & Lincoln, 2005, p. 4) this qualitative study deploys a wide range of interconnected interpretive practices to better understand the way a practical programme component supports teacher applied competence since each practice makes the social world visible in a different way. A mainly interpretive approach to research was followed; this approach places less emphasis on numbers and more emphasis on values and context (McMillan & Schumacher, 2010, p. 6).

A literature search on strategies employed for programme evaluation studies in the field of education yielded quantitative *experimental studies* with a pre and post-test design (Gijbels et al., 2009), *qualitative longitudinal studies* based on narrative inquiry (Stanley, 1998), a *qualitative case-study* approach (Asunka, 2008), as well as the implementation of *multiple methods* to evaluate and improve DL programmes for teacher education in Korea (Shon & Lee, 2006). In this study I did not wish to evaluate the whole DL programme as such but rather to explore the way a practical component added to a DL programme (the evaluand), resulting in a revised version of an existing DL programme, supported the applied competence of Foundation Phase teachers practising in the Northern Cape. In line with the approach to programme evaluation used by Shon and Lee (2006), I employed multiple methods to collect data in order to explore and interpret the evaluand from various

perspectives to construct meaning of the value of the programme component in supporting applied competence.

4.5 RESEARCH METHODS

Different data collecting methods collected data from different samples of the study population (§1.7.3.1 and Table 1.1).

4.5.1 Population and sample

The study population comprised the whole group of 260 practising Foundation Phase teachers enrolled by the NCDoE for the bursary project from 2010 to 2015 while the target group of the study comprised the 50 Foundation Phase teachers enrolled as the first of three cohorts (N=50). These teachers attended contact sessions at two venues, namely 26 teachers at the NIHE Campus in Kimberley (Frances Baard district), and 24 teachers at the Northern Cape Rural FET College in De Aar (Pixley Ka Seme district). This group started the two year programme in November 2010 and most of the teachers completed the programme at the end of 2012. Two teachers terminated their studies prematurely and the total target group thus contained 48 practising Foundation Phase teachers. The data were collected from varying samples drawn from the target group which are explained in more detail in Chapter four (§4.5).

Nonprobability sampling is the most common type of sampling in educational research (McMillan & Schumacher, 2010, p. 137). A combination of mainly ***purposive and convenience sampling*** was implemented. In *purposive sampling* the researcher selects particular elements from the population that is representative or informative about the topic of interest (McMillan & Schumacher, 2010, p. 138). In this study the purpose of the selection was based on the participants' knowledge of the practical component included in a revised ACE Foundation Phase programme. The whole group of 48 Foundation Phase teachers enrolled in the revised ACE programme thus adhered to the criteria for a purposive sample of this study. As long distances between me as the researcher and the study population hampered the selection of a more representative sample, convenience sampling was used for the

multiple data collection methods. *Convenience sampling* implies a convenient choice of cases which are available such as teachers enrolled in a specific programme, or asking persons to voluntarily participate based on geographical accessibility (McMillan & Schumacher, 2010, p. 137). While the target population remained the same for all the data collecting strategies, namely the total number of teachers enrolled in 2011 by the NCDoE for the first cohort of the Foundation Phase ACE bursary project (N=48), the sample varied for different methods of the data collection as explained in the following section.

4.5.2 Data collecting methods with respective sites and sampling

Multiple methods of data collection were used to strengthen the findings of this qualitative study which set out to understand the ways in which the practical programme component contributed to the development of applied competence by the target group.

Darling-Hammond and Snyder (2000, p. 527) uphold that observation alone cannot authentically evaluate teacher applied competence as many aspects of teaching are only indirectly visible during classroom practice. Observation was therefore not used as data collecting method for this study; self-directed strategies such as the reflection *on* and analysis *of* own strengths and weaknesses, planning how to represent content and how to adapt lessons to the needs of particular learners, overcoming challenges, professional attitude, and the ability to collaborate with colleagues, are not observable competencies. Darling-Hammond and Snyder (2000, p. 527) further describe classroom observations as remote proxies for the actual evaluation of teachers' knowledge, skills, and dispositions, and suggest that methods such as interviews, teacher reflections and analysis, and other artefacts that represent these aspects of practice, may better meet the underlying principle of authentic exploration of applied competence as programme outcome. (Reason, 1994, p. 49)

The value of a more participatory approach in qualitative research is highlighted in the literature (Reason, 1994, p. 49; Volante, 2006, p. 168). Although performance-based assessment forms part of this programme in which the learning portfolios of teachers are evaluated, the primary aim of this study was to hear the voices of the teachers regarding their lived experiences about the way the programme supported

(or did not support) their applied competence. The study used interactive as well as non-interactive data collection strategies and aimed to provide an in-depth description drawn from the target group based on various data collecting methods (Chapter one, Table 1.1 and Table 1.2).

According to McMillan and Schumacher (2010, p. 336) people, time, and the place of events or interviews may directly or indirectly play a role in data analysis and should be described physically, socially, interpersonally, and functionally. Qualitative data were collected during each of the three stages of the study namely at the onset of the programme *(pre-implementation),* after completion of the first theoretical year *(mid-term programme monitoring),* and again after the teachers completed the second year of the two-year ACE programme which included the practical component *(post-implementation)* (Chapter one, Table 1.1). Although the interpretive methodology focussed on qualitative data, descriptive quantitative data were also collected at the onset of the practical component and again after the programme implementation. Specific methods used to collect data during the three stages had implications for sites and sampling. Therefore the methods, sites, and sampling used for data collection are explained in an integrated way.

4.5.2.1 Pre-implementation data collecting

Data were collected at the onset of the implementation of the two year programme. All research instruments are included in Appendix B.

Semi-structured questionnaires

Gay et al. (2011, p. 388) define a questionnaire as a written collection of self-report questions to be answered by a selected group of research participants. All the teachers enrolled for the first intake of this NCDoE bursary project were invited to voluntary complete a ***semi-structured questionnaire*** (PreQ) (Appendix B). Tait (2000, pp. 290, 291) contends that designers of a DL programme should know who the teachers are in order to determine if a programme suits the learning needs of the target population.

Apart from providing information on their demographic information, the teachers responded via Likert-type questions regarding their expectations of the programme

as well as their views of their own professional learning needs with specific reference to knowledge and skills required for Foundation Phase teaching competence. Opportunities were also provided for teachers to freely comment on any questions of the questionnaire. Apart from clarifying and motivating their answers, these comments also provided opportunities for the teachers to express their general feelings and beliefs with regards to the programme; the literature confirms the impact of attitudinal factors on learning outcomes (§3.2.3). As the teachers did not enrol out of free will but were identified by the NCDoE as in need of additional professional development, it could have contributed to feelings of low self-efficacy or negativity towards the programme. Responses were analysed and compared with the data collected through other methods as a form of methodological triangulation (Denzin & Lincoln, 1994, p. 215) (§4.8).

A total of 39 (N=39) out of 48 teachers opted to complete the PreQ, of which seventeen (n=17) attended the session at the De Aar FET Campus, and 22 (n=22) at the NIHE Campus in Kimberley.

4.5.2.2 Data collected through mid-term monitoring process

Focus-group interview

A focus-group interview was conducted after completion of the first year (2011), at the start of the second year (2012) of the programme. According to Denzin and Lincoln (2005, p. 648) focus-groups reduce the distance between the researcher and the researched. These authors are of the opinion that the 'multivocality' of the participants limits the control of the researcher over the research process. The focus-group interview was therefore regarded as an opportunity for teachers to freely express and share their thoughts on the programme in a small group. It was anticipated that hearing the views of other teachers might encourage them to voice their own thoughts whether in agreement or disagreement - which could provide valuable data on the teachers' true expectations and experiences of the programme.

Although Merriam (2009, p. 94) indicates that there are no hard and fast rules regarding the number of participants in a focus-group interview, she posits that most authors suggest somewhere between six and ten. However, because of limited time

available and the participants having to travel long distances to the contact centre, all 15 teachers who attended the first contact session were asked to voluntarily participate in a focus-group interview. The focus-group interview schedule guided the teachers to express their expectations for the second year including the practical component which was also the evaluand of the study (§4.2.2).

Written expectations for second year

Additional to the focus-group interview, all the teachers attending the session at the NIHE Campus in Kimberley (Frances Baard district) were asked to write down their ***expectations for the second year*** which included the practical component. While the focus-group interview gave the teachers the opportunity to freely express their views and to voice their needs, expectations and thoughts regarding the programme, written expectations also provided opportunities for teachers who did not have the courage to speak in the group, to voice their thoughts on the programme and on aspects that may hinder the development of their applied competence as programme outcome.

4.5.2.3 Post-implementation data collecting

Semi-structured questionnaire

The whole group of teachers enrolled for the specific intake (n=48) were invited to voluntary complete a ***semi-structured questionnaire*** (PostQ) (Appendix B). The willing participants completed the questionnaires at the respective exam centres in Kimberley and De Aar after writing their final exam paper for the programme. The questionnaire required of the participants to respond regarding their biographic information, the way they experienced the programme to have contributed to the development of their knowledge, skills, and attitudes regarding Foundation Phase education, the component that has contributed most to their applied competence (i.e. the theoretical or practical component), and the barriers they may have experienced during the programme. Thirty six (n=36) participants opted to voluntary complete the PostQ of which 16 (n=16) wrote the exam at the De Aar exam centre and 20 (n=20) at the Kimberley exam centre. The purpose of this instrument was to collect descriptive data on the way the teachers experienced the practical component of the

programme to have supported their applied competence with specific reference to knowledge, skills, and attitudes relevant to Foundation Phase teaching practice.

Individual interviews

Four teachers participated in semi-structured interviews (n=4). According to Merriam (2009, p. 89 and 90) a semi-structured interview includes a mix of more and less structured interview questions, all the questions are flexible, and the largest part of the interview is guided by a list of questions or issues to be explored. She asserts that this format allows the researcher to respond to the situation at hand, to the emerging worldview of the respondent, and to new ideas about the topic. An interview schedule was compiled to guide the interview and to ensure that all the participants responded to the same issues (Appendix B). The purpose of the interviews was to determine how the participants experienced the learning portfolio as part of the practical component of the programme to have supported their applied competence. Therefore the participants' completed portfolios served as focus point for the individual interviews and questions focussed on the various portfolio sections.

The teachers identified by the NCDoE for school visits were asked to recount their experiences of the ways in which the learning portfolio supported the development of their applied competence in individual semi-structured interviews. Since the teachers had to submit their learning portfolios by 30 September 2012, these interviews were conducted during November 2012. According to Berg (2004, p. 205) this technique provides access to individual points of view and an understanding of the phenomenon investigated. Although convenience sampling is regarded as highly unrepresentative (Neuman, 2006, p. 220), the sample of 4 teachers were identified by the NCDoE for school visits. Due to time and financial constraints, the teachers were approached during school monitoring visits and requested to voluntarily participate in the interviews.

Document analysis

Document analysis for the exploration of the way a learning portfolio serves as opportunity for authentic demonstration of applied competence in a DL programme as well as for the evaluation of teacher applied competence, further served as a way to collect descriptive data. Ten learning portfolios were randomly selected by choosing every fourth teacher on the alphabetic list of enrolments that formed part of the first cohort of 48 teachers for document analysis. Document analysis is typically implemented in a design where multiple perceptions are required to clarify meaning and to enhance trustworthiness (Creswell, 2009, p. 181; Stake, 2005, p. 454).

According to Mertens (2010, p. 352) document analysis requires a clear understanding of what the researcher is looking for. I designed a rubric based on the elements of applied competence identified from the literature as instrument to evaluate the ten learning portfolios regarding the way they demonstrated the development of applied competence (Appendix B). The rubric entails a Likert scale to evaluate the way each of the seven sections of the learning portfolio provided evidence of *PCK, reflective and inquiry learning,* demonstration of a *professional attitude* and *application of knowledge in practice* as programme outcome. The scale varies from *advanced*, *proficient*, *functional* and *developing* evidence of these applied competencies. In order to increase trustworthiness, an objective qualified person was asked to also evaluate the same learning portfolios independently for peer validation. This person, who has been a lecturer for Foundation Phase student-teachers for 30 years (§4.8.3); was informed with regards to the evaluation purpose and process. The two evaluations were compared and used as measure for evidence of the elements of applied competence interrogated through the learning portfolio.

4.6 DATA ANALYSIS

An inductive approach was followed in conjunction with a deductive effort in order to render an empirically derived theoretical model of the relationship between the teacher profile and teaching context of teachers, the design features of the practical component and outcomes framed in terms of important contextual factors (Patton, 2008, pp. 344, 345). The evaluation study drew on the dominant theoretical conditions for elements of applied competence to construct meaning of the

relationship between the practical component of the DL programme and the outcomes of the programme (Patton, 2008, p. 344). Data analysis thus required benchmarking the programme outcomes as experienced by the participants against the policy requirements regarding applied competence as outcome of teacher education programmes (§2.4), as well as the criteria for applied teaching competence as identified in the literature (§3.2). The teacher education policy document (MRTEQ) (South African Department of Higher Education and Training, 2011) was scrutinised to determine if the policy correlates with the literature findings regarding the core elements to be included in a programme in order to support applied competence. These correlating concepts served as super codes for deductive data analysis and are illustrated in Table 4.2:

Table 4.2: Identifying themes for data analysis

Requirements set out by policy to support applied knowledge in practice(South African Department of Higher Education and Training, 2011, pp. 10-12) (MRTEQ)	**Elements of applied competence identified from literature (Chapters two and three):**
• Integrated and applied knowledge: [ ] *by explicitly placing knowledge, reflection, connection, synthesis and research in the foreground, it gives renewed emphasis to what is to be* learned and how it is to be learnt. (South African Department of Higher Education and Training, 2011, p. 10) • Disciplinary learning • Pedagogical learning (South African Department of Higher Education and Training, 2011, p. 11)	• Self-directed learning o Inquiry based learning o Reflection on theory o Reflection on and in practice • Pedagogical content knowledge
• Professional values and attitudes *Professional ethics and the development of professional attitudes and values constitute the key elements of all teacher education programmes.* (South African Department of Higher Education and Training, 2011, p. 12)	• Teacher professional attitude and motivation
• Practical learning *WIL takes place in the workplace and can include aspects of learning from practice (e.g. observing and reflecting on lessons taught by others) as well as learning in practice (e.g. preparing, teaching and reflecting on lesson presented by oneself).* (South African Department of Higher Education and Training, 2011, p. 11)	• Guided applied practice

From the analysis of the literature and policies on elements of applied competence, it is clear that PCK, self-directed learning through reflection and inquiry based learning, the development of a professional attitude and opportunities for application of knowledge in practice form part of the critical elements of teacher education policy in South Africa. Strategies to analyse the data were determined by the respective data gathering methods.

4.6.1 Analysis of data gathered through qualitative methods

Mayring (2000) defines qualitative analysis of content as *an approach of empirical, methodological controlled analysis of texts within their context of communication, following content analytic rules and step by step models, without rash quantification.* According to Merriam (2009, p. 16) findings inductively derived from data in a qualitative study are in the form of themes, categories and even theory about a particular aspect of practice. She accentuates however that all investigations are informed by a discipline-specific theoretical framework that enables the researcher to focus the inquiry and interpret the data.

The following themes formed the core of the qualitative data analysis in order to find answers to the research question and sub-questions:

- The profile of the teacher
- The context of the teacher
- Teachers' expectations for the programme
- Experiences of the teachers with regards to the programme

These themes and how they relate to the questions are depicted in Fig. 4.3. The categories used for analysing the portfolios to determine to which extent the learning portfolios interrogate evidence of applied competence, is also indicated in Fig, 4.3. However, this document analysis process used an assessment instrument and not a coding scheme.

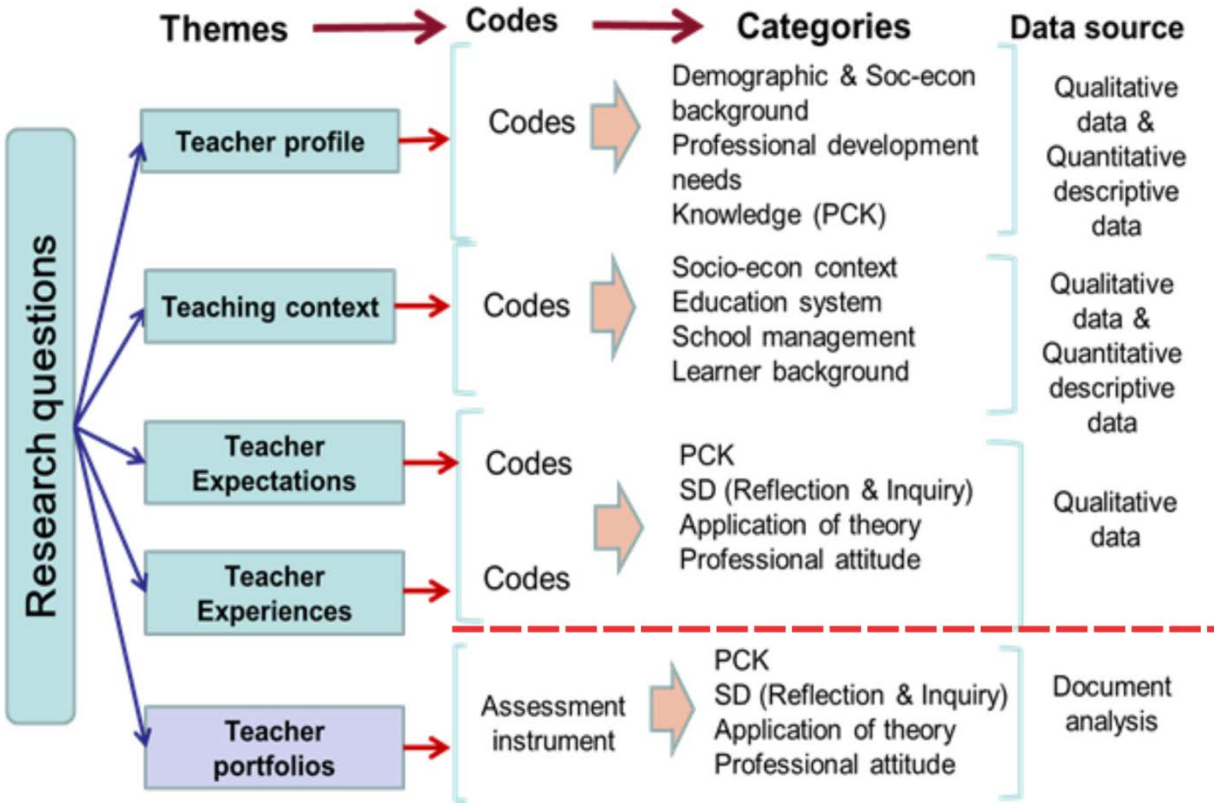

Fig. 4.3: Themes for data coding and analysis derived from the research questions

4.6.1.1 The profile and teaching context of the teacher

Although quantitative data collected through the questionnaires were used to form a picture of the teacher profile and teaching context, all qualitative data were perused for quotations describing the profile and the teaching context of the teacher in order to develop theory from the ground up as I wanted to create a picture from detailed information obtained (McMillan & Schumacher, 2010, p. 367). Inductive reasoning was therefore applied to analyse data and to synthesise the information to make generalisations regarding the profile and teaching context of the Foundation Phase teacher practicing in the Northern Cape. Through this inductive process patterns and themes were identified form the data. This data were compared with quantitative data on these themes.

4.6.1.2 Teachers' expectations and experiences of the programme

The analysis of data on these themes used inductive reasoning processes. However, this process was focused by the theoretical framework (Merriam, 2009, p. 16) (Fig. 3.1 and Table 4.2). Since the focus was on determining the way the programme supported the applied competence of Foundation Phase teachers through a DL programme, elements of applied competence as derived from literature (Fig. 3.1 and Table 4.2) were used as categories to guide the coding process. Although data is not gathered to prove or disprove a hypothesis through deduction, general themes regarding core elements of applied teaching competence identified in the literature served as point of departure for the coding of the data. During the data analysis process I thus searched for quotations related to the elements of applied competence. Text-segments were compared and contrasted to identify context bearing data segments while naming and classifying categories related to the themes (McMillan & Schumacher, 2001, p. 464). I was open to new categories that may emerge from the coding of data and searched for quotations in relation to the development or obstruction of applied competence through the DL programme design, content, and delivery. During the data analysis I searched for alternative explanations and negative evidence that may challenge or modify emerging patterns regarding the way the practical component supported the applied competence of the Foundation Phase teachers (McMillan & Schumacher, 2010, p. 337).

4.6.1.3 Using ATLASti™[6] for data analysis

The computer-based qualitative data analysis software programme, ATLASti™, was used to analyse the qualitative data and to identify patterns. ATLASti™ is a specialised software package that allows the researcher to extract, categorise, and interlink data segments from a large variety and volume of source documents (Friese, 2012, p. 6). The data gathered through interviews, written reflections on the programme, focus-group interview, and open-ended questions in the semi-structured questionnaires were transcribed and allocated to a hermeneutic unit in ATLASti™.

[6] A copy bundle of the hermeneutic unit compiled for data analysis is placed on the DVD for access by persons using ATLASti™

Networks produced through ATLASti™ show relationships between themes and categories related to each theme as identified in the qualitative data. These relationships or links differentiate between i) *is associated with*; ii) *is part of*; iii) *is a cause of*; iv) *contradicts*; is v) *is a*; and vi) *is a property of*. The symbols for each relationship as well as the explanations for each are set out in Table 4.3:

Table 4.3: Relationships depicted through networks created with ATLASti™ (Friese, 2011, pp. 102-103)

RELATIONSHIP	SYMBOL	EXPLANATION
Is associated with	==	Relates concepts without subsumption
Is part of	[]	The part-of relation links objects, not concepts of different abstractional level (as does ISA)
Is cause of	=>	Used for representing causal links, processes, etc.
Contradicts	<>	Indicates opposing concepts
Is a (ISA)	Isa	The ISA relation links specific concepts to general concepts.
Is a property of	*]	A meta relation between a concept and its attributes

After organising and preparing the data for analysis, the following steps suggested by Neuman (2006, pp. 460-464) were followed using ATLASti™ to analyse qualitative data:

- **Open coding:** The data gathered through the focus-group interview, individual interviews, and open comments of the participants in semi-structured questionnaires, were scrutinised for quotations related to the themes derived from the literature (Table 4.2); Codes were assigned to categories;
- **Axial coding:**[7] Interconnections were made among the themes and categories derived from qualitative data sources through open coding to identify the axis of key concepts; ***code density*** (linkages between codes) and ***code frequency*** or *groundedness* of codes (how often a code has been

[7] ATLASti™ indicates the frequency and density for each code e.g. for the code 'improved pedagogy' [7-12] indicates a code frequency of 7 and a code density of 12.

applied) were identified through ATLASti™ (ATLAS.ti Scientific Software Development GmbH, 2011, p. 23);

- **Selective coding:** All data codes were scanned and constantly compared to look for cases that illustrate themes and contrasts; Through continuous reflection on themes and codes I established a comprehensive set of categories related to the research questions; Categories and their interrelationships were combined to form a story line that describes the way the practical component of the DL programme supported the applied competence of Foundation Phase teachers within their teaching context;
- **Analytic memo writing and outcroppings**

  During the coding process memos were created to link the raw data to theoretical concept formation. Data networks were drawn based on codes, memos, and comments to form the basis for reporting on the findings. The data were also used to recognise underlying events or features – referred to by Neuman (2006, pp. 464-466) as outcropping – where the researcher looks for deeper structures and forces that may lie unseen beneath the surface in order to generate and evaluate theories and generalisations.

Although the study mostly implemented qualitative data collecting methods, the data collected through semi-structured questionnaires and document analysis through portfolio evaluation played an important role as descriptive statistics to firstly broaden the understanding of the data collected through qualitative methods and secondly as a form triangulation.

4.6.2 Analysis of data gathered through quantitative methods

The data gathered through quantitative methods (semi-structured questionnaires) did not only serve to increase the credibility of the findings (§4.8.1) but also to provide another angle to the data collected through qualitative methods (McMillan & Schumacher, 2010, p. 331). According to Gay et al. (2011, p. 319), descriptive statistics provide basic information about the number of participants in a study, their characteristics, and the outcome of their responses regarding a specific issue.

Descriptive statistics therefore provide valuable information about concurrences or ambiguities resulting from inductive reasoning and the interpretation of qualitative data.

The two questionnaires, namely the PreQ (§4.5.2.1) and PostQ (§4.5.2.3), did not only provide valuable information regarding the teaching context of the teachers but also gave me a better understanding of who the teachers are. The open-ended questions that formed part of the questionnaires further informed my interpretation and understanding of the way quantitative data supports qualitative data (Questionnaires: Appendix; Open comments transcribed: Appendix F).

The data collected through Likert-scale questions were processed by the NWU Statistical Consultation Services. SAS statistical software was used to calculate the descriptive statistics and percentage frequencies of the questionnaire items (SAS Institute Inc., 2005). The numerical data were analysed through inductive as well as deductive reasoning and brought into the context of the qualitative data. Patterns identified through analysis of the qualitative data were compared with the data collected through the semi-structured questionnaires to explore possible relationships and discrepancies between the findings. Concurrences in the data collected through various methods further served to build an understanding of the coherence between the teacher profile and teaching context, the programme design and applied competence as programme outcome. The numerical data thus informed the findings of the qualitative data and, possible relationships between the quantitative and qualitative data informed theory building with regards to the value of the practical component (evaluand).

A quantitative assessment tool was used to evaluate evidence of applied competence of participants as demonstrated through the learning portfolios. Findings were constantly compared with findings on the profile and teaching context of the teachers as well as their expectations *for* and their experiences *of* the programme.

4.6.3 Data analysis procedure

The search for answers to the research question and sub questions (§4.3) in this qualitative study relied primarily on the analysis and comparison of ***qualitative data***

collected through the focus-group interview, written expectations of the teachers and data collected through individual interviews. Open-ended questions in the semi-structured questionnaires further added to the qualitative data. The following steps suggested by Boeije (2002, p. 395) were used in the content analysis of the qualitative data:

i. Comparisons within the focus-group interview

ii. Comparisons within participants' written expectations of the programme

iii. Comparisons between focus-group interview and written expectations for the programme

iv. Comparisons within PreQ open comments

v. Comparison between PreQ open comments, focus-group interview and written expectations for the programme

vi. Comparisons within a single individual interview

vii. Comparisons between all individual interviews

viii. Comparison within PostQ open comments

ix. Comparison between individual interviews and PostQ open comments

x. Comparisons between focus-group interview, teacher written expectations, PreQ and PostQ open comments and individual interviews

The ***quantitative data*** collected through the semi-structured questionnaires and analysed through the North-West University Statistical Consultation Services were constantly used as descriptive data and as a way to seek convergence and divergence in the way the data answers the research question.

The data analysis included a comparison of the following themes as they emerged from the various collection methods:

- **Teacher profiles**

  Data on the teacher profiles included categories related to their backgrounds such as gender, age, prior teaching experience as well as participants' own

ratings of their own knowledge and teaching competence. Data on teacher profiles were mainly collected through pre-implementation and post implementation semi-structured questionnaires (descriptive data). Codes related to teacher profile emerging from qualitative data were constantly compared with qualitative data. Comparisons between the data collected from different sources served as verification and triangulation of data on the profile and professional needs of the target population.

- **Teaching context**

The teaching context in which the teachers need to implement the practical component of the DL programme may have a direct influence on the way teachers experience the programme to support their applied competence and therefore needs to be recognised in the content analysis. Aspects of the teaching context included the socio-economic context of the school, the background or the learners, the education system with specific reference to the role of the DoE and school management. Data on the teaching context were triangulated through data collected from the PreQ (descriptive data), participants' written expectations, open comments in the PreQ and PostQ as well as post-implementation individual interviews.

- **Teacher expectations of the way the programme will support their applied competence**

A focus-group interview and written expectations before implementation of the practical component provided the participants with opportunities for free expression of their expectations regarding the way the programme would support their applied competence. Open-ended questions formed part of the pre-implementation questionnaire and provided further opportunities for the participants to voice their anticipation for the way the programme would support their applied competence. Teacher expectations were compared with the data on teacher profiles and context since personal as well as situational aspects may influence teacher expectations (§3.3). Furthermore, teacher expectations before the implementation of the practical component of this DL programme were also compared with experiences reported after implementation of the

practical component as collected through interviews and in post-implementation questionnaires to determine in which way the programme met their expectations.

- **Teacher experiences on the way the programme supported their applied competence**

  Data on the teachers' experiences on the way the programme supported their applied competence were collected after the implementation of the practical component of the DL programme through semi-structured questionnaires (descriptive data) as well as through individual interviews based on their completed portfolios. Comparing data from the questionnaire and the interviews did not only serve a descriptive function but also provided for crystallization of findings. The teachers' experiences on the way the programme supported their applied competence needed to be compared with the data collected via all the other collection methods through categorising, coding, delineating, and connecting different categories.

  The coding process used the following printing characters to organise the codes according to the different themes:

CATEGORY	PRINTING CHARACTER
Teacher profile	$
Teaching context	*
Teacher expectations of the programme	!
Teacher experiences of the programme	#
Quotations related to the programme design	@

4.7 RESEARCH PROCESS

The following steps were followed to conduct the study:

4.7.1 Pre-implementation evaluation

- Informed consent was requested from all the parties.

- The North-West University Statistical Consultation Services was approached regarding the feasibility of questionnaire (Dr. S. Ellis).
- Semi-structured questionnaires (PreQ) were implemented at both centres namely NIHE (Kimberley - Frances Baard district) and the Cape Rural FET College (De Aar Campus - Pixley Ka Seme district).

4.7.2 Midterm evaluation

- A focus-group interview was conducted with the teachers who attended the contact session at NIHE (Kimberley - Frances Baard district) after the first year of the programme (which mainly consists of theoretic content and summative assessment), before they commenced with the second year of the programme (which mainly consists of practical work guided by the working portfolio) (Focus-group questions: Appendix B; Sound file: Appendix E; Transcriptions: Appendix F).
- Written expectations for the second more practice-based year were handed in by teachers who attended the contact session at NIHE (Kimberley - Frances Baard district) after the first year of the programme, before they commenced with the second year of the programme (Appendix F).

4.7.3 Post-implementation evaluation

- Semi-structured questionnaires (PostQ) were implemented after the students wrote their final exam paper at the exam centre in Kimberley (Frances Baard district) and the exam centre in De Aar (Pixley Ka Seme district), to gather data from the target group namely all the 48 Foundation Phase teachers enrolled as part of the first cohort of the NCDoE bursary project.
- Individual interviews on portfolios were conducted at the schools of four teachers.

- Document analysis were undertaken on ten learning portfolios regarding the way these portfolios interrogate evidence of elements of applied competence as programme outcome.

4.7.4 Analysis and synthesis

- After transcribing qualitative data, all the data gathered through various sources were analysed and synthesised.

4.7.5 Reporting of findings of the project

- The findings were reported in fulfilment of the requirements of the North-West University for the PhD degree regarding the way the practical component of a DL programme supports applied competence of Foundation Phase teachers.

4.8 TRUSTWORTHINESS

In qualitative research the terms ‘validity’ and ‘reliability’ is used to refer to the credibility and trustworthiness of a study (Nieuwenhuis, 2007, p. 80; Robson, 2002, p. 170; Shenton, 2004, p. 64). McMillan and Schumacher (2010, p. 330) define validity in qualitative research as “the degree of congruence between the explanation of the phenomena and the realities of the world.” In this qualitative study validity was strengthened by the cumulative impact of diverse details that together created substantial evidence of the congruence between the findings and the participants’ real experiences of the ways in which the programme supported their applied competence (Neuman, 2006, p. 197).

Qualitative research allows for triangulation in data collection as well as in data analysis to enhance the trustworthiness of the study. Nieuwenhuis (2007, p. 81) proposes that researchers working in the qualitative paradigm should rather use the term crystallisation to refer to the implementation of various data collecting and data analysis techniques to come to their own reinterpreted understanding of the phenomenon investigated. Janesick (2000, p. 392, in Maree & Van der Westhuizen, 2007, p. 41) motivates this strategy to validate qualitative research findings as

follows: “the crystal combines symmetry and substance with infinite variety of shapes, substances, transmutations, multi-dimensionalities and angles of approach. Crystals grow, change and alter, but are not amorphous.” Findings thus crystallise from the data (Maree, 2007, p. 41; Nieuwenhuis, 2007, p. 81). Methodological triangulation, whereby data is collected through various methods (focus-group interviews, interviews, written expectations, and document analysis) as well various data analysis methods (qualitative and quantitative methods), serve to verify findings through cross-validation (McMillan & Schumacher, 2010, pp. 330, 331).

Data triangulation involves a minimum of two data sets to tell us something more about a third phenomenon (Gorard & Taylor, 2011, pp. 43-46), which in this study is the practical component included in a DL programme for Foundation Phase teachers in the South African context. While triangulation cannot be used as a form of mutual confirmation or validation of more than one method, the different methods are directed at different aspects of applied competence in the DL programme under investigation on the assumption that a combination of perspectives will render a new view or a more well-rounded theory of ways in which to support applied competence through a DL programme implemented in a NIC. Data were thus gathered through various data sources and different methods in order to look at the phenomenon from different angles. This allowed me to get a more complete picture of the value of the practical component of the revised DL programme for Foundation Phase teachers and allowed more valid and relevant recommendations regarding strategies to be included in the programme to support applied competence as programme outcome.

Mason (1996 in Robson, 2002, p. 171) warns that the main threat to validity in interpretive research is the inability of a researcher to trace the route followed to come to an interpretation. Steps through which interpretations are made were therefore continually documented and justified in this study. Although specific terms may vary, qualitative researchers refer to the trustworthiness of findings as ‘credibility’, ‘transferability/applicability’, ‘dependability’ and ‘conformability’ (Gay et al., 2011, p. 392; Nieuwenhuis, 2007, p. 80; Robson, 2002, p. 170; Shenton, 2004, p. 64). Ways to strengthen the validity of this study is discussed for each of these aspects.

4.8.1 Credibility

Credibility refers to the extent to which a study measures what it is supposed to measure (Maree, 2007, p. 41). The trustworthiness of the inquiry was enhanced by comparing the data gathered from various sources and via various methods within the specific case. Patton postulates that: “The greater the number of supporting sources for a lesson learned, the more rigorous the supporting evidence, and the greater the triangulation of supporting sources, the more confidence one has in the significance and meaningfulness of a lesson learned.” (Patton, 2001, p. 335). Thick description and implementing a variety of methods to collect data enhanced the credibility of this study:

- Using thick description
    - Thick descriptions of data collected through focus-group interview, individual interviews, and written expectations and reflections enabled me to gather data on the true lived experiences of the participants which were interpreted in the context of their biographic data collected through semi-structured questionnaires.
- Using a variety of instruments to collect data
    - Apart from focus-group interview, interviews, written expectations and reflections, as well as document analysis, pre- and post-implementation questionnaires were used to collect data which provided various perspectives on data collected on the same phenomenon, namely the ways in which a practical component added to a DL programme support the applied competence of Foundation Phase teachers.

4.8.2 Transferability

Although findings in qualitative studies can seldom be generalised to larger study populations, transferability in qualitative studies can imply that others can use the information to understand similar situations and can apply the information in subsequent research (McMillan & Schumacher, 2010, p. 7). This study does not aim to generalise its findings to teacher education at large but to understand effective

pedagogical strategies within a DL programme for teachers in the context of a NIC such as South Africa. In this study the characteristics and background of the study population are clearly portrayed which provides other researchers a clear picture of the specific context of the participants. The findings could thus be transferred to studies conducted in similar contexts.

4.8.3 Dependability

The dependability of a study indicates the consistency of the data collected (Poggenpoel & Myburgh, 2004, p. 421).

- All interviews were recorded and accurately transcribed (Appendixes C; F).
- Peer validation was obtained on the learning portfolios (document analysis). An evaluation of the learning portfolios was done by me as well as by an independent qualified person with more than 30 years' experience in the field of education of which 20 years were devoted to the education of Foundation Phase teachers. The two evaluations were compared for discrepancies and correlations.

4.8.4 Conformability

Conformability refers to the neutrality or objectivity of the data (Poggenpoel & Myburgh, 2004, p. 421). Objectivity as a procedure refers to data collection and analysis procedures from which a single reasonable interpretation can be made (McMillan & Schumacher, 2010, pp. 8, 9). In qualitative studies bias is taken into account rather than controlled.

In this study conformability was maintained by means of:

- member checking – asking participants if they were quoted in context,
- including direct quotations in the interviews of the findings which serve as opportunities for objective interpretations by other researchers, and
- triangulation and crystallisation through the implementation of different data sources and methodologies (Fig. 5.14).

4.8.5 Possible threats to trustworthiness

In this qualitative study *variables cannot be kept* constant. The study aims to determine the views of the participants based on their perceptions within their specific contexts rather than to make generalisations about the broader teaching community. Apart from aspects such as researcher bias, variables that could have influenced the findings include *differences in backgrounds of the participants as well as differences between the background of the researcher and the participants*, *mother tongue*, *professional levels* of the teachers, and teacher *language deficiencies.* The measures discussed below were taken to minimise these threats to the trustworthiness of the study.

4.8.5.1 Language barriers

As the interviews, questionnaires, and focus-group interview could not accommodate all eleven official languages of the country, understandable English was used. The teachers could choose to respond in either English or Afrikaans in accordance with the language policy of the NWU. Many teachers who work in the Northern Cape are Afrikaans mother tongue speakers and African language speakers residing in the Northern Cape often use Afrikaans as their first additional language (§4.2). The interviewer and persons facilitating the completion of the semi-structured questionnaires explained terms and words where it seemed that the interviewees were not sure of what was being asked.

4.8.5.2 Diverse background of participants

The study specifically aims to determine teachers' experiences of the ways in which a DL programme supports their applied competence in their context to ensure that their diverse needs are met. The data analysis therefore investigated possible patterns or controversies in the biographical data of the teachers, and diversity was taken into account during the interpretation and reporting of the data.

The teachers entered the programme at various levels of competence. Teacher profiles including age and prior learning, teaching context and personal attitudes towards teaching were assumed to have considerable influence on the way they

experience the programme as well as the learning portfolio process. Contextual and personal factors therefore had to be recognised in the way the teachers responded.

4.8.5.3 Researcher bias

My own values and preconceptions as programme designer and programme evaluator in this qualitative research may have influenced my interpretations (McMillan & Schumacher, 2010, p. 333) and I acknowledge my possible subjectivity. I rigorously scrutinised the interpretations and findings throughout the research process for possible personal preconceptions to enhance the credibility of findings (McMillan & Schumacher, 2010, p. 332). The drive behind the investigation was the improvement of DL programmes to ensure applied competence as programme outcome. I therefore took a critical stance towards the findings to determine the real strengths and weaknesses with specific focus on the meaningfulness and value of the design features that form part of the practical component added to the revised DL programme in the context of the target group.

4.9 ETHICAL ASPECTS

Neuman (2006, p. 129) views ethical issues as the concerns, dilemmas, and conflicts that arise over the proper way research is conducted while Resnik (2010) defines ethics as the norms for research conduct that distinguishes acceptable from unacceptable behaviour. The requisite ethical applications were submitted to the North-West University's Ethics Committee and permission was obtained to commence with the research (ethics clearance number NWU-00041-13-A2).

Prohibitions recognised by the law and codes of ethics as stipulated by Neuman (2006, p. 131) were applied throughout this project:

- No participants were exposed to any form of danger as a result of any procedure in the study,
- No participants were humiliated or degraded and no harmful information was released about specific individuals collected for the research purposes,
- The privacy of the participants was not violated at any stage of the study; the data collecting instruments protected anonymity and confidentiality,

- The participants were informed of their right to withdraw from the study at any time, and
- Voluntary consent was obtained from the participants as well as from the relevant authorities, namely the NCDoE and school principals.

Participation consent in this multi-method and multi-purpose study needs further clarification. As the research was based on a bursary project funded by the Northern Cape Department of Basic Education (NCDoE), permission to conduct the study was obtained in writing from the Northern Cape DoE. Monitoring of the programme was part of the project agreement between the NWU and the NCDoE and as the researcher, who is also one of the programme designers and lecturer tasked with programme monitoring, I therefore reported on the findings based on both the data collected during the programme monitoring phase as well as additional data collected to adhere to the requirements of a PhD. Both these phases rendered data that contributed to a better understanding of the ways in which the programme supported the applied competence of the Foundation Phase teachers enrolled in the NCDoE bursary project.

4.9.1 Benefits for the participants

Although this group of teachers may not directly benefit from the findings of the study, it is expected that they may have benefitted from the revised programme with regards to their own applied competence. The teachers were informed about the purpose of the programme for which they were enrolled by the NCDoE. The programme does not only include important knowledge and support to improve applied competence in the classroom, but also much needed knowledge and skills to support learners with special educational needs. The programme also provided the teachers with various resources, skills, and knowledge which they can use in practice. The participants were informed about their contribution in the streamlining and improvement of future DL programmes and consequently the education standards of South Africa. The role played by participants in enhancing teaching and learning in SA schools, especially in rural schools, was thus highlighted and could

contribute to their perceptions of self-efficacy and self-worth as agents of change in education.

The following informed consent forms are included in Appendix A:

- NWU Ethics committee
- The director of the School for Human Sciences for Education within the Faculty of Education of the NWU (Dr. H. Van Vuuren).
- The Northern Cape Department of Basic Education (NCDoE).
- Principals of the schools where individual interviews with four teachers were conducted.
- Teachers who participated in the interviews.
- NWU Statistical Consultation Services

4.10 ROLE OF THE RESEARCHER IN THE STUDY

As the researcher I played a key role in the design and delivery of the Foundation Phase ACE programme as presented to teachers in agreement with the NCDoE. Although I had a specific plan for conducting the research, the process in qualitative research is emergent and cannot be tightly described before the study commences. My main focus as researcher was to understand and learn about the problem through the meanings that the participants hold about the problem and not the meanings that I as researcher bring to the research (Creswell, 2007, p. 39).

Although programme monitoring was part of the agreement between the NWU and the NCDoE, the revised programme included a practical component which was never before evaluated regarding the way it supports applied competence. It was thus important to me as researcher and programme designer to evaluate the implementation as objectively as possible. Findings on strengths and weaknesses in this practical component may serve as valuable grounding for future DL programme designs to ensure applied competence as outcome.

I played a dominant role in the design of the semi-structured questionnaires, interviews, and focus-group interview schedule as well as the data collection through various techniques. I conducted all the interviews and facilitated the focus-group interview. I further managed the collection of the data through pre-implementation semi-structured questionnaires. As I could not personally administer the collection of the data through post-implementation semi-structured questionnaires due to other work commitments, I gave detailed instructions to the persons who opted to administer the completion of these questionnaires on my behalf.

In this qualitative study one of my main roles as researcher was to give meaning to the data in an honest and trustworthy manner, securing credibility and validity. Neuman (2006, p. 160) differentiates between three levels on which the researcher makes meaning of the data in qualitative research, namely first-order, second-order, and a third-order interpretation. In line with this view, I applied *first-order interpretation* to arrive at conclusions regarding the way data confirms or refutes the way design features support the applied competence of Foundation Phase teachers. During the *second-order interpretation* I drew coherence between the programme design and the data as collected from the participants and the literature. In the *third-order interpretation* I assigned general theoretical significance to the findings based on the interpretations from the first and second-order interpretations by means of a model for DL programme design that would contribute to applied competence of teachers within a similar context.

4.11 CHAPTER SUMMARY

Chapter four explained the research process in which data were collected via multiple sources and methods in this qualitative implementation evaluation research. The methods aimed to collect relevant data that will enable me to understand the value of the programme as experienced by the participants and to construct knowledge on the value of the value of the programme through interpreting the data. Chapter five further reports on the data analysis and findings based on my search for answers to the research question namely: *How does a practical component, included as part of a revised DL professional development programme of the NWU*

implemented in the Northern Cape, support Foundation Phase teachers' applied competence?

The implications of the findings for the design features of DL programmes aiming to support the development of applied teaching competence of Foundation Phase teachers in South Africa, are discussed in Chapter six.

CHAPTER 5

ANALYSIS OF DATA AND FINDINGS

5.1 INTRODUCTION

Chapter four explained the research design, the methodological choices for data collection and content analysis, as well as the strategies used to ensure trustworthiness. Chapter five gives a detailed account of the data analysis and findings which address the following research question:

> *How does a practical component, included as part of a revised DL professional development programme of the NWU implemented in the Northern Cape, support the development of Foundation Phase teacher applied competence?*

The related sub-questions formulated to find an answer to the research question, were:

- What does the body of scholarship indicate with regards to elements contributing to applied competence in effective teacher professional development programmes?
- What does the body of scholarship indicate with respect to programme design features to support applied competence in DL programmes for teacher professional development?
- What are the theoretical and conceptual implications of the profile and teaching context of Northern Cape Foundation Phase teacher enrolled in the DL professional development programme?
- What are the expectations of Foundation Phase teachers regarding the way in which the practical component of the DL professional development programme will support applied competence in their contexts?
- How do Foundation Phase teachers experience the practical component of the DL professional development programme in terms of supporting their applied competence?

- To what extent do the learning portfolios of Foundation Phase teachers enrolled in a DL professional development programme interrogate evidence of applied competence?

Chapters two and three reported the way the literature answers the first two sub-questions which also served as grounding for the empirical study. The empirical study was then conducted to find answers to the last four sub-questions. In line with the constructivist-interpretivist paradigm (§4.4.1), data collected from the literature as well as through the empirical study was construed to come to a deeper understanding of the way the DL programme component supported teachers' applied competence. Knowledge was firstly accumulated from the literature on core elements to be included in teacher education programmes to support applied competence. Qualitative data collected through multiple methods in the empirical study allowed for the interpretation of the participants' experiences of the way the programme supported the identified elements of applied competence within their diverse teaching contexts. Content analysis of all qualitative data and constant comparison between data collected through various methods supported my interpretations by providing insight into teachers' experiences from different angels. Quantitative data collected through semi-structured questionnaires, served as descriptive data. This data deepened my understanding of the diverse profile and background of the teachers and supported my interpretation of the qualitative data. In line with Burrel and Morgan's framework of social paradigms (1979, p. 22) (§4.4.1; Fig. 4.2) data collected through multiple methods aimed to construct knowledge on 'how to' support the applied competence of teachers in a DL programme as well as 'how should' future DL programme design be revised to accommodate the teacher profile as well as the teaching context to support applied competence of a diverse teacher population. The following sections expound the data analysis to answer each of these four sub-questions.

The utterances and written responses of the participants are reported verbatim. Since ATLASti™ uses the term ***quotations*** when referring to selected data segments (Friese, 2012, p. 11) this term is used when referring to participant

responses collected through qualitative methods. The format for citing quotations and the abbreviations used to indicate specific data sources are indicated in Table 5.1.

Table 5.1: Reference format and abbreviations for quotations in qualitative data analysis

DATA SOURCE	ABBREVIATION	PARTICIPANT REFERENCING
Individual interviews	Int	Teacher A, Teacher B, Teacher C, Teacher D
Focus-group interview	FGr	T1 to T 7
Pre-implementation semi-structured questionnaire – open questions	PreQ	T1 to T39
Post-implementation semi-structured questionnaire – open questions	PostQ	T1 to T39
Written expectations	Exp	T1 to T15

5.2. TEACHER PROFILE AND TEACHING CONTEXT

This section reports on the data perused to find an answers to the following question:

> *What are the theoretical and conceptual implications of the profile and teaching contexts of Northern Cape Foundation Phase teachers enrolled in the DL professional development programme?*

The literature confirmed that teacher profile and teaching context influence the way teachers experience the programme's contribution to their professional development (§3.3.1 & 3.3.2). The relationship between the teacher profile, teaching context, and motivation to implement new knowledge and skills, are also confirmed by the literature (Fig. 3.1; §3.1 & §3.2.3). The sustainable impact of a teacher education programme on improved applied competence, and consequently improved education in South Africa, thus requires that DL programmes be aligned with the profile and related professional development needs of the teacher who typically enrols for these programmes (§3.3.2). This qualitative study specifically set out to hear the voices of teachers regarding their experiences of the programme against the background of

their profiles within their specific teaching contexts. This approach has enabled me to determine the value of the programme for a specific teacher population and to align future DL programme designs to their learning needs.

5.2.1 Teacher profile

Exploring the profile of the teacher required analysing the data based on their demographic information as well as their professional learning needs. The quantitative data collected through post-implementation semi-structured questionnaires (PostQ) were used to identify the demographic background of the teachers which were viewed as the most recent information. The quotations of the participants collected through qualitative data collection methods provided a deeper insight into the teacher profile. These qualitative sources included individual semi-structured interviews (Int), focus-group interview (FGr), and open-ended questions which formed part of both the pre-implementation (PreQ) and post-implementation (PostQ) semi-structured questionnaire. Constant comparisons of the data collected through the various sources served as triangulation to enhance the trustworthiness of the findings.

The demographic information of the participants gives their age, teaching qualifications, prior experience, and current teaching positions.

5.2.1.1 Teachers' demographic background

- **Teacher demographic background derived from quantitative data**

Of the 48 teachers enrolled for the first intake of the Foundation Phase ACE bursary project, 36 opted to complete the PostQ (N=36). There was no significant discrepancy between the profiles of the teachers practising in the two different regions, namely the Frances Baard and Pixley ka Seme regions, which means that the study reports on the general demographic profile of the whole target group practising in both districts. Not all participants completed all questions of this section. The questionnaire required of teachers to provide information about their age, previous qualifications, and prior experience which provided valuable information on the general profile of the teachers as tabularised in Table 5.2.

Table 5.2: Demographic background of the participants

Age	**20-30 years** **0**	**31 to 40** **4**	**41 to 50** **23**	**50 years+** **9**	
Highest professional qualification	**Gr. 12** **0**	**NPDE** **12**	**ACE** **10**	**OTHER** **13**	
Years' experience	**Less than 5 years** **2**	**6 to 10 years** **7**	**10+ years** **26**		
Years at current school	**Less than 5 years** **6**	**6 to 10 years** **9**	**10+ years** **21**		
Current grade	**Gr. R** **0**	**Gr. 1** **7**	**Gr. 2** **12**	**Gr. 3** **10**	**Multi-grade** **4**

No participants were younger than 30; most indicated their age as between 41 and 50 years (n=23); four of the participants were between 31 and 40 (n=4) while nine (n=9) were older than 50.

Although this is a small sample, the relative high age range of these teachers correlate with previous findings regarding the profile of teachers who enrol in DL programmes in the South African context (Kruger, 2012, p. 162; Subotzky & Prinsloo, 2011, p. 178; Welch & Gultig, 2002, p. 12). The relative high age of the participants may confirm the notion that fewer young people have been joining the teaching profession in recent years (South African Department of Basic Education, 2011a, p. 100; Welch, 2008, p. 326). Research findings show that most South African teachers are aged 40 to 49 years (The Centre for Development and Enterprise, 2015, p. 6). This relative high age raises concern as by 2025 this group will be 50 to 59 years old, with many in the process of retiring or drawn into posts as senior managers and principals. Less experienced teachers will have to be promoted to fill these positions. This may further lead to an increase in teacher shortages in the future which may once again force the DoE to appoint unqualified persons who will need to attain their qualifications through DL.

As noted above, the aim of the NCDoE bursary project was not only to provide teachers with qualifications but also to support the development of applied competence and expertise in supporting LSEN. Ten of the participants (n=10) indicated that they had already attained a qualification on the same level as the programme under investigation (NQF level 6) (§1.4 and §4.2), while 12 participants (n=12) indicated a National Professional Diploma in Education (NPDE) (NQF level 5) qualification which is a recognised antecedent to the ACE (§1.4).

Thirteen participants (n=13) indicated that they had other relevant qualifications while two of the participants (n=2) had more than one qualification on a higher level than the ACE. These include a Higher Diploma in Education (n=3); a Junior Primary Teacher Diploma (n=7), BTECH: Bachelor of Technology Education Management (n=4), and a BEd Hons (n=1). Although 13 teachers in the target group of this implementation evaluation already had relevant prior qualifications on the same level or higher as the ACE, the NCDoE identified a lack of applied competence and ability in the teachers to support LSEN which may be an indication of the general incapacity of teacher education programmes to effectively support applied competence. This concern is shared by other educationists, not only in South Africa but also internationally (Darling-Hammond, 2010b, p. 39; Welch, 2008, p. 328) (§1.4, §2.2; §2.4.3.2).

The participants have spent a substantial number of years in teaching practice; 26 participants (n=26) indicated that they had more than 10 years teaching experience while 21 (n=21) indicated that they had been practising at their current schools for more than 10 years. Although one would expect evidence of prior experience and resultant applied competence to emerge from the data, the literature warns that not all experience contributes to the development of applied competence (Lobman et al., 2004, p. 32) (§3.2.4). The mature age of teachers together with many years spent in practice may in fact result in teachers falling into a groove of ineffective teaching which underpins the importance of critical reflection on theory and practice (§3.2.2.1) as well as guided applied practice (§3.2.4) to change ineffective teaching strategies.

The teachers in the target group are mostly responsible for teaching Grade 2 (n=12), and Grade 3 (n=10), while seven (n=7) indicated that they teach Grade 1 and one (n=1) indicated that she teaches Grade 4 which does not form part of the Foundation

Phase. Two teachers did not indicate which grade they teach while four participants indicated that they are responsible for multi-grades; a system often used in South African rural areas where the number of learners in a school does not justify a teacher for every grade. The DL programme does not specifically support the challenges experienced by teachers responsible for multi-grades (MG). Since the government acknowledges the need for specialised support for these teachers (South African Departments of Basic Education and Higher Education and Training, 2011, p. 10), it may be the case that relevant support programmes for MG teachers are not yet in place. Teachers specifically referred to this shortcoming in the qualitative data as follows:

FGr. Teacher 7: The one thing I want addressed is the multi-graded classes. In a multi-graded class, we are really struggling because we are given different topics.

❖ Teacher demographic and socio-economic background derived from qualitative data

Quotations collected through the four individual interviews, the focus-group interview, written expectations, and open written comments in the PreQ and PostQ, were explored for general themes related to the teacher profile. Apart from providing a deeper insight into the background of the teachers, the purpose of the qualitative data was to hear the voices of participants on aspects related to their personal profiles that may play a role in the way the programme supports their applied competence. Figure 5.1 shows a network of positive as well as negative codes related to the teachers' demographic and socio-economic backgrounds derived from the qualitative data. All the codes related to the participants' profile are indicated with the symbol '$' in ATLASti™ code networks. A total of 188 quotations (n=188) could be linked to codes that may directly or indirectly play a role in the teacher profile.

Apart from the demographic and socio-economic factors derived from qualitative data, Figure 5.1 also indicates prominent codes related to the other categories for a deeper understanding of the intricate relationship between the teacher profile and other determinants of professional development. These codes involve quotations

related to knowledge, self-directedness, and attitudes expressed as distinct features of the participants and not specifically related to the programme:

Sixty six quotations (n=66) were positively linked to ***a lack of SD*** as part of the teacher profile of which the following serves as example:

Int. Teacher A: We find it difficult to plan and teach at the same time. It's as if we are confused. I..I..Maybe I…I can be confused.

Insufficient PCK before the programme implementation was linked to 84 quotations (n=84) many of which referred to insufficient knowledge to support LSEN:

PreQ: T26: The most challenging about foundation phase is helping learners with barriers to learning, because of the little knowledge of how to go about it especially in extreme cases.

Positive and negative attitudes towards teaching play a critical role in professional development of teachers:

Int. Teacher D: So that's why I said maybe I'm there for a reason… to do what I've been taught…

PostQ. T30: Attitude will not change, because we are frustrated about the changes, each time we get new minister of education, the things change but to so called model C no change at all, the reader was used in 1999 is still in use whereas we black we change books as anything that only frustrate the teachers.

Although the next section focuses mainly on demographic and socio-economic factors as part of the teacher profile, the interrelatedness between the teacher profile and the above codes as indicated in Fig. 5.1 should also be recognised in the analysis of the data related to the teacher profile.

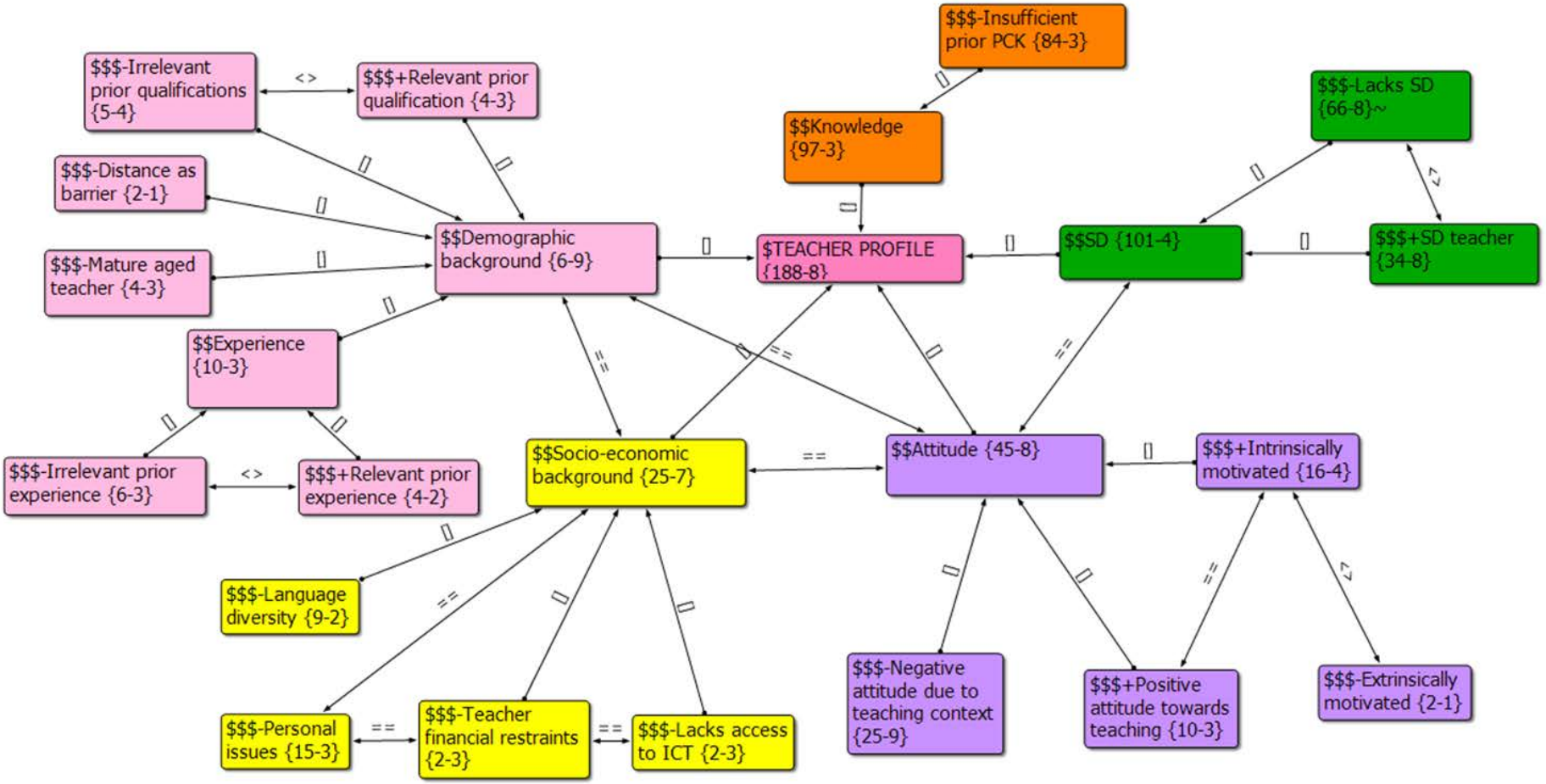

Fig. 5.1 Profile of the participants based on qualitative data

	Knowledge related codes (content)		Teacher profile related codes
	SD related codes (requires reflection and/or inquiry)		Attitude related codes (motivation, commitment)
	Socio-economic related codes		

The above codes with typical quotations related to the demographic and socio-economic background of the participants are summarised in Table 5.3.

Although the quantitative data indicated that most teachers enrolled possess a relevant prior qualification, five quotations (n=5) were linked to the code *irrelevant prior qualification*. This may be an indication that prior qualifications prepared these teachers for another school phase. Where teachers are not able to link new knowledge to prior knowledge of practice it may hamper the development of their applied competence. A lack of experience may also contribute to a low sense of self-efficacy and a negative attitude towards the programme as illustrated by T2 (PreQ) in Table 5.3.

Four quotations (n=4) confirm the relative older age of the target population and the apparent related barriers, while two quotations (n=2) confirm that the distances between enrolled teachers hamper cooperative learning.

Table 5.3: Codes and quotations related to the demographic and socio-economic background of the participants

CODES	TYPICAL QUOTATIONS
Demographic background [6]	
+Relevant prior qualification [4]	Int. Teacher D: *Yes, I took the opportunity because after doing my teachers' diploma, I went for higher diploma in education and then I went for a BEd honours. But I found this course…. I've never had studies like this before.*
-Irrelevant prior qualifications [5]	PreQ. T2: *I am doing now foundation phase ACE but I did senior primary diploma so I am having fears with foundation that is demanding the full attention of education and some more skill to deal with foundation learners. I have not yet teach the foundation phase.*
+Relevant prior experience [4]	Int. Teacher B: *I have been teaching for twenty five years – grades one to three.*
-Irrelevant prior experience [6]	PostQ. T25: *For me it's a little bit difficult because I never did a foundation phase.*
-Mature aged teacher [4]	Exp. T5: *Please consider our ages.*
-Distance as barrier [2]	Int. Teacher D: *So… it's a lot of money for transport but I just told myself that money is not everything* PreQ. T26: *With group learning it is seldom as group member stay far away*
Socio-economic background [4]	
-Language diversity [9]	Int. Teacher A: *We have to do them in our home language.* PreQ. T36: *Most of the teachers at school don't like sharing ideas. It seems as if elke een is vir homself. (code switching)*
-Personal issues [15]	Int. Teacher A: *Because I just was struggling with personally something, so it was a strenuous time.* PostQ. T36: *I did not attend all the session because of different reason sometimes its family funeral or transport problems*
-Financial restraints [2]	Int. Teacher D: *Give us more concrete material, as we don't have materials. Like I said we've got financial constraints.*
-Lacks access to ICT [2]	PreQ. T25: *Technology plays a very important role in the global world. Teacher needs to explore technologically, it makes one's heart broken to see how some teachers, or we teachers are not exposed to computers, but the department needs everything to be typed. We don't have facilities at school were by learners and teachers can manage to do things.*

Language diversity came to the fore in the analysis of the qualitative data. Since linguistic competence is critical in the development of applied competence as programme outcome, this aspect needs deeper exploration. Nine quotations (n=9) were positively linked to language diversity as part of the teachers' profile. South African language policy in education requires that Foundation Phase learners receive education in their mother tongues (§3.3.1 and §3.3.2). The content of the practical component added to the revised version of the DL programme which is the focus of this study, is only available in English. HEI academic staff capacity does not allow for assessment of assignments and exam scripts in all the official languages; assessments are therefore done in English or Afrikaans which is often the teachers' second of third language. Language diversity may hamper teacher motivation to design resources in a language other than the language of learning and teaching used in their schools which may also reflect in poor evidence provided of their applied competence through the learning portfolio.

Since Afrikaans is the language used by a large group of the population in the Northern Cape (§4.2.1), participants were allowed to respond in either English or Afrikaans during the interviews, focus-group interview, and written responses. Many participants demonstrated poor proficiency in both these languages and often employed code switching to express their thoughts as is evident in the quotations provided in this chapter.

Personal issues (n=5) such as funerals and illnesses in their families as well as personal *Financial restraints* (n=2) could also detract from their motivation to participate in their own professional development.

Two participants mentioned the *lack of access to ICT* which may also restrict inquiry learning through the Internet and designing resources.

❖ Summary of participant demographic and socio-economic background

Based on the data collected through the semi-structured questionnaires and the qualitative data sources, the Foundation Phase teacher can be described as female and mostly between the ages of 41 and 50. According to Dirkx (2001, p. 67) the older age of teachers is often related to personal or emotional issues adults bring to the

education situation which may hamper learning such as a lack of computer literacy, an apprehension to use ICT and the belief that they are not able to learn. Since older adults have less formal education and have had less opportunities to develop test-taking skills, they may believe that they are less capable learners (Merriam, 2001, p. 4). Although not all teachers completed a qualification in Foundation Phase education, all the participants had relevant prior qualifications such as an NPDE (NQF level 5) or other qualification on a similar or higher qualification level. They are mostly practising as Grade 1 to 3 teachers, or are responsible for multi-grades in the Foundation Phase. The information collected through semi-structured questionnaires on the profiles of the participants indicated relevant prior qualifications and a substantive number of years in practice which provide them with relevant experience. The participants however reported on a general lack of confidence in their current knowledge during the interviews, open questions of the PreQ, and in their written expectations for the programme. The reasons for this discrepancy is explored in the following section (§5.2.1.2).

5.2.1.2 Teachers' professional development needs

Recognising the professional learning needs of the teachers was necessary to understand their expectations for the programme as well as their experiences of the way the programme design features contributed to their applied competence as reported in §5.4. The data collected through the PreQ were mainly used to determine their learning needs while the qualitative data collected in the interviews were used to crystallise the findings.

The pre-implementation questionnaire required that the participants rate their own teaching competence regarding aspects of critical professional knowledge and skills as identified in the literature (§2.2.1.2; §2.2.1.3; §3.2).

- **Teachers' beliefs of own professional development needs**

Although the participants' ratings of their own knowledge and skills in the pre-implementation questionnaires were statistically analysed, the utterances of the participants in the qualitative data collection were also perused for a better understanding of their learning needs. The participants indicated on a Likert scale

how they evaluated their own knowledge and competencies by selecting excellent, good, moderate, or poor regarding the following aspects:

- The characteristics and development of the Foundation Phase learner.
- Critical professional skills and knowledge related to Foundation Phase teaching practice.
- Self-directed skills such as collaboration with colleagues as well as reflection *on* and evaluation *of* own practice.

Cronbach's alpha was used to determine the consistency of the measuring instrument, namely the semi-structured questionnaire (Clark & Watson, 1995, pp. 309-319; Nunnally & Bernstein, 1994, p. 295). The calculation for all the questions in this section was larger than 0.8 which indicates a good internal consistency and therefore allows reporting on the average response by the participants on all the questions. Evaluations according to criteria on the Likert-scale were calculated collectively to arrive at a logical conclusion on the general evaluation by the participants regarding their professional development needs.

- **Participants' knowledge of the characteristics and development of the Foundation Phase learner**

A good knowledge of the characteristics of Foundation Phase learners and how they develop are critical components of a competent teacher's PCK which enable them to make informed choices regarding teaching and learning strategies (§3.2.1.2). The semi-structured questionnaire required that the participants rate their knowledge about learner development which included physical, emotional, social, cognitive, and language development. Cronbach's alpha measured 0.872 for this section and an average response of the participants was reported on all the questions. The responses are indicated in Table 5.4.

Table 5.4: Participants' evaluation of their knowledge of the Foundation Phase learners' developmental domains

N=39	n	Excellent	Good	Moderate	Poor
The characteristics of the Foundation Phase learner	31	4	20	7	0
Developmental and educational needs of the Foundation Phase learner regarding the following:					
• Physical	32	4	17	**10**	1
• Emotional	34	6	16	**11**	1
• Social	34	4	21	7	2
• Cognitive	33	2	17	**14**	0
• Language	31	5	20	6	0

Teachers' ratings of their knowledge regarding Foundation Phase learner developmental domains are graphically illustrated in Fig 5.2.

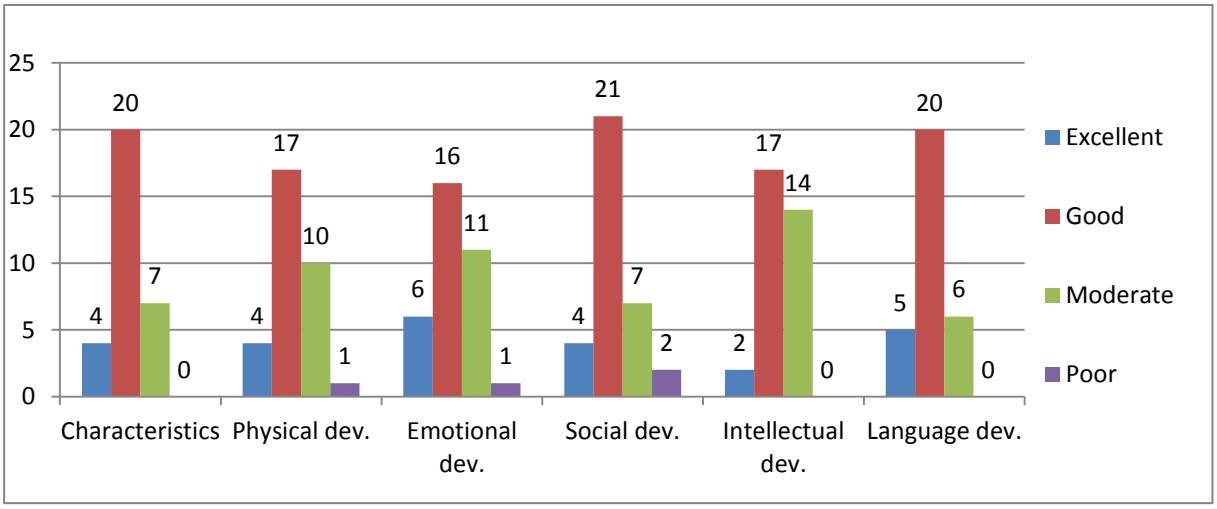

Fig. 5.2 Participants' rating of their knowledge of the Foundation Phase learners' developmental domains

Not all the participants completed this section of the pre-implementation questionnaire. However most of them rated their knowledge of the Foundation Phase learner as *Good.* Comparing the responses on the positive side of the scale (*Good* to *Excellent*) with responses on the negative side of the scale (*Moderate* to *Poor*),

shows that the participants generally had less confidence in their knowledge of learners' ***cognitive development*** where only 19 (n=19) rated their knowledge regarding this domain between *Good* to *Excellent,* while 14 (n=14) regarded their knowledge as between *Moderate* to *Poor* (Fig. 5.2).

Although ***language development*** can also be viewed as part of cognitive development, this item was included as a separate item since the teaching context of these teachers often requires of them to accommodate multi languages in their classrooms which pose specific challenges to Foundation Phase teachers in South Africa (§3.3.1; §5.2.1.1 and §5.2.2.2). Although the participants mentioned challenges posed by language diversity, they showed relatively high confidence in their knowledge of learner language development; 25 (n=25) rated their knowledge between *Good* and *Excellent* in this domain, and only six (n=6) viewed their knowledge of learner language development between *Moderate* and *Poor*.

Six (n=6) of the participants were of the opinion that they have *Excellent* knowledge of the learners' ***emotional development,*** while 16 (n=16) felt that they had relatively *Good* knowledge in this developmental domain. Eleven participants (n=11) felt that they had *Moderate* knowledge of the emotional development of the Foundation Phase learner, and one teacher rated her knowledge as *Poor* in this regard. Although many reasons may have contributed to these lower ratings, the unfavourable context in which many of these teachers work and live may require of them to play a strong pastoral role in supporting learners during times of hardship. This role was confirmed during individual interviews (§5.2.2.2), as was the fact that teachers may feel incompetent to support learners in this domain.

The participants' relative lower ratings of their knowledge of the Foundation Phase learners' ***physical development*** may also be of significance. Although 21 (n=21) participants rated their knowledge in this domain as *Good* to *Excellent*, 11 (n=11) rated their knowledge in this domain as *Moderate* to *Poor*. The relationship between physical and cognitive development in Foundation Phase education is confirmed in the literature (§3.2.1.2).

The participants mostly rated their knowledge of the learners' developmental domains as *Good to Excellent* while the quantitative data shows that they mostly

have ample experience in practice (§5.2.1.1). These findings are contradicted by personal responses in the qualitative data which showed a general lack of confidence in own knowledge and a need for more PCK (§5.3 and §5.4). Various factors could have contributed to this contradiction. The PreQ gathered data before the practical component while the interviews were conducted after the teachers had completed this component. The challenges posed by the practical component implemented during the second year of the programme may therefore have contributed to teachers reflecting on their own competencies and coming to realise their shortcomings regarding prior knowledge. Furthermore, the different data collecting methods may also have made a difference in the way participants responded. Written responses may have been viewed as disclosing their own shortcomings to their employers and the fund holders of the bursary project, namely the NCDoE, while the focus-group interview and individual interviews created an informal atmosphere, conducive to open discussion, where participants were free to honestly express their concerns, expectations, and experiences.

- **Participants' self-evaluation of their professional skills and knowledge related to the Foundation Phase teaching practice**

The pre-implementation questionnaire further requested of the participants to evaluate their own knowledge and skills regarding various aspects of Foundation Phase teaching. These aspects included:

- effective planning and implementation of all aspects of teaching,
- learning and assessment according to the school curriculum,
- identifying and supporting LSEN,
- cooperating with colleagues and parents in the best interest of the learners,
- aspects related to classroom management such as sensitive disciplinary measures, and
- supporting the development of a good self-image in learners.

The participants' responses are presented in Table 5.5 and illustrated in Fig. 5.3.

Constant comparison of data collected through the PreQ and PostQ with the qualitative data collected through the mid-term focus-group interview, written expectations for the practical component, and written comments in the open-ended sections of the questionnaires provided opportunities for crystallising the findings through triangulation.

Table 5.5: Participants' evaluations of their professional skills and knowledge related to the Foundation Phase teaching practice

N=39	n	Excellent	Good	Moderate	Poor
Curriculum planning according to the developmental needs of the Foundation Phase learner	35	5	24	6	0
Facilitation of optimal learning in the Foundation Phase classroom	34	3	24	7	0
Cooperating with parents to help learners to attain curriculum requirements	34	6	17	11	0
Cooperation with the Grade R teacher/ and teachers of the Intermediate Phase to ensure the effective progression of the learner through the grades	34	5	19	8	2
Disciplining the learners in a sensitive way	33	8	19	6	0
Ways to improve the Foundation Phase learners' self-image	33	4	19	9	1
To identify barriers to learning and how to address these problems	35	3	15	15	2
Planning for Foundation Phase learners with disabilities (LSEN)	35	3	9	19	4
Facilitating the programme to help learners to attain curriculum requirements	34	3	21	9	1
Creating a learner centred Foundation Phase classroom	34	5	24	5	0
Creating and implementing teaching aids and resources for the Foundation Phase class.	35	5	26	4	0
Most effective assessment methods to assess curriculum requirements	31	3	22	6	0

Cronbach's alpha measured 0.915 for this section and an average response is reported on all the questions. Responses on the positive side of the scale (*Good* to *Excellent*) were compared to responses on the negative side of the scale (*Moderate* to *Poor*). The participants generally evaluated their professional skills and knowledge

related to the critical aspects of Foundation Phase teaching practice as *Good*. The three aspects with the highest evaluation on the negative side of the scale included their ability *to cooperate with parents* to attain curriculum requirements (n=11), to *identify and address barriers to learning* (n=17)*, and planning for Foundation Phase learners with disabilities* (n=23). The prominence of these professional learning needs correlates with the qualitative data (§5.2.2.2) where participants indicated that they have to support many LSEN and that parents are often not involved in their children's learning.

The highest evaluations on the positive side of the scale were assigned to their ability to create learner-centred classrooms (n=29), and to create and implement learning and teaching materials (LTSM) (n=31). Although various participants mentioned a lack of resources in the qualitative data, these high evaluations could possibly be ascribed to the fact that the teachers often use their own initiative to create resources because of financial restraints (§5.2.1.1 and §5.2.2.2).

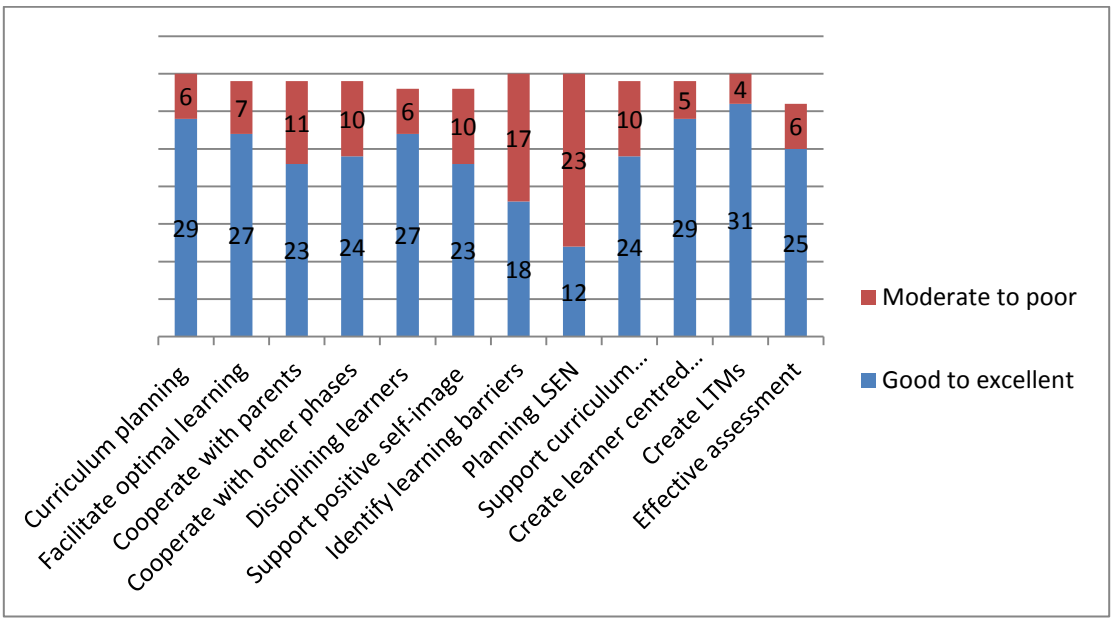

Fig 5.3: Evaluations of own professional Foundation Phase teaching skills and knowledge: comparing responses on the positive and negative sides of the scale

Although the participants generally rated their knowledge about aspects of Foundation Phase education as 'Moderate to Good' in the Likert scale questions of

the PreQ, the quotations related to *participant expectations* for the programme as collected through qualitative methods were positively linked to a desperate need for improved knowledge (n=85), and improved practice (n=66) (§5.3, Fig. 5.5). While the quantitative data indicated a belief that the teachers are equipped to create a *classroom environment* conducive to learning (Good to Excellent: n=31), and that they are competent in *disciplinary skills* (Good to Excellent: n=27), eight quotations (n=8) from the qualitative data expressed a need for *improved classroom management* skills. Quotations linked to the expectation that the programme will support them in gaining more knowledge (§5.3.1) included amongst others a need for PCK (n=15), knowledge of the current *school curriculum* (CAPS) (n=8), and *Improved planning* (n=7). During the interactive sessions various participants admitted that a lack of knowledge is hindering effective learning by learners:

FGr. T 5: So, we are making something which we are not supposed to do. We label them, assessing, putting them into a category instead of us assisting them.

PreQ.T34: I expect this programme to make me a much more better educator than I am, so that I can be motivational to my learners and colleagues with a better and understanding knowledge.

The qualitative data strengthened the findings derived from the quantitative data by confirming the need for *knowledge and skills to support LSEN;* written expectations for more knowledge to support LSEN was linked to 27 quotations (n=27) (§5.3.1), while 22 quotations (n=22) referred to the many LSEN to be accommodated in classrooms as part of the teaching context (§5.2.2).

The references made by participants with regards to ineffective in-service training by the NCDoE is a further reflection of a lack of confidence in their own knowledge and skills which has implications for a DL programme aimed at the professional development of practising teachers:

Exp. T11: As a foundation [phase] teacher there was confusion with our training. We were not well trained in writting. That is why now we are having a problem with our learners. (sic)

It is thus apparent that, although the participants generally indicated a confidence in their Foundation Phase pedagogical knowledge and skills in the semi-structured questionnaires, the qualitative data mostly contradicts this positive self-evaluation of knowledge prior to the programme implementation. A DL programme will not only have to determine prior knowledge as part of the teacher profile, but will also have to devise ways to support the development of knowledge that may be lacking, and guide the teachers in the implementation thereof in their specific teaching contexts.

- **Participants' self-evaluation of their self-directed skills**

The literature confirms the critical role of SD skills such as critical reflection on own practice and collaboration with colleagues for improved education standards (§3.2.2). SD also refers to the ability to learn from practice in a self-directed way (SDL) (Song & Hill, 2007, p. 27). The PreQ required of participants to rate their own SD regarding their ability to collaborate with colleagues and reflection *on* and evaluation *of* own practice. Responses on these SD skills are set out in Table 5.6 below.

Table 5.6: Participants' self-evaluation of SD skills

N=39	n	Excellent	Good	Moderate	Poor
Brainstorming colleagues to improve teaching and learning	**34**	**7**	**16**	**11**	**0**
Reflection on own teaching style	**35**	**4**	**23**	**8**	**0**
Critical evaluation of own teaching style	**35**	**2**	**23**	**10**	**0**
Peer evaluation by colleagues	**35**	**3**	**23**	**9**	**0**

According to Moore (1983, p. 7), SDL refers to the ability to plan, implement, and evaluate own learning (§3.2.2). As in the previous categories, the participants generally rated their aptitude to implement self-directed strategies such as collaboration with colleagues and reflection and evaluation of own practice, as *Good* in the semi-structured questionnaires. Although none of the participants viewed their ability in this regard as *Poor*, a few did indicate room for improvement by selecting

only a *moderate* ability to *brainstorm with colleagues* in order to improve teaching and learning (n=11), to *reflect on own teaching style* (n=8), to *critical evaluate own teaching style* (n=10), and to subject own teaching to *peer evaluation* (n=9).

In direct contrast to the responses on SD collected through the Likert-scale questions of the PreQ illustrated in Table 5.6, the data collected through qualitative methods indicated a critical lack of SD prior to implementation of the practical component of the DL programme. Twelve quotations (n=12) indicated an expectation that the programme would support the development of SD skills while participants often acknowledged their inability to apply these skills:

PreQ. T 8: I want to change my own learning styles so that I can help my learners too.

FGr. Teacher 1: They send all these circulars and stuff to school, to educate the educator and the principals tells you this and this, but what they don't understand, we are working with children, some of us are also like children, our minds are also like that. They don't explain they just give it to you and expect it to be done.

There is a clear discrepancy between responses in the quantitative and qualitative data collecting methods regarding participants' PCK as well as their self-directed skills related to Foundation Phase education. As discussed before, this discrepancy could be ascribed to the informal atmosphere created during interactive data collecting methods as well as to the fact that written ratings are viewed as a formal acknowledgement of own deficiencies which may discredit them as professional teachers. Written expectations and open written comments in the questionnaire further accentuated the discrepancy between the quantitative and qualitative data with regards to participants' prior knowledge bases and SD skills.

In the semi-structured questionnaires the participants generally rated their own knowledge of Foundation Phase learners' characteristics and development in the various domains as moderate to good, while the lowest ratings were assigned to their knowledge of learners' emotional and cognitive development. A good knowledge in these terrains is critical for quality teaching and effective learning in the Foundation Phase. The participants further mostly rated their knowledge of aspects of the

Foundation Phase teaching practice as Good to excellent but showed a lower self-efficacy belief in their professional knowledge and skills relating to collaborating with parents and supporting LSEN.

Since SD skills such as critical reflection on own practice and collaboration with colleagues are known to support sustainable applied competence as programme outcome (§3.3), a lack of these skills might further hamper the realisation of programme outcomes in practice. Programme design and content should therefore ensure that teachers are guided to develop and apply these skills during the programme implementation. Although reasons for this discrepancy between participants' relative positive ratings of their SD in the quantitative data, and the way they acknowledge a need for greater SD in the qualitative data, does not form part of this investigation, further research is suggested to improve SD by finding ways to support inquiry and reflection in DL programmes (§6.6).

5.2.1.3 Summary of teacher profile

Apart from the general older age of the teachers, aspects such as language diversity and their need for relevant PCK should be accommodated by a DL programme aiming to support applied competence. Although the quantitative data showed a strong self-efficacy belief of their PCK, the qualitative data sources indicated some inadequacies with specific reference to knowledge of the curriculum and supporting LSEN. The quantitative as well as qualitative data revealed a need for more SD such as critical reflection on own practice and collaboration with colleagues in the interest of improved education which is prerequisite for sustainable programme outcomes. The participants generally showed poor proficiency in English as LOLT which means that programme content and support should take cognisance of this determining factor. Not only should the programme content include relevant PCK to which teachers can relate, but content should be delivered in a language which they understand.

Together with the profile of the teacher, the contexts in which teachers need to implement new knowledge and skills gained through DL programmes will play a critical role in the way programmes will support improved applied competence as programme outcomes. Warranting that teachers do not only rely on rote learning of

content in order to master the content but that they pragmatically and reflectively apply new knowledge in practice, will require the incorporation of innovative design features as part of the DL programme.

5.2.2 Teaching context

The literature confirmed the critical role of the teaching context in the way teachers apply new knowledge and skills gained through a DL programme (§1.5.1; §1.5.4.1; §2.4.5), as well as the way they are motivated to sustain improved practice as output of the programme (§3.2.3; 3.3.2). Although exploring the theoretical and conceptual implications of the teaching context relied mainly on interactive data collected through qualitative methods, data collected through semi-structured questionnaires were also used to inform me regarding their teaching context. Constant comparison between these methods as well as other qualitative data sources served as triangulation to enhance the trustworthiness of the findings.

5.2.2.1 Teaching context derived from semi-structured questionnaires

Through the PostQ the participants provided the following information regarding their teaching context (Table 5.7):

Table 5.7: Context of the schools where participants are teaching

Geographical setting of current school	Urban 15	Suburban 2	Rural 16			
How many learners in your class?	Less than 20 learners	20–25 learners	26–30 learners	31–40 learners	41–50 learners	50+
	0	n=2	n=4	n=18	n=9	n=2

The literature confirms the poor socio-economic circumstances of large parts of the Northern Cape, especially in the rural areas (§4.2.1). Responses to ***geographical setting*** show that sixteen participants work in a rural area (n=16), 15 work in an urban area (n=15), and two participants described the area in which their school is situated as suburban or semi-rural. The literature confirms the general lower socio-economic level of rural schools as well as the lower standard of education often

observed in these schools since it is difficult to attract well-qualified teachers to these areas (South African Departments of Basic Education and Higher Education and Training, 2011, p. 12). Since more than half of the enrolled teachers are teaching in rural areas, this context need to be recognised by the programme design and delivery if applied competence is to be ensured. The participants' ages (§5.2.1) together with their geographical position has implications for DL programme design and delivery. Poor academic - and computer literacy may handicap learning by older teachers in a DL programme, especially those living and working in rural or semi-rural areas. This is confirmed by quotations collected during the semi-structured interviews (§5.2.1; §5.2.2.2). Measures thus need to be in place to support them.

The negative impact of large ***teacher-learner ratios*** on the quality of education is admitted by the government (South African Department of Basic Education, 2011a, p. 104). The Action Plan for 2014 refers to research in South Africa pointing to approximately 40 learners in a class being the maximum number of learners allowed in a class at primary level, beyond which serious teaching and learning problems are encountered. A total of 18 participants (n=18) indicated that they have between 31 and 40 learners in their classrooms, and nine participants (n=9) had between 41 and 50 learners (Table 5.7). These findings correlate with the findings by the South African DBE that approximately half of South Africa's public school learners are in classes with more than 40 learners and approximately 15% are in classes with more than 50 learners (South African Department of Basic Education, 2011a, p. 104). The large ratio can also have a significant effect on the way teachers are able to apply new knowledge gained in the classroom as required by the revised ACE programme as well as on their motivation to adapt previous teaching strategies. The teachers commented on this challenge in the interactive data as indicated in the following section.

5.2.2.2 Teaching context derived from qualitative data

The qualitative data collected through individual interviews, focus-group interview, written expectations of the programme, and open written comments on the questionnaire questions, provided in-depth information regarding the context in which the target group needs to implement knowledge and skills gained through the

programme. During the coding of the qualitative data the following categories related to the teaching context emerged:

- the socio-economic context of the district and school,
- the education system, including the role of the NCDoE,
- the school management, and
- the background of the learner.

Fig. 5.4 illustrates the network of these categories and related codes. All the codes related to the teaching context are indicated with the symbol [*] in ATLASti™ code networks. Each of these categories and their related codes has a reciprocal influence on each other which again has an influence on the development of the teachers' applied competence. However, illustrating all relations between these categories and codes in the network by means of connected links between codes will detract from the meaningfulness of the representation. The interrelatedness as indicated between the main elements therefore implies a possible interrelatedness between the codes of each category. Each of these categories is discussed in the following sections.

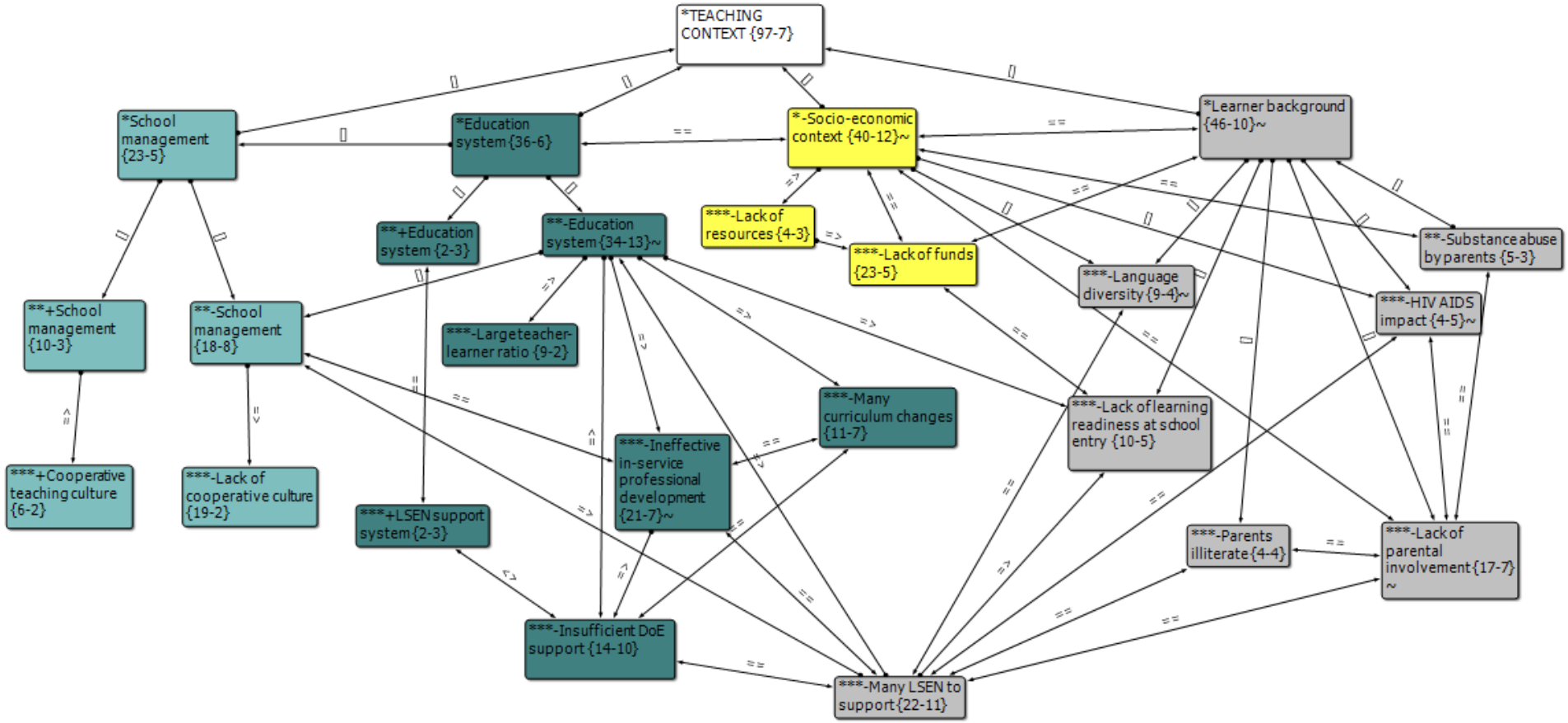

Fig. 5.4: Thematic network of the teaching context based on qualitative data

	School system and management related codes
	Socio-economic related codes
	Leaner background related codes

Table 5.8: Summary of categories and codes related to participants' teaching context as derived from qualitative data

Themes	Teaching context	97
Category	**SOCIO-ECONOMIC CONTEXT**	**40**
Codes	-Lack of funds	23
	-Lack of resources	4
Category	**EDUCATION SYSTEM**	**36**
Codes	+Education system	2
	-Education system	34
	+LSEN support system	2
	-Ineffective ISPD	21
	-Insufficient DoE support	14
	-Large teacher-learner ratio	9
	-Many curriculum changes	11
Category	**SCHOOL MANAGEMENT**	**23**
Codes	+School management	10
	+Cooperative teaching culture	6
	-School management	18
	-Lack of cooperative culture	19
Category	**LEARNER BACKGROUND**	**46**
Codes	-HIV AIDS impact	4
	-Substance abuse by parents	5
	-Lack of learning readiness	10
	-Lack of parental involvement	17
	-Many LSEN to support	22
	-Language diversity	9
	-Parents illiterate	4

- **Socio-economic circumstances as part of the teaching context**

Themes included in the network (Fig. 5.4) are labelled positive or negative depending on the way the participants responded. While the participants commented on positive as well as negative aspects relating to the *Education system* and *School management* as contextual determinants, no quotations could be linked to favourable

socio-economic factors. This category is therefore only indicated as a negative determinant in the teaching context.

The impact of the general ***poor socio-economic circumstances*** of the community on teaching practice was highlighted by 40 quotations. Twenty-three quotations (n=23) referred to a *Lack of funds* as part of the teaching context while 4 quotations (n=4) were linked to a *Lack of resources*. These two contextual factors are interrelated as demonstrated by the quotations listed in Table 5.9:

Table 5.9: Codes and quotations related to the socio-economic circumstances as part of the teaching context

CODES (2)	QUOTATIONS
Lack of funds [23]	Int. Teacher D: *Most of the parents are, let me say 85% of the parents are unemployed.*
Lack of resources [4]	Int. Teacher D: *Give us more concrete material, as we don't have materials. Like I said we've got financial constraints but if you just teach without concrete things you are doing nothing for a child 'cause she or he will never have an understanding of what you are doing…* Int. Teacher A: *We do not have resources unless you make them for yourself. Like maybe if I have to teach in FAL, I have to do puppets, you are the only one … you are supposed to do them… but we don't have any resources.*

Three of the four teachers who participated in individual interviews are employed by quintile two schools, which are rated as *no fees schools* which solely rely on finances from the government which often results in a shortage of funds for teaching and learning materials. Poor socio-economic circumstances contribute to a generally low teacher morale which may also result in a lack of motivation to improve own applied competence (§3.2.3). Schools in less privileged communities have to rely on the DoE to provide teaching and learning resources. Funding covers the bare necessities and a ***lack of LTSM*** was linked to four quotations. Such challenges may further hamper the professional development of teachers enrolled in a DL programme.

Most codes which are linked to the category *Learner background* (n=46), are in some way also related to the category *Socio-economic context* (Fig. 5.4). These shared codes relate to a lack of parental involvement which could be the result of various factors such as work responsibilities, illiteracy, substance abuse and HIV/AIDS.

Language diversity, a factor emanating from the socio-cultural background of the teachers and their learners, may further influence the teaching context. These socio-economic aspects, together with aspects in the education system such as inclusive education, also directly or indirectly have an influence on the number of LSEN in specific teaching contexts. While LSEN is primarily viewed as related to learner background as part of the teaching context, the role of these aspects as determinants of the socio-economic circumstances need to be recognised by the design of a DL programme (§3.3.2).

- **The education system as part of the teaching context**

The role of the education system and consequently also that of the DBE and NCDoE in the development of applied competence is implied by 36 quotations (n=36). While only two quotations (n=2) highlighted the supportive role of the education system, 34 (n=34) could be linked to the negative influence of aspects inherent in the system. Frustration with support by the DoE was highlighted in quotations listed in Table 5.10 below:

Table 5.10: Codes related to the education system as part of the teaching context

CODES (4)	TYPICAL QUOTATIONS
Many curriculum changes [11]	Int. Teacher A: *So every time something is changing, and then we get again on planning this… and next time…. it's this again, it's a little bit confusing.* PreQ. T2: *OBE comes with changes and now we can't rub them off where as they are problematic.*
Insufficient DoE support [14]	Int. Teacher A: *They come into the school and say this is wrong and then you go again and plan again and sometimes they come…. it's right but your teaching style… you know… there is something that they complain about. So we just get lost sometimes, especially if the system is continuously changing.*
Ineffective in-service professional development [21]	Int. Teacher C: *Because last time we went to a workshop and we… we dispersed without understanding what the lady was trying to tell us. And I was frustrated.*
Large teacher-learner ratio [9]	Int. Teacher A: *So it is very difficult, especially if you have many learners who are sick and some of them are orphans. And there are many in class. Like in our situation is that we have 46…47 in a class.*

Where teachers are struggling to come to grips with various ***curriculum changes*** in the past years, it may have had a profound effect on their confidence in own knowledge and consequently on their applied competence. Quotations demonstrating teacher discontent with regards to ***lack of support by the DoE*** (n=14) may have implications for teacher attitudes and commitment towards the ACE Foundation Phase programme aimed to support their applied competence. Quotations related to a lack of effective ***in-service professional development programmes*** (n=21) may also have resulted from a lack of knowledge (§5.2.1.2), as well as a general feeling of incompetence and hopelessness amongst teachers. The influence of teacher morale on teaching practice is confirmed in the literature (Ahmad et al., 2013, p. 26) (§3.2.3) while South African educationists also questions the effectiveness of professional development programmes such as workshops organised by the DBE (Taylor, 2013).

Quotations confirmed the findings derived from the quantitative data regarding ***large teacher-learner ratios*** (§5.2.2.1). All four interviewees indicated that they have more than 40 learners in their classes. The implications of large teacher-learner ratios which is often the case in a poor socio-economic context is highlighted in the literature (§3.3.2).The impact of such large classes is even more critical in circumstances where teachers do not receive assistance or lack sufficient knowledge and skills to support LSEN in an inclusive education system. Although other categories related to the teaching context clearly also have an influence on the number of LSEN as well as the measure of learners' special education needs, the education system plays an important role in the way teachers are able to support these learners to learn. The interrelationship between poor socio-economic circumstances and poor learning outcomes (Hertert & Teague, 2003, p. 5) (§3.3.2) could contribute to the large number of LSEN in these teachers' classes. Various quotations discussed below as factors emanating from the learner background confirmed the high number of LSEN to be supported by the target population due to factors such as illiterate parents, substance abuse by mothers during pregnancy (FAS) and poor learning readiness of learners at school entry (Table 5.12).

The following quotation confirms the relationship between poor socio-economic teaching context and an increased need for teachers to support LSEN:

Exp. T13: My expectation for 2012 is to learn more about dealing with children with special needs. I hope the programme will address more on this issue because at our school most of our children comes from poor community, where parents are not educated and are drinking a lot. So children come to school having problems. E.g. starting school at a very late age and not having a good Foundation. Children having drinking and drug problems because parents and those living around them using them.

The burden placed on teachers to support an increasing number of LSEN in an inclusive education system is further confirmed by the teachers' written expectations for the programme (§5.3). The anticipation that the programme will better equip them with knowledge to support LSEN was linked to 27 of the participants' written expectations (n=27) (§5.3.1). Such a scenario, where teachers are struggling to support many LSEN, and at the same time plan for and implement a new school curriculum for meaningful learning experiences for more than 40 learners in a class, has implications for the development of teachers' applied competence through professional development programmes. However, two quotations could be linked to provision by the DoE to support LSEN:

Int. Teacher C: Toe bel ek die school clinic, so die kind gaan nou…hulle gaan vir hom 'n appointment doen to go and see the speech therapist.

[ET: Then I phoned the school clinic, so the child is now going… they are going to make an appointment to go and see the speech therapist.]

Int. Teacher B: En ons het 'n spesialis, 'n Mevrou De Beer, dan kom sy in en sy toets die kind, en dan op 'n verslag wat sy uitgee, moet die kind dan gaan na 'n spesiale skool.

[ET: And we have a specialist, a Mrs De Beer, and then she comes and she tests the child and then on a report that she gives, the child then goes to a special school.]

- **School management as part of the teaching context**

Quotations related to the education system as well as the school management disclosed positive as well as negative experiences. Although school management could be viewed as part of the education system, it was explored as a determinant

that may influence the development of applied competence since it directly impacts on the day-to-day work of teachers as well as their professional development (§3.3.2). Table 5.11 lists the codes related to the role of school management in the teaching context with examples of typical quotations.

Table 5.11: Codes related to the school management as part of the teaching context

CODES (4)	TYPICAL QUOTATIONS
+School management [10]	Int. Teacher B: *Sy's baie streng. Dis 'n vrou. Ons het… verlede jaar was dit van agtuur tot halfses daai aand was dit onse bosberaad. Sy is baie streng.* *[ET: She is very stern. It is a woman. Last year we had a bush deliberation from eight O'clock until half past five that evening. She is very stern.]*
+Cooperative teaching culture [6]	Int. Teacher D: *At school we as Foundation Phase teachers sit in groups, like Grade ones, will sit maybe Wednesday, Grade twos maybe Thursday, and Grade threes Fridays. So we plan according to our groups and we sit and discuss, especially the CAPS document… they are very interesting… ja…. So we go about designing our work from this… most of this we get our information from the CAPS documents so we design our weekly plan.*
-School management [18]	Int. Teacher A: *You know at our school we have committees, but concerning finances, I think we are…. how I can put it…..maybe ignorant about the finances of the school or everybody is doing his or her own thing. Or the committees are, I mean we are not that you notice this…*
-Lack of cooperative culture [19]	Int. Teacher C: *And the principle also… they are not backing us too much. Or maybe it is at the school that I am. People are not that much helpful.* PreQ. T35: *The school did not give us chance, always working until late at our school. These last week I did not sleep.*

Ten quotations (n=10) referred to effective school management while 18 quotations (n=18) were linked to dissatisfaction with the role played by school management such as a poor implementation of school policies, lack of teacher support by management, and a general inability to create a collaborative culture in the school (Table 5.11).

School management is also blamed for the admission of under-aged learners in Grade 1:

Int. Teacher A: because we are not admitting school ready children. Most of the children are six years old… and another not yet six. And you find that they struggle in class because we do not have a policy. We can't say we deny the children from coming to school.

Supporting teachers through parent guidance is quoted as a deficiency of school management by one teacher in the open-ended section in the PreQ:

PreQ.T2: The learners that we deal with they are having serious problem; we end up blaming each other. There are no programmes where the parent should come and explain why the learners are having trouble. We are having challenging products in our schools. Learners can't read and write

- **Learner background as part of the teaching context**

Learner background contributes significantly to the teaching context. As discussed above, the interrelationship between learner background and other contextual factors collectively play a role in creating a teaching context.

Table 5.12: Codes related the leaner background as part of the teaching context

CODES (7)	TYPICAL QUOTATIONS
-HIV AIDS impact [4]	Int. Teacher D: *So we've got learners so… I sit down and read it (HIV AIDS policy), I go through it and it really helped with this… as how you can handle a learner or your colleague… that they must be accepted...* Int. Teacher A: *So it is very difficult, especially if you have many learners who are sick and some of them are orphans*
-Substance abuse by parents [5]	Int. Teacher B: *Daar is ouers wat soms onder die invloed van alkohol kom hulle as dit oueraand is wat mens nogal voel dis.... daar waar ek skoolhou is die omstandighede baie moeilik, baie moeilik.. [ET: There are parents who are under the influence of alcohol when it is parents' evening which makes one feel that… there where I teach the circumstances are very difficult, very difficult...]* PreQ. T12: *Learners are different there are those with problems FAS, cronic illness.*
-Lack of learning readiness [10]	Int. Teacher A: *because we are not admitting school ready children. Most of the children are six years old… and another not yet six. And you find that they struggle in class because we do not have a policy. We can't say we deny the children from coming to school*
-Lack of parental involvement [17]	Int. Teacher B: *dit is 'n woonbuurt waar ouers nie omgee nie.... en gee nie hulle samewerking nie.* [ET: It is an area where parents do not care and do not cooperate] Int. Teacher A: *Most of the time the parents do not attend even a simple meeting, a grade meeting, it is so difficult for them to attend. Because it's… rather you will make it earlier than late, because if it is in the afternoon they won't be able to attend it..*
Many LSEN to support [22]	Int. Teacher A: *Accommodating learners with barriers, because that one is a bit of a challenge…learners with barriers… but if you do not know how to handle them, or how to teach them or how to involve them in our learning, it is going to be a little bit difficult.* PreQ. T24: *I expect to know how to deal with learner with leaning problem. Because most of learner where I am present teaching experiencing problem.* PreQ. T26: *The most challenging about foundation phase is helping learners with barriers to learning, because of the little knowledge of how to go about it especially in extreme cases.*

CODES (7)	TYPICAL QUOTATIONS
-Language diversity [9]	Int. Teacher C (LOLT: Setswana): *The one parent that I asked, told me that she wanted to enrol her child, the child is Xhosa speaking, she wanted to enrol him in a Xhosa school but at the time the school was full, so they just decide to bring him to our school.*
-Parents illiterate [4]	Int. Teacher A: *So we experience lots of problems because the grandparents are not learned….they are illiterate…. not learned.*

The influence of the ***HIV/AIDS*** pandemic on teaching and learning was linked to four quotations (n=4). Children who are infected are also regarded as LSEN and teachers often have to support these children to catch up for lost time. Learners suffering from chronic illnesses such as HIV/AIDS not only put more strain on the teachers but may also hamper quality teaching to the rest of the group.

The effect of ***substance abuse*** on teaching was linked to 5 quotations (n=5). Foetal alcohol syndrome (FAS) in which a child's mental and physical development is damaged through alcohol abuse by mothers during pregnancy, is mentioned by participants as a barrier to effective teaching and learning. The role played by parents and family to support the learning process should not be underestimated, and where socio-economic circumstances debilitate the parents' role as co-educators of their children, it puts a heavy burden on teachers as sole responsible person for learner progress. Lack of ***parental involvement*** was commented on 17 times (n=17). If parents are unemployed and where substance abuse is rife, it often leads to stressful circumstances for the learner and the rest of the family. This further contributes to a lack of funds and schools often need to provide living means such as food and clothing:

Int. Teacher D: And the school is providing everything for the children. Yes… Living materials... even now we have organised the uniform for them. They don't come with lunch tins… they eat from the school….

Nine quotations (n=10) referred to ***the lack of learning readiness*** of learners at school entry which is closely related to poor socio-economic circumstances. Grade R does not yet form part of the subsidised school system and where parents do not have the necessary funds to enrol their children in a Grade R class, the primary school is often regarded as free day care which means that they enrol their children

in Grade 1 before they are six years old which further complicates the teaching context. Apart from the harm done to the self-efficacy beliefs of these young learners, the scenario further complicates the teaching situation; teachers have more LSEN in their classrooms which takes up valuable teaching and learning time.

As clearly illustrated in the network (Fig. 5.4), ***LSEN*** included in mainstream education is related to the education system, the background of the learner as well as the socio-economic circumstance of the learner and the community. Twenty two quotations (n=22) confirmed the teachers' dilemmas in accommodating all learners including LSEN. Participants also refer to the inability of learners to read and the consequences it has for learning:

Int. Teacher D: [ ] and they are also struggling with mathematics and now the problem is even if they can't read how are they going to apply their mathematical skills?

As already discussed under aspects related to the teacher profile, ***language diversity*** plays a critical role in the teaching context and was confirmed by nine quotations (n=9). Four quotations referred to the barrier caused by ***illiterate parents*** or caregivers (n=4). In cases where learners are raised by grandparents support in the form of guidance in homework and providing additional support to rectify learning deficiencies at home, may be hampered.

5.2.2.3 Summary of the teaching context

From the above findings it is clear that the teachers have to apply new knowledge gained through the programme in a challenging teaching context. These challenges relate to socio-economic aspects, aspects related to the education system and school management, as well as aspects related to the learner background.

Analysis of both quantitative and qualitative data shows that the teacher profile as well as the teaching context of the Northern Cape Foundation Phase teacher enrolled for the Foundation Phase ACE programme has theoretical and conceptual implications for the DL programme aiming to support teachers' applied competence. These implications are discussed in Chapter six (§6.3.2.1). The learning portfolio, as well as the audio-visual material as design features of the practical component added

to the DL programme was specifically implemented to guide teachers in the development of applied competence while also accommodating the profile and teaching context of teachers practicing in the Northern Cape Province. The following section reports on the analysis of the participants' expectations and experiences with regards to the practical component of the programme.

5.3 TEACHERS' EXPECTATIONS OF THE WAY THE PROGRAMME WILL SUPPORT THEIR APPLIED COMPETENCE

This section reports on the data to find an answer to the following question:

> *What are the expectations of Foundation Phase teachers regarding the way in which the practical component of the DL professional development programme will support applied competence in their contexts?*

In the first session of the second year (§4.2.2) held at the contact centre in Kimberley, the participants were asked to write down their expectations of the way the practical component would support their applied competence. These written expectations, together with quotations collected during the focus-group interview, and the open written comments in the PreQ on their expectations for the practical component of the programme, were analysed to determine the teachers' expectations for the programme. The findings based on this data were constantly compared with other qualitative as well as quantitative data sources for a deeper understanding of teacher expectations prior to the practical component, the relation between these expectations, and other issues such as teacher profile and teaching contexts (§5.2). Comparing the teachers' expectations for the programme with their experiences of the way the programme supported their applied competence after the implementation of the practical component (§5.4), further served as triangulation to crystallise the findings.

The participants' expectations of the practical component were analysed and coded according to the elements of applied competence, namely i) expectations for development of professional knowledge, ii) expectations for improved SD, iii)

expectations for improved practice, and iv) expectations for the development of professional attitudes. All the codes related to the participants' expectations of the programme are indicated with an exclamation mark [!] in ATLASti™ code networks. The categories and codes which emerged from the qualitative data are summarised in Table 5.13 and illustrated in Fig. 5.5.

Although this network (Fig. 5.5) only shows the relationships between the categories and their related codes, they represent the possible interrelatedness of codes within and between categories. This implies that the expectations a teacher may foster for the way the programme will develop her knowledge of LSEN implies an expectation that the programme will improve her practice by equipping her with new knowledge. A network showing this interrelatedness between the main categories of teacher expectations can be viewed in Appendix D.

Table 5.13: Categories and codes related to participant expectations for the programme

THEME:	PARTICIPANT EXPECTATIONS	
Category Codes	**EXPECTATIONS: KNOWLEDGE GAIN**	**85**
	+Curriculum knowledge	8
	+Improved PCK	15
	+Knowledge of assessment	6
	+Knowledge of DAP	9
	+Knowledge of LSEN	27
	+Knowledge to involve parents	3
	+Computer literacy	1
	+Computer literacy of learners	1
Category Codes	**EXPECTATIONS: IMPROVED SD 12**	**46**
	+ Improved collaboration - colleagues	6
	+Improved planning skills	7
	+Empowered to support others	10
	+Equipped to make a difference	9
	+Improved understanding of teaching	6
Category Codes	**EXPECTATIONS: ATTITUDE**	**18**
	+Exciting learning experience	2
	+Intrinsic motivation	10
	-Extrinsic motivation	6
Category Codes	**EXPECTATIONS: IMPROVED PRACTICE**	**66**
	+Accommodate learner diversity	7
	+Apply theory in practice	11
	+Guided applied practice	10
	+Improve own practice	24
	+Improved classroom management	8
	+Improved pedagogy	7

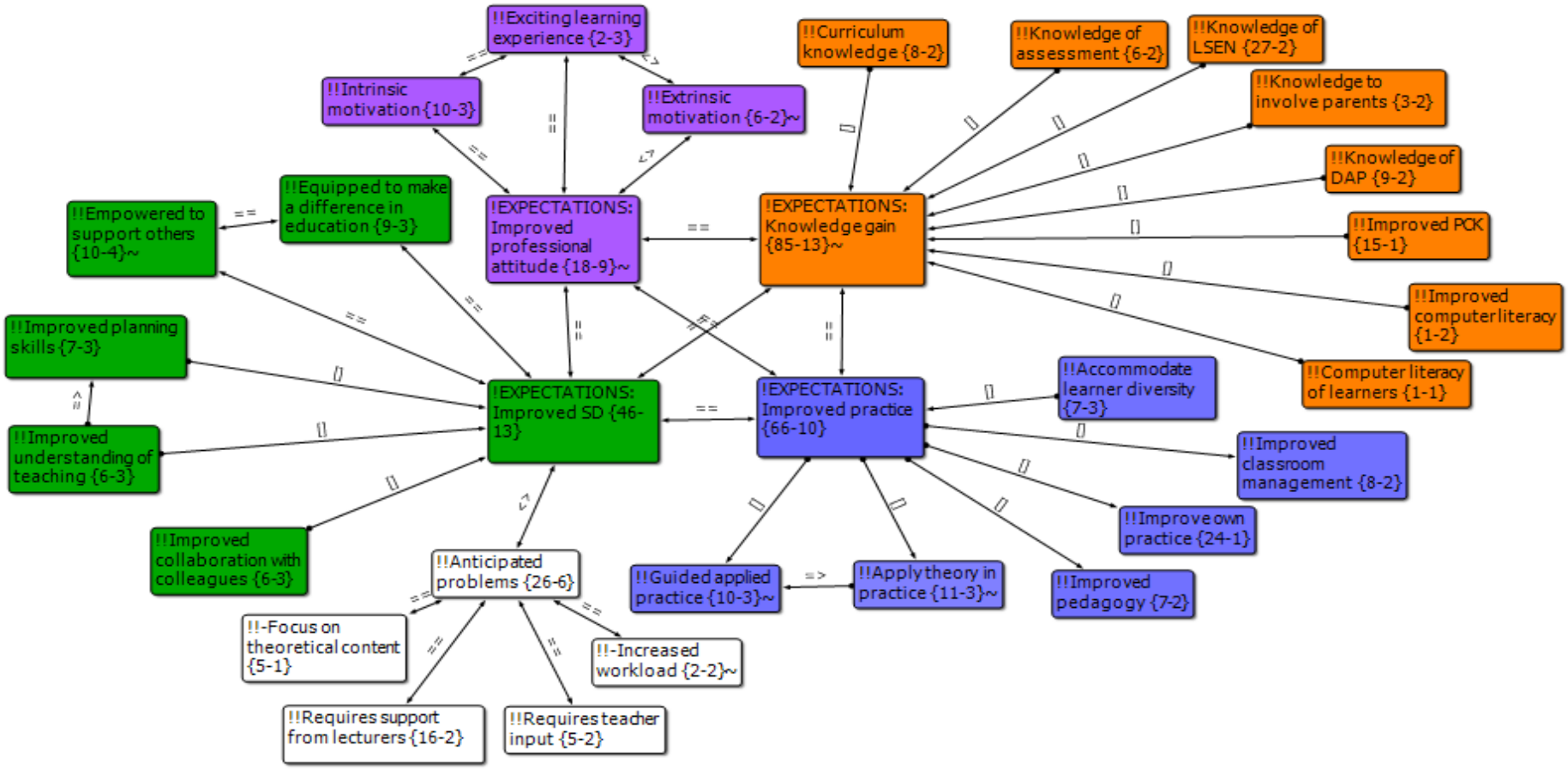

Fig. 5.5: Participants' expectations of support for applied competence through the programme

	SD related codes (reflection and/or inquiry)		Knowledge related codes (content)
	Attitude related codes (motivation, commitment)		Practice related codes (application in practice)
	Anticipated problems		

5.3.1 Expectations related to the development of knowledge

The relationship between the need for relevant knowledge and applied competence is obvious as all the quotations referring to expectations of *knowledge gain* through the programme (n=85) are prerequisites for *applied teacher competence,* and could therefore be positively linked to all the codes related to knowledge gain. In the same way all *knowledge gained* can be associated with expectations of *improved teaching practice*.

The higher frequency of quotations citing *knowledge gain* in relation to expectations for other elements of applied competence, could be attributed to factors such as a dire need for knowledge in order to cope, an awareness of the relationship between knowledge and practice, a traditional belief that DL programmes primarily supplies a knowledge base or the mastery of knowledge for summative assessment purposes. This focus on examinations and attaining a qualification was expressed by three participants as follows:

Exp. T1: To write examination and pass.

Exp. T 7: I expect that this year will be my last year and that I will grade at the end.

PreQ. T 34 (PreQ- Q.9): I expect to graduate in this programme, which will make me very proud for my learners, my colleagues, the community, my family and myself.

Code frequency and examples of quotations which emerged from the participants' expectations related to knowledge gain, are illustrated in Table 5. 14.

Table 5.14: Codes related to participant expectations for the development of knowledge

CODES [8]	TYPICAL QUOTATIONS
Knowledge of LSEN [27]	PreQ. T 15: *And help me in how to deal with inclusive education in my classroom, because I was not trained and have child with disability in my classroom.* PreQ. T29: *I like at the end of this programme to deal with learners with barriers.* PreQ. T 24: *I expect to know how to deal with learner with leaning problem. Because most of learner where I am present teaching experiencing problem. And also to deal with parents in order to support the learner.*
Improved PCK [15]	PreQ. T 23: *To know more about foundation phase. To teach the learner effectively and fair…*
Knowledge of developmentally appropriate practice (DAP) [9]	Exp. T 6: *How to create different task for different levels of learners*
Curriculum knowledge [8]	Exp. T15: *It is also to be more informed about CAPS, What learners need to be assessed on, and how to intergrate learning areas.*
Knowledge of assessment [6]	Exp. T 6: *How to record it without felling like I am unfair to the other learners.*
Knowledge to involve parents [3]	Exp. T 6: *How to encourage parental involvement in to the classroom.*
Improved computer literacy [1]	PreQ. T 23: *To know the computer – how to put the learners marks in the computer.*
Improved computer literacy of learners [1]	PreQ. T 12: *Teach them to be computorar literacy how to work with computer, at the early stage.*

Expectations of more knowledge to accommodate LSEN showed the highest code frequency (n=27). It can therefore be assumed that the participants are still experiencing a dire need for more knowledge in this specialised field of education even after the first theoretical year. This critical need is also confirmed in the quantitative data (Table 5.5 and Fig. 5.3).

The relatively high frequency of the code *Improved PCK* (n=15), can be ascribed to the fact that PCK includes other more specific knowledge-related codes such as *Knowledge of developmentally appropriate practice (DAP)* (n=9), *Curriculum knowledge* (n=8), and *Knowledge of assessment* (n=6). The need for improved

collaboration with parents as identified in the quantitative data (§5.2.1.2), is confirmed by three quotations indicating an expectation of knowledge on how to *Involve the parents* in the education of their children (n=3). The expectations for more curriculum knowledge may be a need resulting from the current confusion amongst teachers caused by various curriculum changes in recent years.

5.3.2 Expectations related to improved self-directedness

The participants indicated expectations related to all elements of applied competence (Fig.5.5). Although SD plays a critical role in sustainable professional development (§3.2.2 and §3.3), not one participant explicitly expressed the anticipation that the programme would support the development of SD knowledge and skills, such as reflective and inquiry based practice which may be indicative of a general ignorance amongst the target population with regards to this critical teacher competence. However 46 expectations (n=46) were linked to codes associated with more self-directed practice – as illustrated in the network (Fig. 5.5).

Any expectation for improvement and change, whether in gaining knowledge or improving own teaching practice is in itself self-directed. All the expectations could therefore in effect be linked to *Expectations: Improved SD* which necessitates a connection with the other categories of expectations namely expectations for *Knowledge gain*, *Improved practice,* and *Improved professional attitude.* The codes specifically related to expectations of *Improved SD*, include expectations for attainment of 'ultra-outcomes'. Although these codes are related to expectations of SD, they are also dependent on all the other elements of applied competence. Attainment of these outcomes will increase the likelihood of sustainable applied competence as programme outcome. The ultra-outcomes include *Equipped to make a difference in education* (n=9), and *Empowered to support others* (n=10). A third ultra-outcome, namely *Transformative learning* experience, also emerged from the participants' experiences of the programme (§5.4.1) but did not emerge from their expectations. The codes related to these ultra-outcomes strongly indicate an expectation of more reflective and self-directed practice. The codes and quotations listed in Table 5.15 illustrate this critical evaluation of own practice and anticipation to learn more in order to change inappropriate practice:

Table 5.15: Codes related to participant expectations for improved SD

CODES (5)	QUOTATIONS
Improved collaboration - colleagues [6]	Exp. T15: *My expectations for 2012 is to be more hands-on, give my studies priority, work with other colleagues, ask where I don't understand.*
Improved planning skills [7]	FGr. T1: *But [the way] this portfolio helps another is, I know what to do and I know how to do it well. So it helps me, I don't have to run around like a chicken with a cut-off head. You understand what I'm trying to say?*
Empowered to support others [10]	PreQ. T27*: To be able to work constructively with learners with barriers and to help other educators to be able to contribute to this.*
Equipped to make a difference [9]	Exp. T 11: *I don't want to pass only. My wish is to be able to transfer the knowledge I have gain from this programme to the learners. To be able to make the difference at my school, to help learners with learning problems.*
Improved. understanding of teaching [6]	PreQ. T 8: *I would like to know more about this module [Module: LSDL 528]. I was trying to gain confidence in it because it explains clearly what the teacher is expected to do, but the time was very short and limited. I now understand why our learners encounter problems after I have read this module – we feed them more than guiding them to get their own answer independently.*

The logical relationship between codes related to expectations of *Improved SD* and *Improved professional attitude* is apparent from the above quotations as SD is highly associated with expectations for an improved professional attitude as discussed below. The expectation of support in developing knowledge and skills associated with self-directed practice to ensure sustainable applied competence is summarised in the following quotation:

Exp. T7: I personally would like to see us educators be motivated and inspired in doing our jobs and getting the satisfaction at the end producing well informed, motivated and self-dependant learners who are critical thinkers and entrepreneurs.

The understanding that attaining the outcomes of the programme requires a lot of input is also regarded as SD:

Exp. T6: Courage to keep on! Even if things are getting hard.

Participants who expected the programme to contribute to greater collaboration with colleagues (n=6) may have referred to the group tasks that formed part of the

learning portfolio requiring teachers to combine their knowledge and skills to design learning experiences. Various participants commented on the lack of a cooperative culture in the school where they are teaching which may be the reason for this expectation:

PreQ. T30: To improve teaching and learning we as learner and teacher must be able to work together.

PreQ. T36: Most of the teachers at school don't like sharing ideas. It seems as if elke een is vir himself [ET: each one for himself]. I like sharing but sometimes it is difficult to come together and share.

From the above it is clear that anticipation and a striving towards more self-directed practice play a critical role in the way a programme will motivate teachers to improve their teaching practice.

5.3.3 Expectations related to support for improved professional attitude

Expectations of change in attitude may be an indication of expectations for improved applied practice since a professional attitude directs practice (§2.2.1 and §3.2.3). A professional attitude, which includes motivation and commitment to improve own teaching practice, is the drive behind the mastering of skills and knowledge and consequent improved applied competence (Opfer & Pedder, 2011, p. 387). If a programme successfully equips teachers with skills that strengthen their self-efficacy beliefs, it will at the same time strengthen their commitment and professional attitude.

Although the category *Expectations: improved professional attitude* did not explicitly emerge from the participant expectations, Fig 5.5 illustrates the interrelatedness of this category and all other expectations. Without anticipation of professional development, teachers may not be motivated to use this learning opportunity to improve their applied competence (§3.2.3).

A negative approach to the programme was mostly caused by expectations that the learning portfolio would add to already heavy workloads:

PreQ. T35: Just at our school we have many work to do we have little time to study. Studies were very short. Time was short. But I will try.

The category *Expectations: Improved SD* is closely related to the category *Expectations: improved professional attitude* since striving to make a difference in the current poor education situation in the country can be attributed to a highly self-directed and professional approach to the teaching profession as discussed in §5.3.2. Nine participants (n=9) expressed the hope that the programme would *Equip them to make a difference in education* which clearly illustrates an anticipated improved professional attitude. The following serve as examples:

Exp. T7: The dept. of education is trying its utmost best to help educators but I think if all are empowered through this programme then in a way the educators would also be able to help to improve the education of our learners. I expect this year to do the best I can and the information that I have gained from this programme to go and utilise it in my learners / class.

Exp. T11: I don't want to pass only. My wish is to be able to transfer the knowledge I have gain from this programme to the learners. To be able to make the difference at my school, to help learners with learning problems.

Since the practical component of the programme required SD and a professional attitude regarding commitment to plan and implement the self-study tasks and compiling the learning portfolio, six expectations illustrating *Extrinsic motivation* raise questions about the sustainability of applied competence in these cases:

Exp. T1: To write examination and pass.

Exp. T5: Don't panelise us with late submission assignments by not giving us our results. Because we want (need) to pass and finish the programme, and to be proud of the programme.

Ten expectations relate to *Intrinsic motivation* which could be an indication that, should the programme meet the expectations of these teachers, they would be motivated to implement skills and knowledge in a sustainable way:

FGr. T5: I'm expecting a lot because I am very excited. Looking forward to learning about the portfolio. So maybe it would also address, like she said, learners with special needs.

FGr. T2: I'm very excited – I'm glad I enrolled – I'm not sorry – I'm excited – Yeh - after I'm finished here I'm not going to stop.

Exp. T7: I would like to be able to can help the learners that have some learning difficulties and I have realised that once you know what you are doing the work load is getting a bit easier.

5.3.4 Expectations related to support for improved applied practice

Sixty-six quotations (n=66) could be linked to *Expectations: improved applied practice.* Although the network in Fig 5.5 only shows the links between the main categories of the theme, the analysis of expectations related to improved applied practice also acknowledges the influence of other categories and their codes on participant expectations. *Expectations: Knowledge gained, Improved SD* as well as *Expectations: Improved professional attitude* will have a direct influence on *Expectations: applied practice*. Codes and typical quotations related to expectations for improved practice are set out in Table 5.16 below.

Table 5.16: Codes related to the participant expectations for improved practice

CODES (6)	TYPICAL QUOTATIONS
Improve own practice [24]	PreQ. T29: *I like at the end of this programme to deal with learners with barriers. To develop my teaching styles.*
Apply theory in practice [11]	Exp. T10: *To be able to implement what I learnt through the ACE programme positively in my class.*
Guided applied practice [10]	FGr. T6: *The department is only sending it in paper, but they don't come personally to show you practically or what to do when they say this should be done. So this is going to assist a lot, also on that level and balance. So I'm sure all of us will benefit at this stage.*
Improved classroom management [8]	PreQ. T17: *I wish I could manage to discipline them in a professional way as we are no longer allowed to use corporal punishment*

CODES (6)	TYPICAL QUOTATIONS
Improved pedagogy [7]	PreQ. T35: *Like helping with reading, writing and many [others]*
Accommodate learner diversity [7]	PreQ. T12: *Learners are different there are those with problems FAS, cronic illness, good academical some have skills. I want to accommodate all.*

Expectations for *Improved practice* (n=24), ability to *Apply theory in practice* (n=11) and *Improved pedagogy* (n=7), are closely related to expectations for *Knowledge gain* (§5.3.1) since a good knowledge base is prerequisite to these skills. In essence all expectations related to improved practice should be linked to an expectation for *Knowledge gain* as all aspects of effective education are grounded in a good knowledge base.

The expectation of *Guided applied practice* (n=10) may be an acknowledgement that teachers need support to apply knowledge in practice as is clear from the quotation of Teacher 6 during the focus-group interview (Table 5.16). Large teacher-learner ratios (§5.2.2.1) as well as the abolishment of corporal punishment in schools are often blamed for poor discipline in classrooms which may also be the reason for the anticipation of *Improved classroom management* (n=8) as programme outcome. Should the programme design features support the development of these anticipated knowledge and skills it could contribute to improved applied competence since they would be a response to the participants' own expectations founded in critical reflection on own professional learning needs.

5.3.5 Expected barriers to the way the programme will support applied competence

The interrelatedness between the themes illustrated in Fig. 5.5 and the consequent interrelatedness between the codes of each theme as derived from the data on the expectations of the participants, confirm the valuable contribution the programme could make should these expectations be met. A few participants however also expressed their expectations of problems they may experience which may hamper support for improved applied competence. Some of these barriers are credible and originate from contextual difficulties or deficiencies in programme delivery:

Exp. T12: But at times I don't get sms messages then I hear from other students that they attended contact sessions, so for this year I don't want be locked out I want to be part and parcel of the programme.

Exp. T8: The tutors must be available to respond to challenges of students immediately.

However, some barriers identified are clearly related to a lack of SD or a negative approach towards the opportunity for professional development:

Exp. T5: Our lecturers to guide us before exams. To think about us when they mark script. Not to fail with one mark.

Int. Teacher C: The portfolio has a lot of work and a lot of time which we don't have.

5.3.6 Summary of participants' expectations for the practical component

The participants' expectations of the practical component of the programme contradict their own positive rating of their knowledge with regards to aspects of Foundation Phase education (§5.2.1.2;Table 5.4; Table 5.5; Fig. 5.2; Fig. 5.3). Where teachers generally showed confidence in their knowledge and skills, their expectations show a dire need for knowledge in areas such as LSEN, pedagogy, planning *for* and assessment *of* learning, and DAP. This discrepancy between professional learning needs and own ratings were also confirmed by quotations collected through individual interviews (§5.4) and an analysis of the participants' portfolios (§5.5).

The participants' expectations of the programme clearly indicate the way the programme and specifically the practical component of the programme should support improved knowledge of teaching, improved applied practice, and the development of a professional attitude. High code frequencies emerged for codes related to expectations for knowledge gain and improved practice. A lower frequency of codes emerged for explicit expectations of the development of SD, such as a more reflective or inquiry-based practice, as well as for improved professional attitude. As self-directed learning as well as a professional attitude will play a critical role in the

way programme outcomes are sustainable in practice after completion of the programme (§3.3), it is necessary to evaluate the way participants experienced the programme to have supported these and other elements of applied competence.

5.4 TEACHERS' EXPERIENCES OF THE WAY THE PROGRAMME SUPPORTED THEIR APPLIED COMPETENCE

This section reports on an analysis of the data to find an answer to the following question:

> *How do Foundation Phase teachers experience the practical component of the DL professional development programme in terms of supporting their applied competence?*

The data collected through individual interviews served as the main source to answer this question since it provides in-depth insights into the teachers' experiences of the programme. The data collected through the PostQ is also used as descriptive data for triangulation and to strengthen the trustworthiness of findings. Analysis entails the constant comparison with data collected through the other data collection methods.

The literature reflects the following elements of effective teacher education programmes aiming at applied competence as outcome:

- relevant PCK,
- meaningful learning through SD skills namely reflection and inquiry,
- support for the development of a professional attitude, and
- guided application of knowledge in practice (§3.2).

Codes on the participants' experiences of the programme were organised according to these elements of applied competence, and constantly compared with the data collected on their expectations of the practical component (§5.3) as well as with

findings on the teacher profile (§5.2.1) and teaching context (§5.2.2) to determine in which way the programme addressed the professional needs of the target group.

All the codes related to the participants' experiences of the programme are indicated with a hash symbol [#] in ATLASti™ code networks. The levels of the codes are indicated by the number of hashes. Quotations collected during the interviews and open responses in the PostQ were analysed to determine *positive codes* [+ #] (codes linked to quotations indicating that the programme supported the various elements of applied competence), as well as *negative codes* [- #] (codes linked to quotations related to an insufficiency with regards to the elements of applied competence after completion of the programme). The symbol for identified ultra-outcomes also include the caret [+#^]

For greater clarity the networks in this chapter only include major codes and the links between codes within the same category. The elements of applied competence as identified in the literature represent the categories which are illustrated in Fig. 5.6.

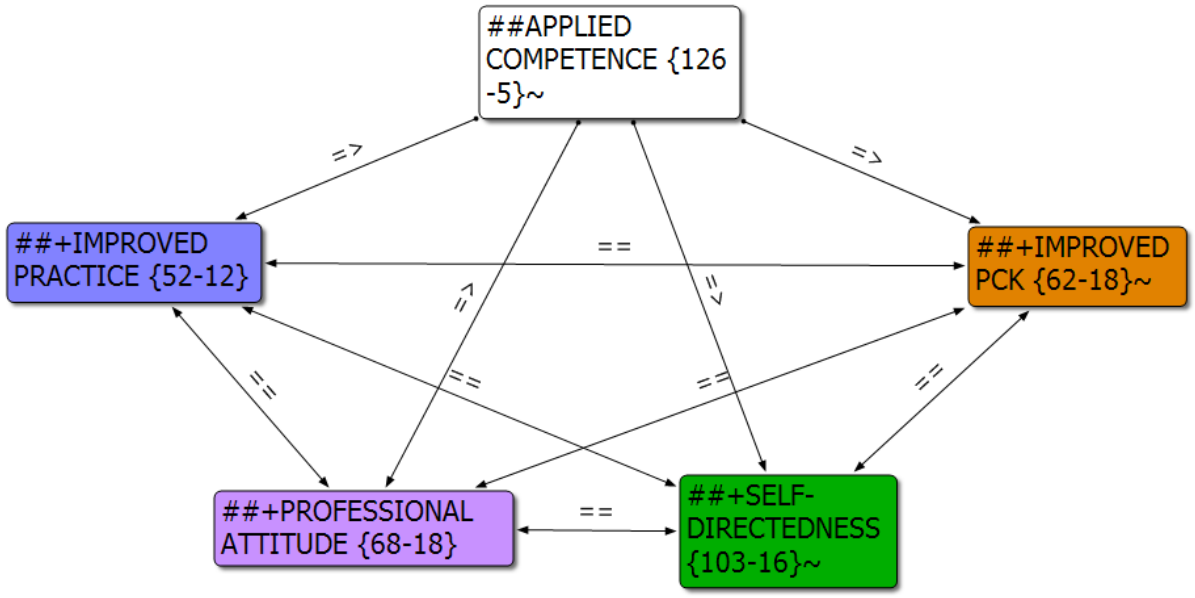

Fig 5.6: Categories related to participants' experiences of the way the programme supported the elements of applied competence

The categories correlate with the four elements of applied competence and are interrelated. This interrelatedness between elements implies a connectedness between the codes of one element and also between the codes of the different elements. Although the multiple links between codes as illustrated in Fig. 5.6 are acknowledged, the individual analysis of all elements in the network in Fig. 5.7 only shows links to codes related to each element for a more meaningful illustration. This network provides a holistic view of the most essential codes related to all four elements.

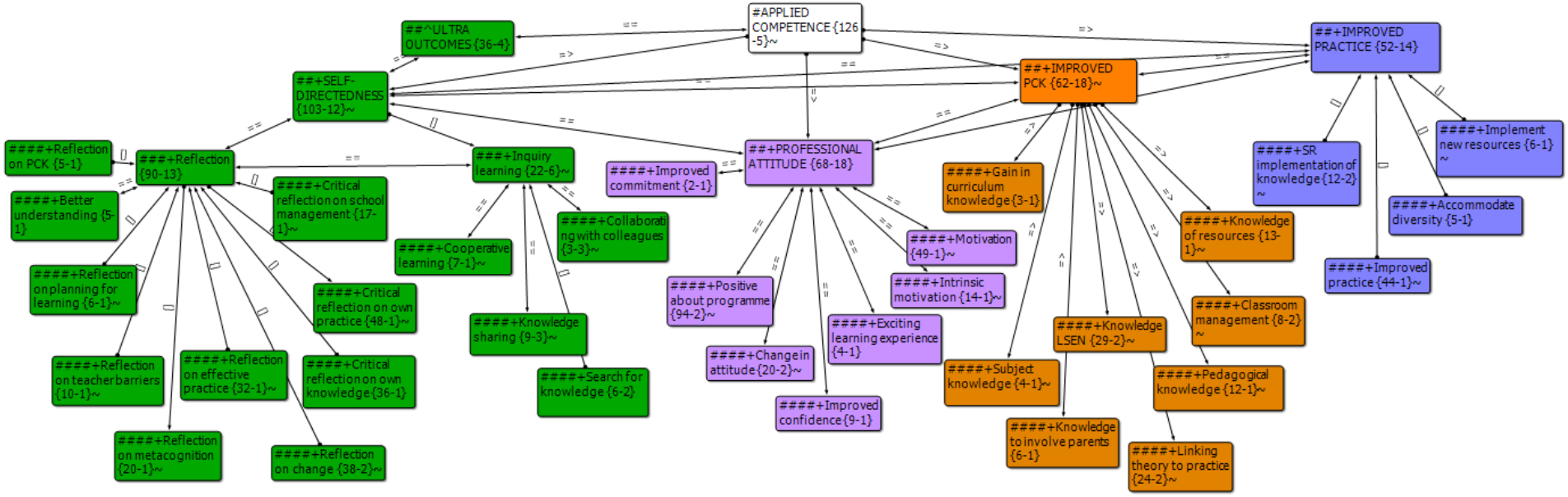

Fig. 5.7: Codes related to the four elements of applied competence as experienced by participants

	SD related codes (requires reflection and/or inquiry)		Practice related codes (application in practice
	Attitude related codes (motivation, commitment)		Knowledge related codes (PCK)

5.4.1 Experiences of the way the programme supported the development of pedagogical content knowledge

The literature confirms that applied competence is grounded in relevant PCK (§3.2.1). Since guided application of theory enhances the probability that teachers will accommodate new PCK as part of their teaching repertoire (Dewey, 2008, p. 70; Shulman, 1987, p. 11), the learning portfolio and accompanying DVD that formed part of the practical component guided teachers in the implementation of theory in practice (§4.2.2; Table 4.1).

Since PCK is grounded in knowledge, all quotations referring to knowledge gained were coded as improved PCK and regarded as an indication that the programme supported applied competence (§3.2.1.3). This knowledge includes subject knowledge and pedagogical knowledge. In cases where participants may have had this knowledge before enrolling for the programme, the programme would have strengthened it by supporting what they already knew. However, where participants commented on aspects hampering the development of PCK, it is highlighted as barriers to the way the programme supported applied competence and needs to be addressed in future DL programme design.

Data collected on the participants' experiences of how the programme supported the development of PCK shows a substantially higher frequency of positive than negative codes. Although the fact that the interviews were conducted by me and that the rapport formed with the participants may have contributed to positive responses, various data sources concur with the quotations supporting the value of the practical component.

Eight categories linked to experiences of PCK as well as typical codes related to each category are summarised in Table 5.17:

Table 5.17: Positive codes related to the development of PCK

CODES (8)	TYPICAL QUOTATIONS
Pedagogical knowledge [12]	Int. Teacher A: *I mean it made me realise that we lose track somewhere when we handle these kids. Especially when they are coming to school for the first time. You just jump on... you want them to learn them to write but ignoring other things*
Subject knowledge [4]	PreQ. T35: *Others are learning I did not know. But know I happy e.g Like helping with reading, writing & many*.
Curriculum knowledge [3]	Int. Teacher A: *So every time something is changing, and then we get again on planning this and next time it's this again, it's a little bit confusing. But with the working portfolio, maybe we can, I can get myself right. Knowing that I have a portfolio, I have a file I mean I can go through all my plans every day.*
Knowledge of resources [13]	Int. Teacher A: *but I didn't know how to start this observations but through this programme I know I have to do a daily report sheet, I have to do an observation sheet.*
Knowledge of classroom management [8]	PostQ. T20*: I know exactly how to deal will different learners, in reading story telling, behavior.*
Knowledge of LSEN [29]	Int.Teacher B: *...die hele kursus het gebaat by my. Want jy het nooit in diepte gekyk na 'n probleem nie, waar jy nou in diepte kan kyk na .. na .. 'n probleem wat 'n kind het.* *[Translation: I benefitted from the whole programme. Because you never looked at a problem in depth where now you look at it in depth… to a problem of a learner]*
How to involve parents [6].	Int. Teacher D: *I even had once a meeting at school and I introduced my meeting for the parents' by saying this to the parents*
Linking theory to practice [24]	Interviewer: Was there any video material that made you think a bit more about practice? Int. Teacher C: *Ja..that one of that special school.. the one about multiple intelligence. That got me quite thinking.*

The network (Fig. 5.8) also shows codes related to a lack of PCK as well as the other categories which represent the elements of applied competence, in recognition of the interrelatedness of the elements.

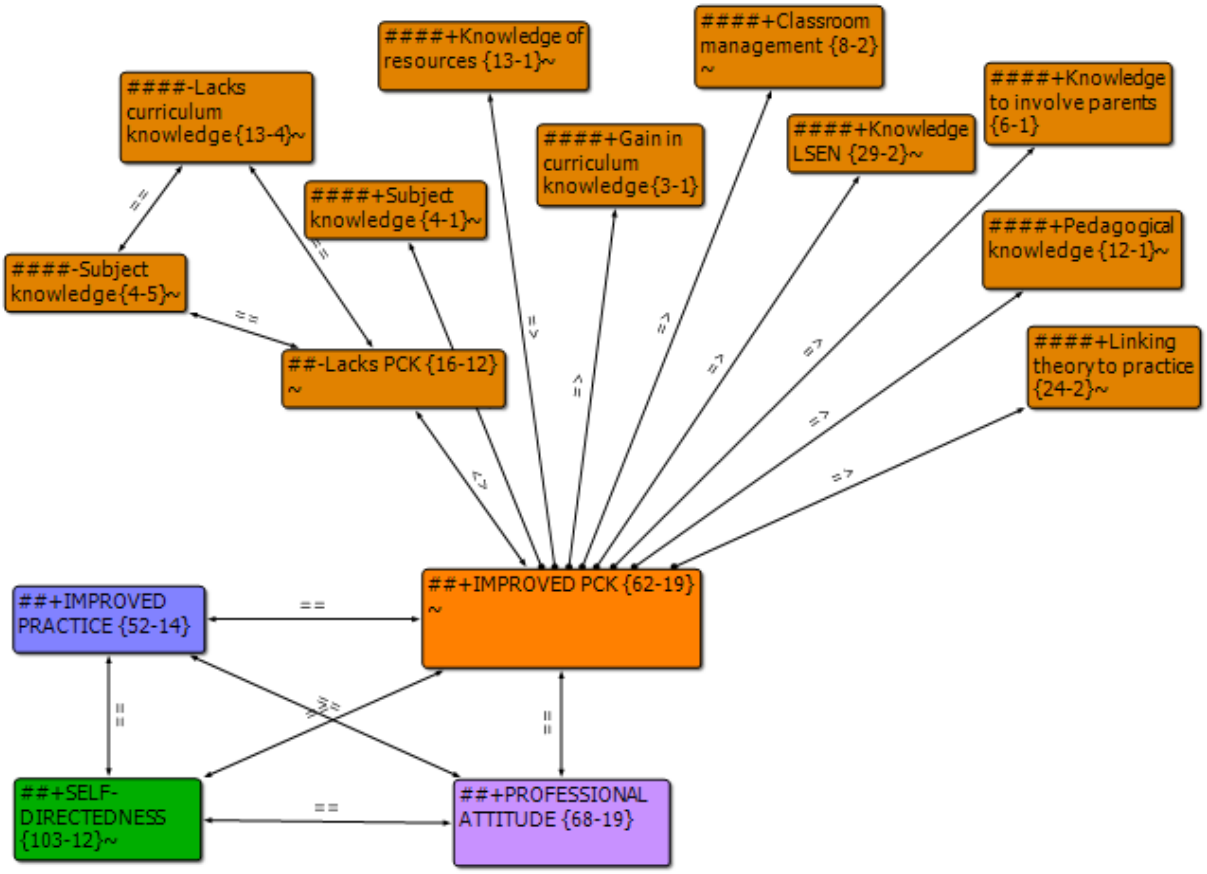

Fig 5.8: Codes related to the development of PCK as experienced by participants

The high quotation frequency for *LSEN* (n=29), and *Linking theory to practice* (n=24), supports the value of the programme. Not only was improving teacher knowledge and skills of LSEN one of the main aims of the bursary project, but it was also identified by the participants as a critical developmental need (§5.2.1; §5.2.2; §5.3). Where participants experienced the programme to address their needs it could motivate them to apply new knowledge in practice. The programme provided substantial theory on all aspects of teaching which included knowledge on LSEN; the high frequency of codes related to ability to *Link theory to practice* may therefore imply that the teachers were able to see the value of theoretical knowledge for practice. This high frequency also strengthens the assumption that the programme contributed to sustained applied competence and that teachers may have recognised the importance of theory for the teaching practice. A relative high code frequency for

Improved pedagogical knowledge (n=12), and for *Knowledge of resources* (n=13), further confirms the value of the practical component of the programme. Improved *Knowledge of classroom management* (n=8), and improved *Knowledge to involve parents* (n=6) also correlate with the learning needs ensuing from the teacher profile (§5.2.1) and the teaching context (§5.2.2). These findings have been triangulated through the quantitative and qualitative data (§5.2.1.2 and §5.2.2.2).

The lower frequency for *Gain in curriculum* knowledge (n=3) and *Subject knowledge* (n=4), may be ascribed to the fact that the interviews were focussed on the practical component. While programme content included ample knowledge on the Foundation Phase subjects (Table 4.1; Study guide – Appendix C) and each teacher received a hard copy of the latest edition of the new curriculum, poor curriculum and subject knowledge after the programme can be ascribed to low SD. These two aspects emerged as the only negative codes related to PCK and are illustrated through typical quotations in Table 5. 18.

Table 5.18: Negative codes related to barriers in the development of PCK

CODES (2)	TYPICAL QUOTATIONS
Lacks curriculum knowledge [13]	Int. Teacher C: *So the CAPS…Ja, we do assessments, but maybe we are not on the right track of assessing.*
Lacks subject knowledge [4]	Int. Teacher A: *I think… in Mathematics I need a lot of help…*

The relative high frequency of quotations related to the code *Lacks curriculum knowledge* (n=13) and *Lacks subject knowledge* (n=4) may also be ascribed to the teachers' frustrations with recent changes in school curricula as demonstrated by the following quotation:

Int. Teacher C: Ek het bietjie gesukkel.. Van die CAPS storie, want ek het nie geverstaan nie wat soek hulle nie

[ET:I struggled a bit… because of the CAPS story, because I did not understand what they wanted]

The frustration with numerous curriculum changes and insufficient support to implement these changes is confirmed in the literature (Lumadi, 2014; South African

Department of Basic Education, 2011a, p. 29) (§3.3.2). The DBE acknowledges the deficient support for teachers to implement previous curricula. The 2007 Systemic Evaluation indicated that 40% of the Grade 3 teachers who received in-service training complained that the training was overly concentrated on the theory of the new curriculum, as opposed to practical ways of implementing the curriculum (South African Department of Basic Education, 2011a, p. 108). In 2012 the CAPS was implemented in the Foundation Phase (Gr. 1 – 3) and teachers attended compulsory workshops presented by the various provincial Departments of Education during this time, aiming to guide teachers in the implementation of the revised curriculum and assessment policies (CAPS). Teachers enrolled for this bursary project received a copy of the new curriculum and assessment statement (CAPS) as part to the study material and compiling the learning-portfolio required of teachers to base their teaching and learning on the CAPS. It is clear from the participant responses that the new curriculum was still experienced as a huge challenge. Bongani Simelani of the KwaZulu-Natal Department of Education (South African Council for Educators (SACE), 2013, p. 4) expresses his concern whether merely providing orientation was enough to help teachers in truly grasping the substance of CAPS practice, without supplementary workshops. This view strengthens the surmise that a more practice based approach may be necessary to equip teachers with the necessary skills to effectively implement a new knowledge in practice.

In the PostQ, the participants had to indicate which component of the programme (i.e. the first theoretical year or the second practice-based year) supported the development of their PCK most. Of the 48 participants who completed this questionnaire, 11 (n=11) indicated the first year while 24 (n=24) felt that the second year supported their PCK most which is an indication of the value of the practical component in supporting applied competence.

Based on the literature (§3,3) (Biggs, 1989, p. 8; Biggs & Tang, 2007, pp. 26-29; Chalmers, 2007, p. 88; Hamilton & Tee, 2013 p. 11) it can be argued that barriers related to the teacher profile (§5.2.1) and teaching context (§5.2.2), play a determining role in the development of PCK and consequently in sustainable applied competence. Although suggestions are made for ways to improve future DL

programme design (§6.6), further research will be necessary to determine how to best support the development of PCK in a DL programme.

5.4.2 Experiences of the way the programme supported the development of self-directedness

In this study quotations and codes related to *Improved SD* are viewed as an indication that the programme supported SDL and consequently also applied competence. Both positive and negative codes related to the way the programme supported the development of reflection and inquiry as SD skills have been identified. However, the network in Fig. 5.9 only indicates the positive codes and related categories. A more comprehensive network with negative codes can be viewed in Appendix D.

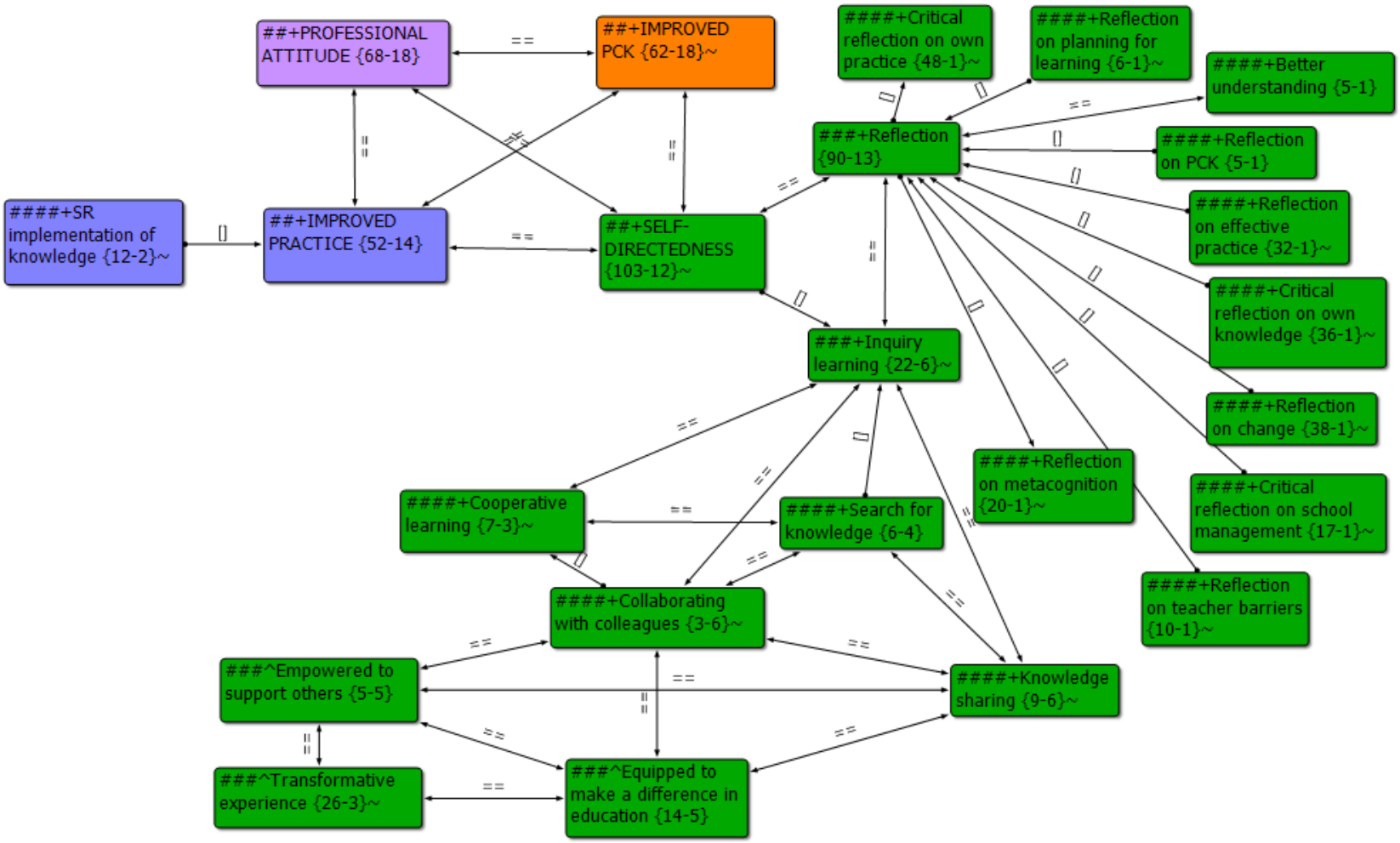

Fig. 5.9: Network of codes related to the way participants experience the programme to support the development of self-directed skills namely reflection and inquiry

The role of SD in supporting improved and sustainable applied competence necessitates the inclusion of codes related to sustainable applied competence. Quotations referring to the programme as a *Transformative experience* (n=26), the way the programme *Empowered to support others* such as colleagues and learners (n=5), and how the programme *Equipped to make a difference in education* (n=14), are viewed as *ultra-outcomes* strengthening the possibility of sustainable outcomes in practice. The other three categories related to applied competence are also included in the network to represent the omnipresence of all these elements in the teacher education process.

Although SD involves various competencies, *Reflection* and *Inquiry* were identified as two core competencies to be developed in order to support applied competence as outcome of a DL programme (§3.2.2).

5.4.2.1 Experiences of the way the programme supported the development of reflection

Ten codes related to reflection are summarised in Table 5.19 while the three ultra-codes, viewed as the outcome of self-directed practice, are also included. Examples of negative codes related to a lack of reflection after the programme, are listed although not indicated in this network (Fig. 5.9).

Table 5.19: Codes related to reflective learning and the development of a reflective practice as experienced by the participants

CODES [10]	TYPICAL QUOTATIONS
+REFLECTION [90]	
Reflection on planning for learning [6]	PostQ. T22: *I feel more confident with my planning and designing my own learning and teaching aids.*
Reflection on change [38]	PostQ. T27: *Baie effektief. Help om 'n beter onderwyser in die klas opset te wees, verbreed jou kennis. [ET: (the programme is) Very effective. Helps to be a better teacher in the class, expands your knowledge.]*
Reflection on effective practice [32]	Int. Teacher C: *Die wiskunde lessie... toe ons dit nou daar sien - dit het jou so excited gemaak... dat die volgende dag het ons so probeer en toe kon jy sien dat die kinders vind baat by dit. [ET: The mathematics lesson.. when we saw it there - [on the DVD] it made you so excited that the following day we tried it and you could see that the children benefit by it.]*
Reflection on metacognition [20]	Int. Teacher D: *I need a lot of knowledge … I have to do research… and have to sit down, this step has really brought me back. I'm really saying… I'm born a teacher.*
Reflection on PCK [5]	Int. Teacher D: *Since now I have been able to define learners... the problem is the children can't read, so that you have to start with the sounds.*
Reflection on teacher barriers [10]	Int. Teacher A: *I think we have a problem among us and we have a problem of just…mmm… planning together. I think we are afraid of each other….* Int. Teacher D: *That mat there.. You know.. our classes are really not impressive… not conducive….*
Critical reflection on own knowledge [36]	Int. Teacher D: *The knowledge….They've helped me because as I've said, you work with different kinds of learners with different kinds of problems. So I didn't know how to implement, maybe a child is struggling with writing or… when I went through this I thought… ooh.. I could have done this*
Critical reflection on own practice [48]	Int. Teacher D: *How to deal with such learners... because some teachers… we don't have patience of the learners so we need a lot of encouragement you know... development just to enhance this.*
Critical reflection on school management [17]	Int. Teacher A: *Most of the children are six years old… and another not yet six. And you find that they struggle in class because we do not have a policy. We can't say we deny the children from coming to school.*
Better understanding [5]	PostQ. Teacher 11: *It helped me a lot to understand that learners are equal not matter what*
ULTRA-OUTCOMES [3]	
Transformative experience [26]	Int. Teacher A: *it was a challenge but it was… eye-opening… it was eye-opening…*
Empowered to support others [5]	Int. Teacher A: *Yes! and it helped me that part because I had to help other teachers even in the Grade R class.. they were struggling with making their own big books.*
Equipped to make a difference in education [14]	PostQ. T20: *This programme is more effective and it really indeed equipped me with more skills special in teaching and learning.*
- NEGATIVE CODES [3]	
Lacks critical reflective skills [10]	Int. Teacher B: *Daar is nie eintlik iets wat ek nou kon verander het nie. [ET: There is nothing that I could change (about my practice as a result of the programme)]*
Lacks planning skills [9]	Int. Teacher A: *Mmmm… You know I always struggle with planning the Mathematics, just want to be honest with you.*
Lacks SR [26]	Int. Teacher D: *Planning for a lesson… I didn't start….[this task]*

Reflection on planning for learning (n=6) implies a reflective approach to the teaching process. Since reflective planning for learning is a prerequisite for effective education and applied competence, the reasons for the lower frequency of quotations linked to meaningful planning should be investigated, and ways found to guide teachers in this respect.

Reflection on change in practice as a result of the programme could be linked to 38 quotations (n=38). This is closely related to quotations describing the programme as a *Transformative experience* (n=26), a code linked to quotations expressing the view that the programme made a significant impact on the way teachers approach teaching. Although the sustainability of improved practice cannot be guaranteed without relevant motivation and commitment (§3.3), these quotations support the value of the programme in initiating a change in applied competence.

Reflection on effective practice was linked to 32 quotations (n=32). Since the DVD included visuals of effective practice to support reflection in this regard, the quotations also referred to the way the visuals gave teachers a new outlook on teaching:

Int.Teacher D: Yes the graph.. and everything was so colourful and the children knew how to go about, and you know… discipline… a lot of discipline.. you have to implement also discipline. And if the children see the environment of the class is conducive they learn more easily and everything is there…. there in the corner… and the classroom arrangement and the mat as well … I liked the mat there.. it gave really a good impression. You know.. our classes are really not impressive… not conducive….

According Loughran and Corrigan (1995) the portfolio process supports metacognition by guiding student-teachers to question their own learning (§3.4.4.3). Where participants reflected on their own learning and on ways to expand their knowledge in order to solve problems which they may encounter in their daily practice, it is regarded as a way the programme contributes to applied competence. Although *Reflection on metacognition* also forms part of *Reflection on own PCK* (n=5), 20 quotations (n=20) specifically referred to reflections on how the teachers go about learning, or on how they should learn in order to improve their practice. These

quotations included reflections on the need for improved cooperative learning, research, time management, and improved self-regulation during the programme.

Mere reflection does not guarantee improved applied competence (Zeichner & Wray, 2001, p. 619). *Critical reflection* by teachers on knowledge and practice and considering alternative practices, is viewed as the first step towards change and improved practice. The interrelatedness between *Critical reflection* (as part of *SD*) and improved practice is highlighted by the inclusion of the code *SR implementation of knowledge* (as part of *Applied practice)* in the network (Fig. 5.9). Informed implementation of knowledge in practice after critical evaluation of the meaningfulness thereof will greatly contribute towards applied competence. A differentiation is made between quotations indicating mere reflection and those that may imply a *Critical evaluation of own knowledge* and practice. Such a critical stance towards own knowledge could be linked to 36 quotations (n=36) while 48 quotations (n=48) indicate a *critical reflection on own practice*. Since these competences are interlinked, critical reflection on knowledge and practice often refer to both knowledge and practice as is clearly illustrated by Teacher D in the interview (Table 5.19):

Int. Teacher D: I need a lot of knowledge … I have to do research… and have to sit down, this step has really brought me back. I'm really saying… I'm born a teacher.

Critical reflection on school management could be linked to 17 quotations (n=17). Improved education includes improved school management and teachers need to reflect on ineffective management in order to change the status quo in cases where poor management may hamper teaching and learning (Bush et al., 2011, p. 31) (§3.3.2). The portfolio tasks required that teachers include school policies while the interview schedule included questions on the meaningfulness of their school policies. This may have contributed to the participants' reflections on school management. Various quotations coded under the category *Teaching context* referred to a lack of support from school management (§5.2.2.2) which confirms that there is room for improvement in this regard.

Quotations further indicated a lack of SD including *Lack of critical reflective skills* (n=10), *Lack of planning skill*s (n=9), and *Lack of SR* (n=26). The high frequency for a lack of SR indicates a need for support in developing SR through implementing

greater autonomy. In a DL programme the support of other stakeholders such as the DoE and the school management are important to successfully guide teachers to a more self-regulated approach to practice.

Reflection on deficiencies in practice is a prerequisite for the development of an inquiry approach to teaching.

5.4.2.2 Experiences of the way the programme supported the development of an inquiry approach to teaching

The capacity to find knowledge and to build a knowledge base navigates teachers' actions (Darling-Hammond & Snyder, 2000, p. 529). Only six quotations (n=6) were linked to a *Search for knowledge,* and the quotations mostly refer to the study material as a useful source of knowledge (Table 5.20). The teachers' abilities to find answers for teaching including subject content and pedagogical matters, play a critical role in self-directedness and consequently also in applied competence (§3.2.2.2). Reasons for the relative low frequency of these responses should be investigated to support inquiry-based teaching. However, searching for knowledge in order to build a knowledge base also entails cooperative learning, collaboration with colleagues, and sharing of knowledge.

Knowledge sharing is classified as related to the development of inquiry based practice where social learning is implemented to share and gain knowledge (Ash & Clayton, 2009, p. 31). Teachers value their own knowledge as worth sharing after critical reflection and evaluation of their own knowledge (Shulman and Shulman, 2004) (§3.2.2.1). The desire to share knowledge is often based on the experience of success. Since nine quotations (n=9) refer to the way the programme equipped them to *Share knowledge* with colleagues or the community, it may be an indication that they mastered new knowledge worth sharing, which is confirmed by their quotations (Table 5.20). This competence is closely related to the self-efficacy belief that they are *Empowered to support others* (n=5) and *Equipped to make a difference* in education (n=14), both of which are viewed as ultra-outcomes with a high potential to support sustainable applied competence (Table 5.19 and Fig. 5.9). Three quotations (n=3) refer to *Collaboration with colleagues* and seven (n=7) to *Cooperative learning*. Anticipation of this support was also expressed by six quotations (n=6) in the PreQ

(§5.3.2). Although portfolio tasks required of teachers to share knowledge in group tasks, the participants commented on the barriers caused by distances between teachers which may be a reason for the lower frequency of quotations related to this aspect:

Int. Teacher C: No it is not easy (to work in groups) but we are scattered and most of the a…a... the colleagues that I was with.. they are staying in Pampierstad. Ja. So usually we will communicate over the phone for a certain assignment when we don't understand that. But when… if they were here then it would have been better.

Table 5.20: Codes related to inquiry learning and the development of an inquiry based practice

CODES	TYPICAL QUOTATIONS
Search for knowledge [6]	Int. Teacher D: *You know I went back to my books as well, as I have done management I really saw this as part of my research.*
Collaboration with colleagues [3]	PostQ. T22: *I was able to discuss problems with colleagues* Int. Teacher C: *So usually we will communicate over the phone for a certain assignment when we don't understand that*.
Knowledge sharing [9]	Int. Teacher D: *And you must also implement this. Everything must be in transparency, you see. You must also teach the community about their rights and to how to work with educators and parents.* PostQ. T9: *I persevered because it brought light not only to me, but to my learners, colleagues and staff.* Int. Teacher A: *Sharing this information is going to make a difference in our school. It's very valuable information.* PostQ. T9: *I became closer to my learners and some of the parents, was able to discuss problems with colleagues and parents and given assistance from my school.*
Cooperative learning [7]	Int. Teacher A: *Ja, it was going to be easier but with the programme, you know….sometimes you just introduce the format of the lesson plan, somebody might like… one of the teacher might like it or might review it and change it there and there, but without anybody looking at it, you might go anywhere… you might lose track…*

Although no quotations could be linked to a lack of support for the development of inquiry-based practice, some quotations exposed an attitude of dependence which may be indicative of a lack of inquiry-based practice:

Int. Teacher A: Like maybe if I have to teach in FAL, I have to do puppets, you are the only one … you are supposed to do them… but we don't have any resources.

Int. Teacher D: Give us more concrete material, as we don't have materials. Like I said we've got financial constraints but if you just teach without concrete things you are doing nothing for a child 'cause she or he will never have an understanding of what you are doing…

Since commitment to improved practice plays a critical role in motivating both reflection and inquiry, DL programmes should employ methods to support the development of inquiry-based practice and also motivate teachers to collaborate with colleagues in finding innovative ways to overcome obstacles.

Summary of experiences with regards to the way the programme supports self-directedness

The participant responses provided sufficient evidence of the value of the practical component in supporting self-directedness and subsequently other related elements of applied competence. The high frequency of quotations related to reflection and critical reflection supports the notion that a practical component may contribute to sustainable improved practice. Negative codes emerging from the data, especially with regards to poor SR, requires more support for the development of these critical skills to ensure applied competence. The interrelatedness of self-directed skills in supporting all the elements of applied practice and sustained applied competence is clearly illustrated in Fig. 5.9. The low frequency of codes related to inquiry learning thus calls for support for a more inquiry-based approach towards own learning as well as to teaching practice in a DL programme.

5.4.3 Experiences of the way the programme supported the development of a professional attitude

The critical role played by professional attitude in all that happens in the classroom (Opfer & Pedder, 2011, p. 387), requires that this element of applied competence be recognised with regards to all the other elements of applied competence. Fig. 5.10 illustrates the network of positive as well as negative codes related to *professional attitude*.

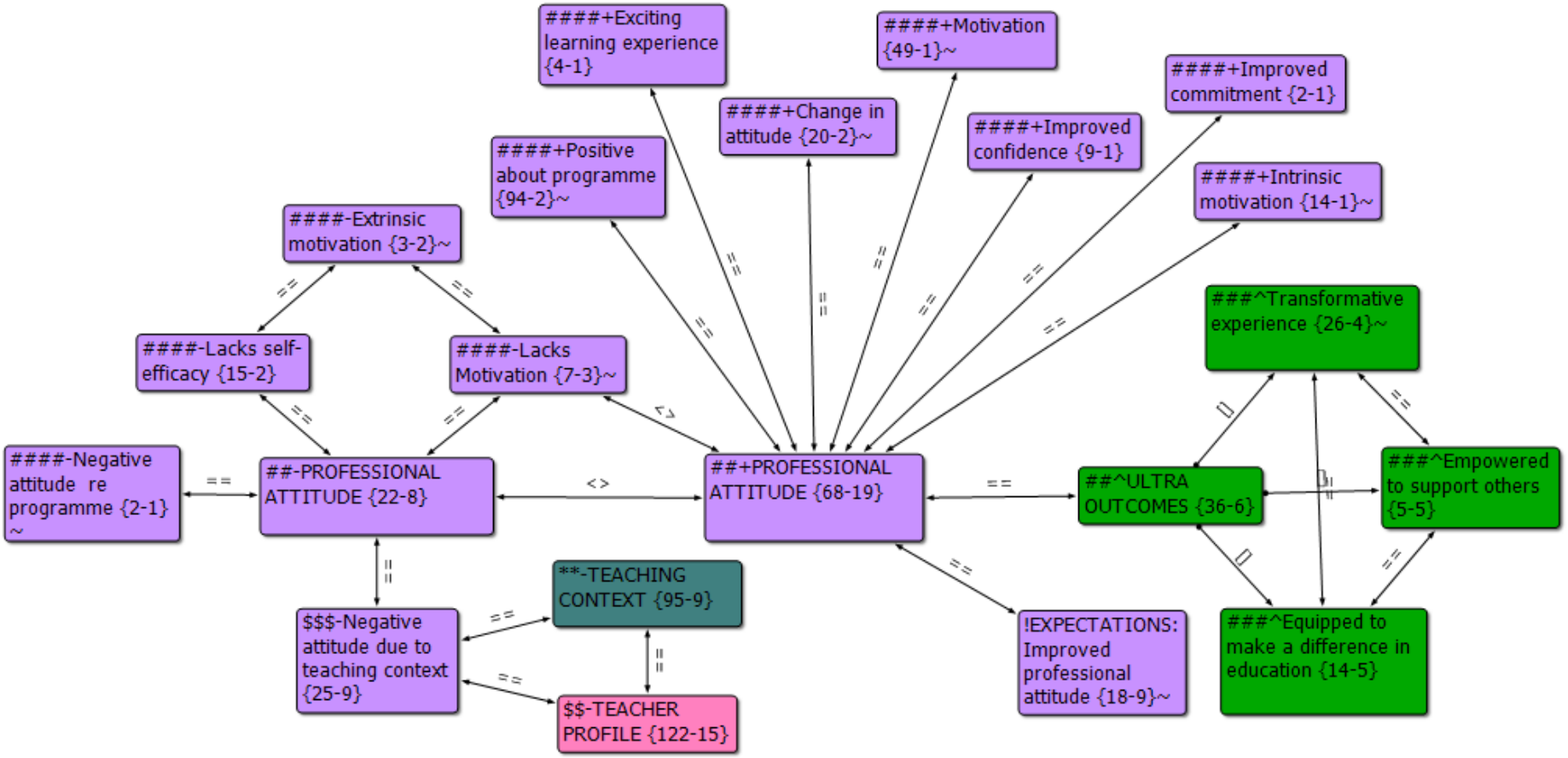

Fig. 5.10: Network of codes related to the way participants experience the programme to support the development of a professional attitude

Seven codes and 68 quotations (n=68) represented a positive attitude (*+Professional attitude*) while the contradicting negative code (*-Professional attitude),* was linked to four codes and 22 quotations (n=22). The higher positive code frequency is an indication of the value of the programme in supporting a professional attitude while the logical link between *+Professional attitude* and *Ultra-outcomes* accentuates the important role of this element in sustained applied competence as programme outcome. The *Teacher profile* (§5.2.1), teaching context (§5.2.2), and *Teacher expectations* of the development of a professional attitude prior to the programme (§5.3.3) may influence the way participants experience a programme to support their applied competence. The high frequency of codes related to a *Negative attitude due to their teaching context* (n=25) as part of the teacher profile (§5.2.1), together with the codes related to unfavourable teaching context (§5.2.2), should be acknowledged by the programme design and delivery since teachers may feel even more overwhelmed by the programme if they are not coping with a heavy workload, large teacher-learner ratios, and many LSEN. Table 5.21 lists the codes and typical quotations related to the participants' experiences of the way the programme supported their professional attitudes.

Table 5.21: Experiences of the way the programme supported the development of a professional attitude

CODES [7]	TYPICAL QUOTATIONS
+Professional attitude [68]	
+Change in attitude [20]	PostQ. T33: *Last time when I did ACE literacy I was phumbling. Now I am not scarred at all.* PostQ. T1: *The portfolio has open my eyes and now I can look at my learners with learning barriers with positive attitude […] Prior this programme I was very much frustrated I even put them aside cause I just didn't have the knowledge and tip of dealing with them. Thank you very much!*
+Exciting learning experience [4]	PostQ. T. 13: *This was an amazing experience course in my life it makes me appreciate and care for learners with disabilities and make me realise the importance and to accommodate them as a teacher.*
+Improved commitment [2]	Int. Teacher A: *So every time something is changing, and then we get again on planning this and next time it's this again, it's a little bit confusing. But with the working portfolio, maybe we can, I can get myself right. Knowing that I have a portfolio, I have a file I mean I can go through all my plans every day.*

CODES [7]	TYPICAL QUOTATIONS
+Improved confidence [9]	PostQ. T22: *I feel more confident with my planning and designing my own learning and teaching aids. I also feel confident with helping children with learning disabilities. The programme helped me a lot and it encouraged me to study further. It was interesting and it build me a lot as an educator.*
+Intrinsic motivation [14]	PostQ. T 2: *The programme helped me a lot and it encouraged me to study further.* Int. Teacher D: *Even in my environment I contributed a lot by assisting. Some of my parents that really need me so I really am proud of being part of this course because it has contributed a lot….for me as an educator.*
+Motivation [49]	PostQ. T 12: *For me attending this course was of great help and I do appreciate the support and motivation that we have received from you. You motivate us never to stop.*
+Positive about programme [94]	PostQ. T33: *I am so pleased that I did this course to me it has been the eye opener.*
Negative codes	
- Professional attitude [22]	
-Extrinsic motivation [3]	Int. Teacher B: *Ja... ons móét... ons móét... want as jy nie klaarmaak nie moet jy mos die geld terugbetaal.. [ET: Yes we must (complete the course) because if you don't you have to pay back the money]*
-Lacks self-efficacy [15]	Int. Teacher A: *…you know I just keep quiet because I think I am… I am… maybe I'm stupid … And they would say maybe I have a problem. Why do I have more than three groups in my class? Others have only three.*
-Lacks Motivation [7]	PostQ. T30: *Attitude will not change, because we are frustrated about the changes, each time we get new minister of education, the things change…*
-Negative attitude re programme [2]	PostQ. T 16: *Its [contact sessions] on a weekend, too much to do, no free time. School takes too much personal time.*

Apart from complaints about the education system (PostQ.T30, Table 5.21), and requests for administrative support, the participants mostly demonstrated a positive attitude towards the programme (n=94). A positive experience is an important indicator of possible sustained outcomes of the programme in practice (Oolbekkink-Marchand et al., 2006, p. 219) (§3.2.3). Where teachers regard the programme as relevant for their specific teaching contexts and are convinced of the value for their practice, they will be more motivated to apply new knowledge. The high code frequency related to *Motivation* (n=49) further accentuates the positive impact of the programme on teacher attitudes towards teaching practice. Since fourteen quotations were linked to expressions with regards to *Intrinsic motivation* (n=14), this may strengthen the possibility of application of new knowledge in practice. Where teachers are not merely focused on acquiring a qualification but are intrinsically

motivated to make a change in their classrooms as a result of the programme (refer Int. Teacher D in Table 5.21), it may reinforce the value of the programme in supporting applied competence as programme outcome. Viewed in light of the low morale of teachers – not only in South Africa but also internationally (§2.4), a change in attitude as a result of a DL programme could be viewed as a major contribution in turning around current poor education standards. Since 20 quotations (n=20) were linked to a *Change in attitude*, nine (n=9) quotations are related to *Improved confidence,* and two quotations (n=2) expressed *Improved commitment*, it can be concluded that the programme has value for the development of professional attitude.

Barriers that may hamper the development of professional attitude include *Extrinsic motivation* (3), a *Lack of self-efficacy* (n=15), and a *Lack of motivation* (n=7). Extrinsic motivators include mere aim to complete the qualification, fear of having to refund study fees to the DoE, anticipation of a higher salary, and recognition by family and peers after the programme, as expressed in the following quotation:

FGr. T10: *I know this is how many of us and I was like that - upgrade myself for the qualifications - more money at the end of the day and that's it.*

Although not all extrinsic motivators can be regarded as negative, self-directed teachers strive to serve the practice and not only their own desires or the prescriptions of the education system (Shulman, 1987, p. 20). Although negative attitudes emerging from the data is considerably lower than quotations of positive propensity towards the teaching profession, factors that may hamper the development of a professional attitude and ways to address these barriers need to be researched.

5.4.4 Experiences of the way the programme supported the development of applied practice

The study did not evaluate evidence of applied practice as programme outcome but set out to determine the participants' experiences of the way the programme supported them to improve their practice by implementing new knowledge and skills. However, mere implementation of knowledge will not guarantee applied competence.

The way a programme guides and motivates reflection on PCK, effective practice, critical reflection on own current practice, and how to change ineffective teaching practice play a decisive role in the way programme content is implemented in practice (§3.2 and Fig. 3.1). Teacher motivation and commitment as part of professional attitude determine *if* and *how* knowledge will be applied to improve practice. Fig. 5.11 illustrates the codes related to participant experiences of the way the programme supports applied practice, but also includes these interrelated categories. Although not shown in the network, the influence of the teacher profile (§5.2.1) and teaching contexts (§5.2.1) on the way teachers apply new knowledge, is acknowledged.

5.4.4.1 Positive codes related to experiences of applied practice

The network of codes related to applied practice (Fig. 5.11) clearly demonstrates the various factors that play a role in the effective implementation of knowledge in practice as programme outcome. Although multiple links between all the codes would have been a truer reflection of the interrelatedness between all the elements, only the principal codes and links are indicated for a meaningful illustration. Codes belonging to the other categories but which are related to applied practice are also indicated.

The role of *improved PCK, SD,* and the development of a *professional attitude in improved applied practice* is obvious since a change in practice is initiated by *reflection on PCK,* and sustained by motivation and commitment.

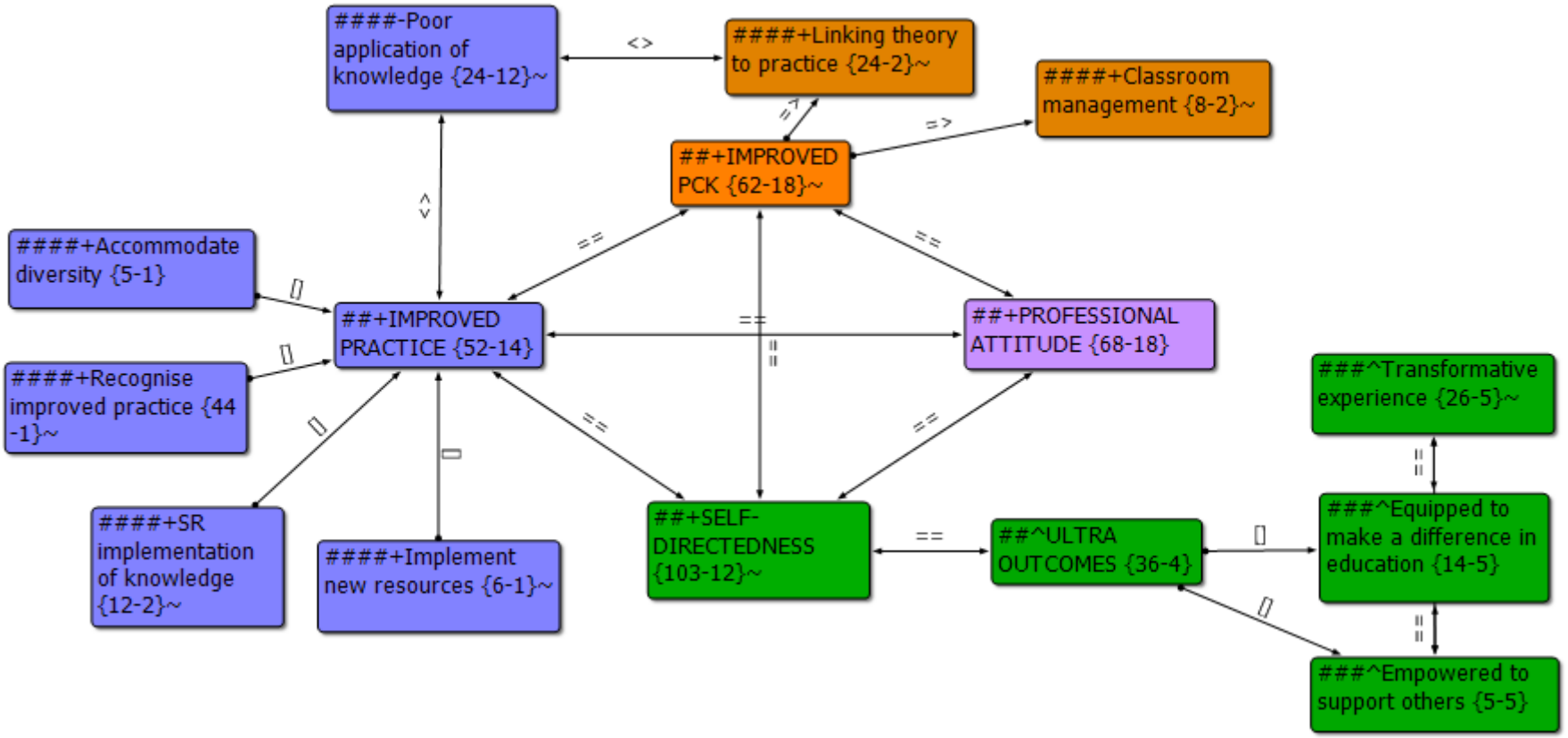

Fig 5.11: Participants' experiences of the way the programme supported their applied practice

Fifty-two codes (n=52) were linked to quotations which strengthen the notion that the programme supported applied practice, while 24 codes (n=24) were linked to quotations indicating an inability to apply new knowledge in practice after completion of the programme. Possible reasons for this contradiction is discussed in §5.4.4.2. Table 5.22 shows examples of quotations for the codes related to applied practice:

Table 5.22: Experiences of the way the programme supported the development of applied practice

CODES (4)	TYPICAL QUOTATIONS
Accommodate diversity [5]	PostQ. T23: *I know exactly how to deal will different learners*
Recognise improved practice [44]	PostQ. T27: *Baie effektief. Help om 'n beter onderwyser in die klas opset te wees - verbreed jou kennis. [ET: Very effective. Helps to be a better teacher in the classroom setup – expands your knowledge.]*
Implement new resources [6]	PostQ. T22: *I feel more confident with my planning and designing my own learning and teaching aids.*
SR implementation of knowledge [12]	Int. Teacher D: *I have gained that strength to go back to a class and say… let me implement this. And let me have patience with this children. And what I did, I will never let it go down the drain. Let me use it.* PostQ. T9: *I was able to discuss problems with colleagues and parents and given assistance from my school. I realised that I have the passion and love for teaching at heart.*

Forty-four (n=44) quotations indicated that participants *Recognise improved practice* as a result of the programme, 12 quotations (n=12) acknowledged that the programme supported *SR implementation of knowledge* in practice, and six (n=6) positively commented on support by the programme to *Implement new resources*. *Improved practice* embraces many aspects of practice which contributed to this high code frequency. The low frequency for implementation of new resources is reflected in the evaluation of the learning portfolio (§5.5). Since the programme included various examples of resources in hard copy as well as on the DVD, and also provided suggestions for cost effective resources the reason for the low frequency of codes related to implementation of resources, should be investigated.

Only five (n=5) quotations could be linked to expressions indicating that the teachers now feel better equipped to accommodate diversity. As diversity includes learners with LSEN, the lower frequency in this domain contradicts the relative high frequency of codes linked to *Knowledge gained* of LSEN as part of PCK (§5.4.1; Fig. 5.8). However the low frequency concurs with the data collected on their learning needs as well as on their expectations of the programme which indicated a general low confidence in their own ability to support LSEN (§5.2.1.2 and §5.3) and may indicate a need for further support in the implementation of new knowledge on LSEN.

Apart from the strong relation with categories such as a *Professional attitude* (n=68), *SD* (n=103) and *Improved PCK* (n=62), *Improved practice* is strongly associated with sustainable applied competence (§3.3) which the literature confirms strengthens the possibility for change in teacher behaviour (Dondi & Moretti, 2002, p. 366; Erkilic, 2008) (§3.4.3).

The twenty-four quotations (n=24) which are positively connected to the way the programme enabled participants to *Link theory to practice* as part of the category *PCK* (Fig. 5.11), strengthens the assumption that the programme supports applied practice grounded in theory and thereby contributes to applied competence. However, PCK provided as part of the study material can only make a difference in practice if teachers are guided to apply this knowledge in practice (§3.2.1.3), and are motivated to apply new knowledge in a reflective way (§3.2.2.1). Since improved professional attitude is also critical for sustained application of new knowledge in practice (§3.2.3), the codes improved *Professional attitude* experienced by the participants (§5.4.3 and Fig. 5.10), could be a strong indication that the programme did support applied practice by providing relevant PCK, the development of an improved professional attitude, and self-directedness.

The relative high negative code frequency related to a lack of support for *Applied practice* required a more detailed analysis of the negative codes that may have contributed to these negative experiences.

5.4.4.2 Negative codes related to the development of applied practice

Thirty-three quotations (n=33) referred to a lack of *Applied practice* of which twenty-four quotations (n=24) are linked to the code *poor application of knowledge* in

practice. This relative high code density may indicate barriers in the way the participants are able to apply theory in practice as intended by the programme. Poor outcomes in practice after programme implementation have implications for the practice-based nature of Foundation Phase teaching. A network illustrating all negative codes related to the various themes that could possibly contribute to poor applied practice is illustrated in Fig. 5.12. This network also shows the contradicting code *+Applied practice*, showing that, in spite of a high frequency for a lack of support for applied practice, 52 codes were linked to positive codes indicating that participants experienced the programme to have supported the application of knowledge in practice (§5.4.4.1).

Fig. 5.12: Negative codes contributing to a lack of support for applied practice

The negative codes linked to quotations which demonstrate a need for more guided application of theory in practice, are listed in Table 5.23. This table also includes quotations related to barriers experienced with regards to the *programme design* as well as aspects related to the *teacher profile* which may hamper applied practice to provide insight into the barriers to applied competence in practice as programme

outcome. Negative codes that have been included in previous sections are not included in Table 5.23 but are recognised in the network (Fig. 5.12).

Table 5.23: Codes related to various categories that could contribute to a lack of application of knowledge in practice

CODES	TYPICAL QUOTATIONS
###-Lacks PCK [16]	Int. Teacher C: *So the CAPS…Ja, we do assessments, but maybe we are not on the right track of assessing*. Int. Teacher D: *If you could maybe supply us with or teach us how to use the apparatus… concrete… real things. Sometimes you've got the things here and you don't know how to go about with those concrete things. How to handle the situation in the classroom.*
###-Lacks professional attitude [7]	PostQ. T19: *New students seek for prior students assignments and it will prevent new ones from learning what needs to be learned.*
####-Lacks SR [26]	Int. Teacher A: *Like maybe if I have to teach in FAL, I have to do puppets, you are the only one … you are supposed to do them… but we don't have any resources* Int. Teacher C: [Interviewer: you didn't put the topic there? [in your planning]*: I forgot maybe... because all I was talking about is water... water… water.*
####-No sustained outcomes [10]	Int. Teacher A: [Interviewer: Which video clips made an impression on you?] *Oo I am forgetting some of the things. It's been a long time.*
####-Subject knowledge [4]	Int. Teacher A: *You know I always struggle with planning the Mathematics*
$$$-Negative attitude due to teaching context [25]	Int. Teacher C: *You know if wishes were horses we could all wish for those… but schools in our situations…*
$$$-SD: Unable to apply theory [12]	Int. Teacher D: *I didn't know how to implement, maybe a child is struggling with writing or… when I went through this I thought… ooh!.. I could have done this because I had a child who have got visual problems [..] Some of the activities that I've got from this and I will now implement them in my class.*
@@-Programme design [24]	Int. Teacher A: [I: *Do* you think you would need some extra support?] *Ja … no practical…..I need support very much.*

The interrelated influences on applied practice by aspects coded under the identified categories are clear from Fig. 5.12. The quotations related to the codes *Lacks PCK* (n=16), *Lacks subject knowledge* (n=4), and specifically *Lacks SD* (n=21) and *Lacks*

SR (n=26) after completion of the programme, raise concerns for programme design and delivery. Since a lack of SD was also identified as a deficiency related to the teacher profile (n=66), the specific dispositions of the target population should be investigated for ways to accommodate teacher profile (§5.2.1) and teaching contexts (§5.2.2). The 24 quotations (n=24) which state a need for more support to apply theory in practice may call for more innovative teacher support mechanisms, especially where codes related to teacher profile show a *Lack of self-directed application of theory* (n=12), and a *Negative attitude due to teaching context* (n=25). These personal and situated factors are confirmed by the quantitative data (§5.2.1 and §5.2.2). Since all the quotations in the table were collected after completion of the programme, the aspects represented by these codes may hamper sustained outcomes in practice. DL programme design and delivery should therefore include design features to guide the application of new knowledge in practice as suggested in Chapter 6 (§6.4 2).

The majority of the participants indicated in the PostQ that they attend contact sessions (n=32), and 18 participants (n=18) requested support from the lecturers more than four times during the programme implementation (Table 5.24). While contact sessions may provide opportunities for knowledge transfer, more practice-based support may be required to support application of knowledge in practice.

Table 5.24: Attendance of contact sessions and support requested from lecturers

Attended contact sessions?	Yes n=32	No n=1		
How many times did you request support from academic lecturers of the NWU?	7 to 10 times 6	4 to 6 times 12	1 to 3 times 15	Not at all 2

5.4.4.3 Comparing teacher expectations with their experiences with regards to the programme

A programme that lives up to teachers' expectations will not only improve teacher commitment but will serve as motivation to apply new knowledge and skills in a sustained way in practice (§3.2.3). Opfer and Pedder (2011, pp. 388-389) accentuate that the dissonance between personal expectations and teachers' sense of efficacy may open up the possibility for teacher learning to occur and serve as motivation for teachers to learn. However, these authors caution that, when the dissonance among beliefs, practices, knowledge, and experience is too large, teachers may dismiss new ideas as inappropriate to their situations. Therefore the intensity of the dissonance between expectations and experiences matters.

A network compiled trough ATLASti™ comparing codes related to !Expectations for the way the programme will support elements of applied competence (§5.3) with participants' #Experiences of the way the programme supported these elements (§5.4) is illustrated in Fig. 5.13:

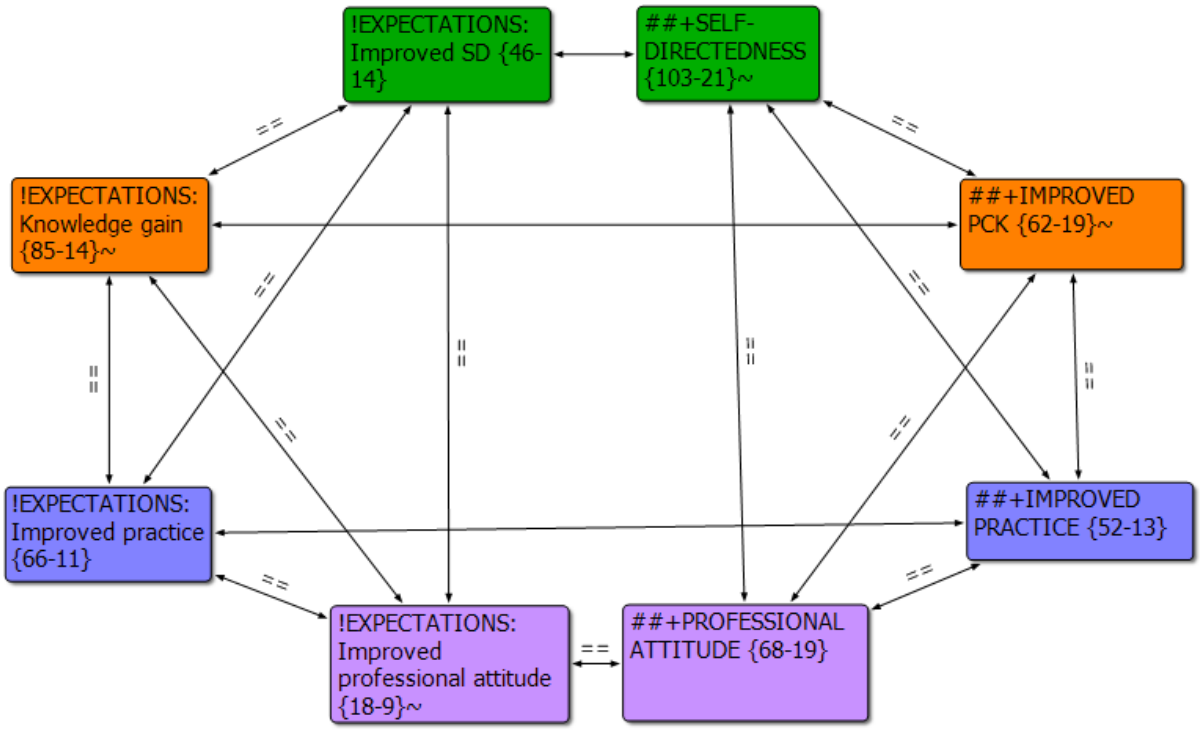

Fig. 5.13: Comparing teachers' expectations and experiences with regards to the practical component

Although code frequencies related to experiences (#) of *Improved practice* and *Improved knowledge* are slightly lower than the correlating expectations (!) for these competences, the network indicates a relative strong correlation between expectations and experiences with regards to these elements of applied competence. However, there is a significant difference between *Expectations: Improved professional attitude* (n=18) and participants' experiences of the way the programme supported this element (n=68). The even larger discrepancy between Expectations: Improved SD (n=46) and experiences of the way the programme supported participants in this regard (n=103) may also indicate a new awareness of critical teaching competences such as reflection and inquiry. Furthermore can the way the programme met the teachers' expectations with regards to support for the different competences be a meaningful indicator of the value of the programme in supporting applied competence.

Summary of teachers' experiences regarding the way the programme supported their applied competence

The high code frequency for *Improved applied competence* (n=126) (Fig. 5.6) derived from the qualitative data is a strong indication that the Foundation Phase teachers experienced the programme as supportive of the development of their applied competence. Although the participants indicated various factors that may hamper applied competence as programme outcome, the positive codes for all four categories, which represent the elements of applied competence, outnumber the negative ones.

The highest code frequency for quotations linked to both negative and positive codes, relate to SD. This may be ascribed to the fact that the data collected after the programme implementation mainly relied on interviews which in itself is a reflective process. The concurrence in positive codes related to participants' experiences based on both the qualitative and quantitative data, confirms the value of a practical component in supporting applied competence while the high correlation between teachers' expectations and their experiences with regards to the way the programme supports their applied competence, further strengthens the case for a practical component as part of a DL programme.

5.5 EVIDENCE OF THE ELEMENTS OF APPLIED COMPETENCE AS INTERROGATED BY THE TEACHERS' LEARNING PORTFOLIOS

This section reports on the data analysed to find an answer to the following question:

> *To what extent do the learning portfolios of Foundation Phase teachers enrolled in the DL professional development programme interrogate evidence of applied competence?*

The learning portfolio was submitted at the end of the two-year programme for summative assessment by the NWU lecturers (§4.2.2). Since different lecturers were responsible for different sections contained in the portfolio, each section was summatively assessed by the lecturer responsible for that specific knowledge area. This assessment model resulted in fragmented evaluation and detracted from the reliability of the assessment results as a true and objective reflection of applied competence as programme outcome of the portfolio as a whole.

To enable me to determine to what extent the learning portfolios interrogate the elements of applied competence, I perused each section of the ten learning portfolios randomly selected from the total number submitted, and used the self-designed Likert scale (§4.5.2.3, Appendix B) to evaluate the way each section demonstrated evidence of the elements of applied competence as identified in the literature (§2.4 and §3.2). The scale showed levels progressing from Developing, Functional, Proficient, to Advanced. A qualified and experienced person who was not involved in the programme development or delivery was requested to objectively evaluate the same ten portfolios using the same measuring instrument as a form of peer validation (§4.8.3). The total number of ratings on the positive side of the scale and the total number of ratings on the negative side of the scale for each component as allocated by each evaluator, were added together for a meaningful comparison of the two rating sets as summarised in Table 5.25:

Table 5.25: Evaluation of the portfolio based on evidence of the elements of applied competence

1. Pedagogical content knowledge (PCK)	Sound *subject knowledge* and *curriculum knowledge* in that they know how to teach their subject by selecting, sequencing and pacing content in accordance with both subject and learner needs; *Pedagogical knowledge* in that they know who their learners are and how they learn; understand their individual needs and tailor their teaching and content according to learners' needs;			
	1. ADVANCED: Demonstrated outstanding applied competence **2. PROFICIENT:** Complied with criteria for applied competence		**3. FUNCTIONAL:** Some evidence **4. DEVELOPING:** No/little evidence	
	Peer	**Researcher**	**Peer**	**Researcher**
1. Classroom management	7 (portfolios)	7 (portfolios)	3 (portfolios)	3 (portfolios)
2. Teaching and learning	7	6	4	4
3. Perceptual development	5	6	5	4
4. Language	7	6	3	4
5. Mathematics	6	7	4	3
6. Life Skills	5	5	5	5
7. LSEN	5	6	5	4
2. Self-directedness				
2.1 Reflection	*Reflecting critically*, in theoretically informed ways on their own practice in order to constantly improve it and adapt it to evolving circumstances.			
	Peer	**Researcher**	**Peer**	**Researcher**
1. Classroom management	6 (portfolios)	4 (portfolios)	4 (portfolios)	6 (portfolios)
2. Teaching and learning	7	5	3	5
3. Perceptual development	6	4	4	6
4. Language	6	4	4	6
5. Mathematics	6	5	4	5
6. Life Skills	6	3	4	7
7. LSEN	5	4	5	6

2.2 Inquiry	Deeper exploration whereby teachers implement SD skills to *generate information* to enhance their teaching practice; constructing knowledge about teaching and learning themselves and using this understanding to guide their practice and their future learning			
	1. ADVANCED / 2. PROFICIENT		**3. FUNCTIONAL / 4. DEVELOPING**	
	Peer	**Researcher**	**Peer**	**Researcher**
1. Classroom management	6 (portfolios)	4 (portfolios)	4 (portfolios)	6 (portfolios)
2. Teaching and learning	6	4	4	6
3. Perceptual development	5	4	5	6
4. Language	6	4	4	6
5. Mathematics	6	4	4	6
6. Life Skills	6	3	4	7
7. LSEN	6	5	4	5
3. Applied practice	Connecting theory to practice by applying PCK in the most effective way in practice, including design and implementation of resources such as lesson planning, assessment strategies, learning and teaching material.			
	Peer	**Researcher**	**Peer**	**Researcher**
1. Classroom management	6 (portfolios)	4 (portfolios)	4 (portfolios)	6 (portfolios)
2. Teaching and learning	7	5	3	5
3. Perceptual development	6	4	4	6
4. Language	4	4	6	6
5. Mathematics	4	4	6	6
6. Life Skills	4	4	6	6
7. LSEN	4	6	6	4

4. Professional attitude	Demonstration of responsibility, commitment, enthusiasm, motivation, positive work ethic; display appropriate values and conduct them in a manner that befits, enhances and develops the teaching profession.			
	Peer	**Researcher**	**Peer**	**Researcher**
1. Classroom management	6 (portfolios)	6 (portfolios)	4 (portfolios)	4 (portfolios)
2. Teaching and learning	7	6	3	4
3. Perceptual development	5	6	5	4
4. Language	6	6	4	4
5. Mathematics	6	6	4	4
6. Life Skills	6	6	4	4
7. LSEN	6	7	4	3

From the above two rating sets it is obvious that the subjectivity of an evaluator plays a determining role in the interpretation of the way applied competence is demonstrated through the learning portfolio. This is even more obvious in the four-level rating scale of the measuring instrument (Appendix B). The literature suggests careful consideration of the various determinants of reliability in portfolio assessment, such as the student profile and the context in which the portfolio is compiled (Berrill & Addison, 2010; Imhof & Picard, 2009; Van der Schaaf et al., 2008; Zeichner & Wray, 2001) (§3.4.4.3). The discrepancy may be ascribed to the fact that, as programme designer and lecturer of some of the programme components, I may have been prejudiced with regards to my expectations of the programme outcomes. Although the criterion for each element is defined in the measuring instrument, individual interpretations and perceptions of applied competence are influenced by previous experience and dispositions of the individuals; where dispositions are defined as the controlling perceptual (mental, emotional, spiritual) qualities that determine a person's natural or usual ways of thinking and acting (Usher, Usher, & Usher, 2003). It is also uncertain in which way the teachers developed the competences as a result of the programme; some teachers may have already possessed these competencies before the programme commenced. Evaluators furthermore had no insight into the specific teaching context of the teachers. The portfolio process did not provide teachers the opportunity to describe their teaching context or to motivate their actions or evidence of applied competence as displayed in the portfolio according to their specific teaching contexts. DL programme designers should consider the effectiveness of such a measuring instrument and the meaningfulness of assessing a portfolio as summative assessment of applied competence as programme outcome. However, based on the conjoined scale in Table 5.25, the following findings emerged from the two ratings, which may be meaningful.

Both evaluators acknowledged relative good evidence of PCK in the seven sections of the learning portfolios. The ratings of both evaluators indicated that between five and seven portfolios demonstrate PCK on the conjoined Proficient- Advanced level (higher level), while *between three* and *four* portfolios were rated on a Developing-Functional level (lower level) for the respective sections.

In the section focussing on SD, the discrepancy between the two rating sets is again evident as the peer evaluator rated between *five and seven* portfolios as providing evidence of a reflective and inquiry approach to teaching on the higher level while I, as the researcher found the opposite to be true, namely that between *five to seven* portfolios demonstrate SD on the lower level. While portfolio tasks required of teachers to reflect after lesson implementations, only two of the ten portfolios showed adherence to this requirement. Apart from the one portfolio task specifically requiring of teachers to reflect on their own theory of effective education in the Foundation Phase, there was little evidence of continuous reflective learning or reflective practice, which motivated my own lower rating of evidence of SD. Very few teachers searched for resources other than those supplied in the programme content which was also assessed as a generally low level of inquiry-based practice.

The evaluation of the section on *Applied practice* again shows a discrepancy between the two rating sets with the peer evaluator acknowledging greater evidence of applied practice. However, in the section on *Professional attitude* the two rating sets concur by acknowledging a relatively high evidence of professional attitude; five to seven portfolios were rated on the Proficient-Advanced level in this regard.

The two elements of applied competence which were demonstrated most strongly through the portfolio is *PCK* and *Professional attitude*. The study guide (Appendix C) assisted teachers through the portfolio process, the planning and implementation of practical tasks which required cooperation between teachers in the designing of learning experiences and resources, as well as in reflection after lesson implementation. Deficiencies in programme design and delivery as well as the distance between teachers and between lecturers and enrolled teachers may have hampered the development of SD skills such as reflection and inquiry. Future DL programme design should thus find ways to better support these critical skills.

Although basing an evaluation of applied competence on the summative evaluation of a learning portfolio may not render a true picture of the way a programme supports the elements of applied competence, it may serve as an indicator of the barriers teachers still experience after implementation of the programme, and of the obstacles hindering them in providing evidence of applied competence. Since some portfolios were still written by hand and resources used for teaching and learning show limited

access to quality resources and little or no use of technology, this may detract from professional presentation and result in a lower rating. The teachers who do not have access to technology also did not have access to the resources on the DVD included as part of the study material, and would not have been able to link knowledge to effective practice as illustrated through the visuals on the DVD. Limited use of computers and the Internet may also have resulted in teachers experiencing the portfolio tasks such as the planning of lessons, designing LTSM, and completing administrative forms, as time consuming and challenging. Since various participants commented on their heavy workloads, the portfolio may have been viewed as yet another burden which may have resulted in a less professional presentation as confirmed by the following quotations:

PostQ. T16: Its on a weekend , too much to do , no free time. School takes too much personal time

PostQ. T9: This programme motivated me, although it was hard, studying, working and being a mother.

Although intensive observation of classroom practice before and after the programme implementation may have contributed to a more reliable evaluation of the way the programme supported applied competence, the literature confirms that observation alone cannot provide an authentic evaluation of applied competence (Darling-Hammond & Snyder, 2000) (§4.5.2). Since the main focus of this study was to hear the voices of the teachers about their experiences of the programme, the individual interviews focused on their portfolios which provided them with the opportunity to narrate their experiences of the different sections and tasks while paging through their portfolios with me. This data collecting process provided a more reliable picture of the value of the portfolio within the context of the participants as it provided participants with the opportunity to explain the barriers they experienced and the professional gains they acquired through the process (§5.4).

5.6 CHAPTER SUMMARY

In this chapter I gave a detailed account of the data analysis as well as the findings following from the analysis.

Sub-questions guided me in the analysis of the data in order to find an answer to the research question:

How does a practical component, included as part of a revised DL professional development programme of the NWU implemented in the Northern Cape, support Foundation Phase teachers' applied competence?

The multiple methods used to collect data as well as the different data sources used, provided different perspectives on the sub-questions while at the same time served as triangulation to strengthen my findings. Fig. 5.14 illustrates the application of measure and method triangulation to strengthen findings with regards to the way the programme supports applied competence. Multiple data collecting methods and varying samples from the target group enabled me to identify the strengths and weaknesses of the programme from different angles.

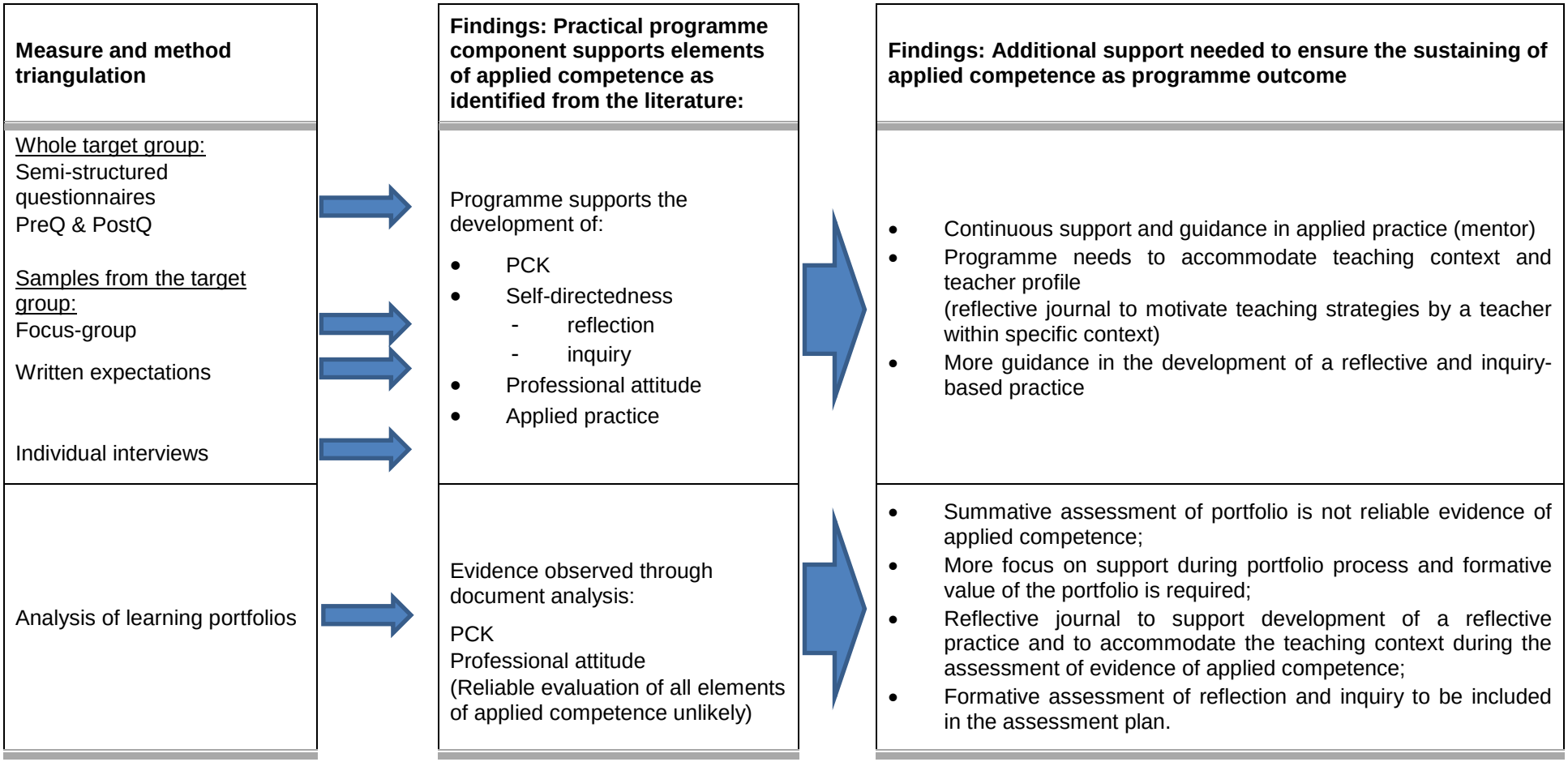

Fig. 5.14: Measure and method triangulation in support of findings on the strengths and weaknesses of the practical component of the DL programme

The quantitative methods provided information on the teacher backgrounds and their professional learning needs as part of the ***teacher profile***. This data were supplemented by qualitative data which together provided a clearer picture of the teacher enrolled in the programme. Knowledge of the profile of the teacher enrolled is critical for understanding the participants' expectations of the programme, their experiences of the way the programme supported them in developing applied competence, and for the way their portfolios provided evidence of their applied competence.

While qualitative methods were mainly used to collect data on the ***teaching context*** of the teachers, this data were supplemented by quantitative data to build an understanding of the context in which the teachers need to implement new knowledge and skills. The findings on the teaching context provided an important point of reference for the value of the programme in supporting teacher applied competence in specific contexts.

All expectations emerging from the qualitative data sources, namely the participants' written expectations, the open comments in the PreQ and PostQ, and the focus-group interview, and the individual interviews provided valuable insight into participant ***expectations for the way the programme were to support their applied competence***. Determining participant expectations also provided an opportunity for comparison between expectations, own competence ratings before the programme implementation, as well as the teachers' experiences of the way the programme met their expectations.

The data collected on the ***experiences of participants regarding the way the programme supported them in developing the elements of applied competence*** namely PCK, SD, the development of a professional attitude, and applied practice, provided strong evidence for the value of the practical component. However, barriers to the way these competencies are realised in practice also emerged from the findings which add to the value of the study by providing guidelines for future DL programme design which are discussed in more detail in Chapter six.

Investigating ***the way the learning portfolio interrogates evidence of elements of applied competence*** provided valuable information on the meaningfulness of the

learning portfolio as assessment instrument in a DL programme. Using the learning portfolio to evaluate applied competence was however found to be a less reliable source of information on the way the programme supports the development of the elements of applied competence. Suggestions for ways to support sustainable applied competence through the portfolio process and alternative assessment strategies are discussed in Chapter six.

Constant comparison of the data collected through the various methods and from different data sources contributed to crystallisation of the findings by indicating concurrences as well as contradictions. Chapter six links the findings expounded in Chapter five with the research aim and objectives and explains how the data provided answers to the research problem. Chapter six further concludes with reflections on the contribution of the study to the knowledge field of effective DL programme design aimed at applied competence of Foundation Phase teachers.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

In South Africa DL is progressively used for the professional development of teachers. The practice based disposition of Foundation Phase education has implications for the design and delivery of DL programmes. Providing teachers with content knowledge and knowledge of effective pedagogy in a DL programme is relatively achievable through study material and lectures. However, supporting teachers to master and implement the knowledge in a meaningful and sustainable way in practice, pose challenges to the design and delivery of a DL programme aimed to support applied competence as programme outcome.

As lecturer of the NWU I was involved in the designing of a practical component that was added to a revised version of the traditional content-based Foundation Phase ACE programme delivered via DL. The purpose of the practical component was to support the development of teachers' applied competence through equipping them with relevant PCK, to support them in developing a self-directed and professional approach to teaching, and to guide teachers in the application of knowledge in practice. A learning portfolio and technology in the form of a DVD were employed as design features of this practical component (§4.2.2).

The aim of the study was to evaluate the way this practical component included as part of a revised DL professional development programme of the NWU implemented in the Northern Cape, supported the development of Foundation Phase teachers' applied competence. It was anticipated that findings will show the strengths and weaknesses in the design of the practical component with specific focus on the way this component was experienced to have supported the applied competence of these teachers within their teaching context (Fig. 3.3).

The importance of the study was motivated in Chapter one against the background of the current situation of education and teacher professional development in South Africa. Chapter one also gave an overview of the research problem, related literature and the research methodology. Chapters two and three grounded the theoretical and

conceptual framework for effective teacher professional development in findings from national as well as international literature. These chapters report on elements contributing to applied competence in effective teacher professional development programmes as indicated by the body of scholarship. Programme design features supporting applied competence in DL programmes for teacher professional development were also identified from the literature. This literature review contributed to attaining the first two objectives of the study (§6.2.1; 6.2.2).

Chapter four covered the research paradigm and methods for the implementation evaluation study. The qualitative approach to the research was grounded in the constructivist-interpretivist paradigm where the concern is with a greater understanding of the way the practical component supports Foundation Phase teachers' applied competence within their specific context. Multiple methods were implemented to collect data which provided me the opportunity to identify concurring data through emerging repetitions and echoes in participant responses in the different data sources (Denzin & Lincoln, 2005, p. 249). Quantitative data served as descriptive data and to crystallize the findings. A combination of purposive and convenience sampling was implemented to collect information from a population that is informative about the practical component added to the revised DL professional development programme. Through the interpretive methodology I aimed to construct knowledge on the teachers' profile, teaching context, teachers' expectations of the programme as well as their experiences of the way the programme supported their applied competence within their specific context.

Chapter five gave a detailed account of the qualitative data analysis and findings based on the data set in order to find an answer to the research question (§4.3). Various sub-questions directed the investigation. The interpretivist approach allowed me to explore the meanings and interpretations relating to the focus-group interview, teachers' written expectations for the programme, individual semi-structured interviews and teachers' open comments in the pre- and post-implementation semi-structured questionnaires. A computer-based qualitative data analysis system, ATLASti™, was used to code and analyse the qualitative data according to themes and categories while quantitative data were processed by the North-West University Statistical Consultation Services. Constant comparison of codes, categories and

themes allowed for triangulation of the data collected through the multiple data sources whereby concurrences and negative evidence in the findings were identified, interpreted and explained (Boeije, 2002, p. 393). Through evaluative and critical thinking I interpreted findings to reach reasonable and supportable conclusions (Patton, 2008, p. 477) on each of the sub-questions.

In this chapter I explain how the research aim was attained through achieving the respective research objectives. A model, based on the findings from literature as well as through the empirical study, is suggested to improve the effectiveness of the DL programme design for the professional development of Foundation Phase teachers. The chapter concludes with suggestions for further research and also points out limitations of the study.

6.2 RESEARCH OBJECTIVES AS ATTAINED THROUGH THE LITERATURE STUDY

The following research objectives, which correlate with the first two sub-questions, were achieved through the literature study:

6.2.1 Exploring the body of scholarship with regards to elements contributing to applied competence in effective teacher professional development programmes

According to the literature a teacher is regarded as a highly skilled person who has gone through a rigorous and relevant programme of general and specialised education (Gabela, 2004, p. 56) (§2.2.1.1) while ***applied competence*** is defined as the ability to integrate and apply different types of knowledge in the moment of practice to secure effective learning (South African Department of Higher Education and Training, 2011, pp. 7, 8) (§2.2.1.3). Since the literature revealed that sound ***pedagogical content knowledge*** is founded on skilled blending, adapting, and presentation of content and pedagogy (§3.2.1), the critical inclusion of PCK in all programmes aiming to support applied competence in teachers is evident.

In order to support the development of autonomous teachers who are able to make informed choices with regards to the most effective practices for their specific

contexts, teacher education programmes further need to support the development of ***self-directed skills*** (§3.2.2). The literature defines SD as a multi-dimensional concept closely related to SDL and SRL which are prerequisites for an inquiry approach to learning and teaching as well as for lifelong learning. Two core aspects of SD namely *reflective* and *inquiry-based learning* emerged from the literature as essential components of SD. The role of reflection and inquiry in improving practice is expressed by various authors (3.2.2.1; 3.2.2.2). The competence to reflect *on* and *in* practice further serves as motivation to continuously identify and apply the most relevant knowledge and strategies appropriate in specific contexts for sustained applied competence. The critical role of a reflective and inquiry-based approach to teaching is accentuated in the literature.

A ***professional attitude*** as outcome of teacher education programmes is highlighted as the drive behind self-directed teaching and consequent quality learning in schools (§3.2.3). Teacher professional development programmes which aim to support applied competence should therefore strive to instil an attitude of commitment to effective practice. Commitment to quality education as outcome of all teacher education programmes is also confirmed by the South African DBE (§2.2.1.1). Such commitment serves as motivation to improve practice through inquiry-based learning based on critical reflection on all aspects related to teaching practice.

The literature further accentuates the interrelatedness between knowledge and practice and the critical role of ***guided applied practice*** in teacher education. Various authors agree on the role of application of practical knowledge for durable changes in teacher behaviour. The MRTEQ (South African Department of Higher Education and Training, 2011, p. 6) further emphasises *applied competence* as the primary area for assessing whether or not the requirements of a learning programme are being achieved (§2.3.1). Programmes aimed at the professional development of teachers should therefore not only support teachers in attaining relevant PCK, but guide them in the meaningful application of knowledge in practice (§3.2.4).

The literature confirms that the core elements in the effective development of applied teacher competence include relevant PCK, self-directed competencies such as reflection on theory and practice as well as inquiry learning, the development of a professional attitude, and guided application of knowledge in practice. An exploration

of the way these elements are accommodated by education programmes offered in four top performing countries revealed consistencies as well as conflicting support for the elements of applied competence. The programmes offered in all four countries contained a strong knowledge base, including subject and pedagogical knowledge (§2.4.5).

Models followed in Finland (§2.4.1) and Canada (§2.4.3) give high priority to SD with specific reference to learning grounded in reflection and research and in preparing teachers for reflective and inquiry-based practice. Although both South Korea (2.4.2) and Cuba (§2.4.4) include research as part of the curriculum, the literature critiques the lack of self-directed learning and the development of autonomous teachers as outcomes of the programmes offered in these countries (Kim and Han, 2002; O'Farrill, 2012, p. 36 and 37; Park, 2010; Seong et al., 2009).

The high priority given to motivation, commitment, and a professional attitude by teacher education programmes offered in Finland, South Korea, and Canada is in strong contrast with the approach followed in Cuba where the teaching profession is viewed as self-sacrifice to a national dream which negates teacher autonomy and decreases student learning potential and motivation (Cruz-Taura, 2003, p. 19; Ravsberg, 2012). Ravsberg comments on the large number of disgruntled Cuban teachers leaving the profession. This unfortunate situation may be an indication of the unsustainability of applied competence as outcome of an autocratic teacher education system despite previous augmentation of education standards (O'Sullivan, 2008, p. 117). However, the best asset of Cuba’s teacher education system is the strong guidance of knowledge in practice. Through collaboration between the HEI, the school, and the Department of Education, teacher trainees are supported to link course work to real-world applications which deepens their interest and prepares them for practice (Gasperini, 2000, p. 10; O'Farrill, 2012, p. 12) (§2.4.4.1).

Lessons learned from top performing countries concur regarding the critical role of the elements of applied competence in effective teacher education programmes irrespective of the differences in teacher education policies and ideologies. The programmes offered in these countries further regard opportunities for guided applied practice as prerequisite for the development of applied competence (§2.4.5).

Apart from the critical core elements of applied competence, the literature further shows significant determinants of sustained applied competence as programme outcomes such as personal and situational factors related to target teacher populations (§3.3). The way a programme design, content, and delivery accommodates the teacher profile (§3.3.1) and teaching context (§3.3.2) will influence the way teachers are motivated to change ineffective teaching practice and to implement new knowledge and skills in a sustained way in practice.

The findings of the body of scholarship regarding elements which contribute to applied competence in effective teacher professional development programmes, have implications for DL programmes aimed at the professional development of Foundation Phase teachers. Programme design and content need to support the development of PCK, SD, a professional attitude, and guide teachers in the application of knowledge in practice. The findings from the literature provided impetus for the evaluation of the practical component added to the revised DL professional development programme in order to determine the value of this component and to suggest modifications for future DL programme design.

6.2.2 Exploring the body of scholarship with respect to programme design features to support applied competence in DL programmes for teacher professional development

Building on the findings regarding the elements of applied competence (§6.3.1.1), the literature was further examined to determine how DL programme design could support these elements namely relevant PCK, the self-directed learning strategies, namely reflection and inquiry, the development of a professional attitude, and guided application of theory in practice.

Various strategies and mechanisms emerged from the literature which included the implementation of ICT, a mentor system, and a learning portfolio to scaffold the development of applied competence (§3.4.4 and Fig. 3.3).

The literature on strategies employed by top performing countries further reports on various forms of ICT that could be used to support applied competence such as electronic conferencing, assessment of applied practice by teacher-educators

through live stream broadcasts, the recording of practical lesson presentations, and the use of LMS to support learning (§2.4). However, the diverse culture and teaching contexts of teachers may pose various challenges to the effective use of technology to support the development of applied teaching competence (§3.4.4.1).

Various authors view the role of mentors as a critical factor in teacher education (§3.4.4.2). The value of a mentor system in teacher education includes guidance to link theory to practice, supervision during the application of PCK in the classroom, and scaffolding reflective practice. Although the significance of a mentor system for applied practice is widely acknowledged, the implementation of such a system requires the collaboration and commitment of all stakeholders such as the DoE, school management, and expert teachers who need to act as mentors. Such mentor systems are not yet in place in South African schools and therefore could not form part of the programme investigated. Although the study guide suggests that teachers identify a qualified colleague to act as mentor during the programme (Appendix C), the implementation evaluation did not focus on the effectiveness of such an informal mentor system.

The portfolio as mechanism to support applied competence in teachers is widely supported in the literature (Table 3.1 in §3.4.4.3). The values most often mentioned were the way the portfolio supports reflection, and the development of reflective practice. Other uses of the portfolio mentioned in the literature include the role of the portfolio in assisting applied practice, heightening teacher motivation, and developing of a professional attitude. The portfolio was also found to support improved understanding and transforming education. Life-long learning was further identified as a valuable outcome of the portfolio process which also ensures continuous professional development. Other valuable outcomes of the portfolio included the development of self-directed learning and improved autonomy; it could also serve to guide exploration and an inquiry approach to education. These functions of the portfolio clearly contribute to enhancing the sustainability of all programme outcomes in practice.

The value of the portfolio is thus clear and also served as motivation for the programme designers to include a learning portfolio in the DL programme component which was evaluated. Authors however caution that the profile and teaching context

of the teacher should be accommodated by the portfolio design (Berrill & Addison, 2010, p. 1184; Imhof & Picard, 2009, p. 153; Van der Schaaf et al., 2008, p. 1701). Although Van der Schaaf et al. (2008, p. 1701) support the use of a portfolio for assessment of applied competence, they are of the opinion that such an assessment strategy requires careful planning and implementation to ensure the meaningfulness of the process.

6.3 RESEARCH OBJECTIVES AS ATTAINED THROUGH THE EMPIRICAL STUDY

The following section reports on the way the findings from the programme evaluation contributed to attaining the research objectives.

6.3.1 Identifying and understanding theoretical and conceptual implications of the profile and teaching context of Northern Cape Foundation Phase teachers enrolled for the DL professional development programme

(Refer to §5.2.1 and §5.2.2; Fig. 5.1 to Fig.5.4; Table 5.2 to Table 5.12)

The literature confirms that the way a programme accommodates the contextual and personal factors of a target teacher population will greatly determine how student-teachers learn and will consequently also impact sustainable outcomes in practice (§3.3). The value of the programme therefore had to be evaluated against the background of the teacher profile and teaching context.

The findings related to the ***teacher profile*** show that the teachers are all female and mostly older persons responsible for the education of Foundation Phase learners, and generally have ample experience in practice (§5.2.1). The participants rated their own competences as relatively good in the PreQ. However, in spite of a relative strong rating of own knowledge of Foundation Phase learners' development and aspects related to teaching and learning (§5.2.1.2), a dire need for PCK, with specific focus on knowledge and skills to support LSEN and to collaborate with learners' parents in order to improve learning outcomes, emerged from both the quantitative and qualitative data. The participants assigned the lowest rating to their knowledge

and skills of LSEN (Table 5.5), and this competence was also most often quoted as an expectation with regards to the way the programme would support them (§5.3 and Table 5.14). Although most teachers have relevant prior qualifications they expressed a high expectation for the development of PCK (§5.3.1) and improvement of own practice (§5.3.4).

The data related to the teacher profiles further revealed strong evidence of a lack of SD, insufficient PCK, and a negative attitude towards teaching due to an unfavourable teaching context (§5.2.1.1; Fig. 5.1). These findings, based on the responses of the participants, have critical repercussions for applied competence as outcome of DL programmes. The latter strongly rely on SDL and autonomous application of knowledge in practice for sustaining programme outcomes in practice (§3.2.2; §3.4.3 and §3.4.4). A positive approach towards practice furthermore strengthens teacher motivation to apply new knowledge gained through the programme (§3.2.3). Since the literature shows that application of practical knowledge is important for durable changes in behaviour (§3.2.4), DL programmes for the professional development of teachers need to support the development of these critical competences.

The data analysis further revealed many factors that contribute to an unfavourable ***teaching context*** which may lead to low teacher morale. These factors have interrelated influences on each other and include *socio-economic circumstances*, the *school system*, *school management,* and aspects related to *learner background* (§5.2.2). The findings on the geographic position of the target population clearly contribute to challenging *socio-economic circumstances* as part of the teaching context and contain language diversity and financial restraints. Poor financial circumstances of parents not only result in a lack of funds for resources but also require of teachers to play a strong caring role in ensuring that learners receive critical living means.

Factors related to the education system which contribute to adverse teaching contexts such as large teacher-learner ratios and an inclusive approach to education, where teachers have to accommodate many LSEN in their classrooms, emerged from the data. Insufficient support from the DoE in the implementation of multiple new curricula and insufficient professional development programmes were further

mentioned as barriers in the development of applied competence. Poor socio-economic factors furthermore result in a high number of LSEN in classrooms (§5.2.2, Fig 5.4 and Table 5.12).

While the literature confirms the importance of the role of *school management* in quality education (§3.3.2), more than one quotation refer to a lack of support from management as well as a lack of a cooperative culture in the school (Fig. 5.4 and Table 5.11). Even if an individual teacher may be motivated to participate in professional learning activities, the access, support, and encouragement to participate are heavily determined by the school and the learning culture of the school (Opfer & Pedder, 2011, p. 393). Future programmes should therefore find ways to collaborate with all stakeholders including school managements and the DoE to ensure successful and sustainable programme outcomes in practice.

Factors related to learner backgrounds further contribute to incapacitating teaching contexts and include illiteracy of parents, poor learning readiness of learners at school entry, and poor parental involvement which is aggravated by parental substance abuse and the HIV/AIDS pandemic (§5.2.2, Fig. 5.4 and Table 5.12). Not only should the programme content guide teachers in supporting these learners but assessment of applied competence should take cognisance of challenging teaching contexts.

The teacher profile and teaching context clearly pose challenges to the way teachers will be able to master and implement new knowledge and skills in practice to improve their applied competence as outcome of a DL programme. The implications of these personal and situational factors for DL programmes is evident in the barriers caused by the relative older age of the teachers, language diversity, and personal issues such as financial restraints and a lack of prior knowledge. Although the findings show that the teachers in this programme have substantive experience in practice (§5.2.1 and Table 5.2), the literature indicates that not all experience learning necessarily contributes to applied competence (Aedo, 2002, p. 4; Opfer & Pedder, 2011, p. 387). It may also be difficult to motivate older teachers to change their beliefs about teaching after so many years in practice (§3.2.2.1). Opfer and Pedder (2011, p. 387) further remark that teachers bring both past experiences and beliefs to their teaching and learning which has implications for professional development programmes.

Should beliefs of effective teaching be founded in inappropriate teaching strategies practiced in the past, innovative strategies may be required to motivate change.

Radical design features may therefore be necessary to accommodate the profiles of the teacher enrolled in DL programmes. Not only does the programme content need to provide PCK that is relevant to their contexts but knowledge and skills which are lacking should be presented in such a way that mature teachers will be motivated to critically reflect on their current knowledge, identify ineffective practices, and revise their teaching strategies accordingly. The literature further confirms that mere transfer of knowledge will not guarantee effective implementation of knowledge in practice (§3.2.4). DL programmes should employ design features which systematically guide teachers in their application of knowledge and in the development of reflective and inquiry-based approaches to teaching. Above all the programme content and delivery should support the development of a professional outlook on teaching practice by instilling an attitude of commitment and motivation to improve education standards (§3.2.3). Assessment strategies should furthermore accommodate the teacher profile and teaching context.

Based on the literature it was anticipated that adding practice-based design features to the DL programme such as the learning portfolio, and adding accompanying audio-visual material (§3.4.4, Fig. 3.3, §4.2.2), would support teachers in the application of knowledge in their teaching context. Collaborative and inquiry-based tasks further aimed to support the development of more self-directed practice (§3.2.2). An additional purpose of the practical component was to guide teachers in critical reflection *on* an *in* practice and at the same time accommodate the profiles of the teachers by affording each the opportunity to provide evidence of teaching competence as applied in their specific contexts. The study guide motivated self-assessment through reflection on own professional performance and growth, and guided the teachers in compiling the learning portfolio (Kruger, 2011, p. v) (Appendix C). Evaluating the value of such a practical component was deemed necessary for future programme design.

6.3.2 Empirical investigation of the expectations of Foundation Phase teachers regarding the way in which the practical component of the DL professional development programme will support applied competence in their context

(Refer to §5.3, Fig. 5.5 to Fig. 5.13; Tables 5.13 to Table 5.16)

Since the literature confirms the relationship between the teachers' expectations of the way they will benefit by a programme and programme outcomes (Oolbekkink-Marchand et al., 2006, p. 219), it gave impetus to an investigation of teachers' expectations for the way the programme will support their applied competence (§5.3). Teachers' anticipated professional development through the programme further strengthened the findings on the teacher profiles with specific focus on their professional development needs (§5.2.1.2). Their expectations can also serve to guide programme designers in aligning future programmes with the needs of the target teacher population. Positive expectations imply a positive approach to the programme which may increase the possibility of successful programme outcomes (Ferlazzo, 2012; Ley, 2005, p. 1).

The participants' expectations showed positive as well as negative anticipations. Positive expectations were expressed regarding improved PCK, SD, applied practice, and improved professional attitude (Fig. 5.5). These expectations strongly concurred with data collected on the teachers' profiles and teaching context indicating a need for support in developing necessary skills and knowledge to accommodate LSEN, to plan, and to implement teaching and learning according to the curriculum (§5.2.1.2). The participants also strongly anticipated that the programme would guide them in the implementation of these skills in practice. The strong expectation for more knowledge and skills to support LSEN can be ascribed to the strong focus of the programme on LSEN (§4.2.2), but may also ensue from the teaching context which showed a large number of LSEN to be accommodated by these teachers who have no or limited previous training in this domain (§5.2.2.2 and Fig. 5.4).

The influence of extrinsic versus intrinsic motivation in a SD approach to practice and learning is confirmed in the literature (§3.2.2). Although *extrinsic motivation*, such as

the qualification and consequent increase in remuneration, may motivate a teacher to master the knowledge to attain the qualification, it will not guarantee applied competence as programme outcome. Contrary to extrinsic motivation, various participants showed intrinsic motivation in their approach to the programme which could contribute to sustainable programme outcomes (§5.3.3)

Negative expectations mostly referred to an increase in workload and an apprehension of own ability to comply with the requirements. Viewed in the light of the findings on the teaching context (§5.2.2) where teachers have to cope with large groups, many LSEN to support, and many socio-economic challenges, the programme could be viewed as a burden rather than an asset. Such a negative view may be aggravated in cases where a teacher also has low self-efficacy belief and lacks SD (Amel, n.d.; Ley, 2005, p. 1 and 2). A deeper inquiry into reasons for reservations about the programme may indicate ways to address these problems.

6.3.3 Empirical investigation of the way Foundation Phase teachers experienced the practical component of the DL professional development programme in terms of support for the development of their applied competence

(Refer to §5.4; Fig. 5.6 to Fig. 5.12; Table 5.15 to Table 5.24)

An interpretive approach allowed me to come to a reasonable conclusion with regards to the value of the practical component of the DL programme in the specific context of the participants. Since the individual interviews focused on the portfolios of the interviewees, they provided deeper insights of the way the portfolio process supported the following elements of applied competence:

- **Participant experiences related to improved PCK**

  (Refer to §5.4.1; Table 5.17 and Fig. 5.8)

An analysis of the data indicated a positive contribution by the programme in supporting the development of PCK. The participants appreciated the way the programme supported them to *link theory to practice* as well as the way the programme improved their *knowledge of LSEN, resources,* and *pedagogy.* The

interrelated roles of the elements in applied competence imply that the development of PCK is meaningless without *reflection on the implications of knowledge for practice* as well as the *motivation and commitment* to apply PCK in the most relevant way in practice. This interrelatedness is confirmed by the literature (§3.2.2, §3.2.3 and Fig. 3.1). Since a high frequency of quotations related to *reflection* and *improved attitude* emerged from the data, it strengthens the deduction that the practical component supports the sustainable development of PCK. In cases where all these elements are strongly supported, and where a programme further guides the application of knowledge in practice, sustainable programme outcomes in practice are promoted.

❖ **Participant experiences related to improved SD**

(Refer to §5.4.2; Tables 5.19 & 5.20; Fig. 5.9)

The literature endorses the importance of SD in all teacher education programmes but specifically in DL (§3.2.2 and §3.4.3). The practical component of the programme aims to contribute to the improvement of teachers' SD and thereby to support the development of SDL. Since the study focuses on competence in practice, SDL is not only viewed in relation to academic learning but includes learning *in* and *from* practice in a self-directed way through reflection and inquiry. All expressions related to improved SD are therefore viewed as support for applied SDL and consequently also applied competence.

The high frequency of quotations related to SD strengthens the assumption that a practical component provides support for this critical competence. The highest frequency occurred for reflection which is an indication of the value of the programme in supporting the development of a more reflective practice. The quotations included *reflection on effective practice, on own knowledge, and on changing ineffective practice*. Although reflection does not guarantee improved applied practice, there is agreement in the literature on the role of reflection in changing teacher behaviour and consequently in improvement of applied competence (Dewey, 1938, p. 9; Lee, 2005, pp. 700-702; Shulman, 1987, p. 12) (§3.2.2.1). Shulman and Shulman (2004, p. 258) highlight critical reflection on own practice as central to all teaching. The relative high frequency of quotations linked to *critical reflection on own practice* further

strengthens the value of the practical component in supporting improved applied competence through critical reflection

Reflection on metacognition (§3.2.2) also emerged from the data analysis which has been identified as a benefit of the portfolio process (Loughran & Corrigan, 1995, p. 574). Metacognition does not only improve learning but also contributes to lifelong learning through improving learning strategies. Mediating metacognition in teacher education will thus also contribute to sustainable programme outcomes where teachers will be developed as lifelong learners able to determine *what they know* and *how to go about learning* what they do not know (Candy, 1991, p. 15; Darling-Hammond, Austin, Cheung, & Martin, n.d.)

Although the practical component did not specifically include research tasks, it was expected of the teachers to search for the knowledge they may need to complete the portfolio tasks. The code frequency for *inquiry learning* is fairly low in comparison with the code frequency for *reflection* which may be an indication that the programme did not strongly support teachers to develop this competence. However, this lower frequency could also be attributed to a lack of SD which is indicated as part of the teacher profile (§5.2.1 and Fig 5.1). The relation between inquiry and SD strengthens the surmise that teachers do not view inquiry as a critical element of effective teaching.

Ultra-outcomes emerged from the data analysis such as quotations related to a belief that the programme *empowered* the teachers *to support others*, *equipped* them *to make a difference, to share knowledge* and to *cooperate with others* for improved practice. These responses demonstrate a commitment to improved teaching through self-regulated implementation of knowledge in practice, based on autonomous decision making for a change in behaviour and therefore directly related to sustainable applied competence supported by the strong indication of a change in professional attitude (§5.4.3 and Fig. 5.10). These ultra-outcomes serve as further confirmation of the value of the practical component in a DL programme to support applied competence.

Reflecting on barriers is necessary to determine how to overcome similar barriers in the future. Participant expressions indicating a lack of SD include reference to a *lack*

*of critical reflective skills, planning skill*s, and *SR* (Table 5.19). These experienced barriers indicate that more should be done to support reflection, planning, and the development of SD through scaffolding greater autonomy. Suggestions proposed include the implementation of a reflective journal and a mentor system to address these and other barriers (§6.4.2).

Although the findings strongly support the value of the programme in supporting SD and SDL, ensuring the sustainability of self-directed practice after completion of the programme may need continued support (Merriam, 2001, p. 10). Putting this support into place will require collaboration between the HEI, DoE, and the school management. This collaborative model was identified as part of teacher development programmes in top performing countries where all stakeholders cooperate to provide continuous support during and after the completion of teacher education programmes (§2.4.5 and Table 2.1).

❖ **Participant experiences of improved professional attitude**

(Refer to §5.4.3; Table 5.21; Fig 5.10)

A relative high code frequency related to experiences of improved professional attitude. The codes with highest frequencies include quotations expressing increased *motivation* with regards to teaching, a *change in attitude* towards teaching, *intrinsic motivation* to improve own practice, and *improved confidence*. Although the programme delivery included motivational videos on teaching, improved attitude was not a primary purpose or outcome (Study guide. p. vii and viii – Appendix C), but it was anticipated that improved SD, PCK, and practice would contribute to increased commitment and motivation. Since the literature highlights the role of reflection in improved confidence (§3.2.2.1) and 11 of the literature sources explored in Chapter three (Table 3.1) report on reflection as a significant outcome of the portfolio, this design feature could have played a significant role in the reporting of improved professional attitude. Shulman (2003) asserts that a greater understanding brought about by the portfolio contributes to a heightening of motivation which in turn leads to improved teaching practice. The development of a professional and positive attitude through the portfolio has been confirmed by six of the studies on portfolios for teacher education (Table 3.1). Farr Darling (2001, p. 110) further believes that if the

portfolio guides the student-teacher to a more inquiry-based approach to practice, it will instil a passion for on-going discovery and life-long learning. Quotations from the participants confirmed this notion:

FGr.T 2: I'm very excited – I'm glad I enrolled – I'm not sorry – I'm excited – Yeh - after I'm finished here I'm not going to stop.

Joining forces with colleagues in the interest of quality education is a trademark of professional attitude (§3.2.2.2). *Cooperative learning* is also mentioned as an important component of teacher education programmes implemented in the four countries identified as top performers in teacher education (§2.4). Although the participants indicated barriers which hamper cooperative learning, the ultra-outcomes related to cooperative practice may be an indication that they benefitted from the cooperative tasks and the sharing of knowledge and expertise. Since cooperative learning is indicated in the literature as a successful motivational strategy (§2.4.3.1), these tasks could have further contributed to an improved professional attitude towards teaching.

In contradiction to the largely positive programme outcomes that emerged from the data, quotations relating to a lack of professional attitude towards teaching and the programme in general, were also identified including a *lack of motivation* as well as poor self-efficacy beliefs while extrinsic motivation for completing the programme also emerged. Unfavourable teaching context (§5.2.2) may have contributed to the negative attitude expressed by some participants. However, the predominantly positive attitude towards the programme attests to the dire need of these teachers for more knowledge and skills to support their applied competence. It may also be a confirmation that the programme to a large extent complied with their expectations and professional learning needs. The high correlation between the teachers' expectations and their experiences with regards to the way the programme supports their applied competence, further strengthens the case for a practical component as part of a DL programme (§5.4.4.3 and Fig. 5.13).

Since a professional attitude, which includes motivation and commitment, is highly related to sustained applied competence and the realisation of ultra-outcomes in practice (Farr Darling, 2001; J. H. Shulman, 2003), the contribution of the programme

in supporting improved professional attitude endorses the value of the practical component added to the DL programme.

❖ **Participant experiences related to applied practice**

(Refer §5.4.4; Fig. 5.11 & Fig 5.12 and Tables 5.22 & 5.23)

The literature confirms the interrelatedness between PCK, SD, a professional attitude and guided application of knowledge in practice in teacher education programmes (Fig. 3.1) According to Dewey (1938, p. 43 and 44) experiences are dependent on transactions which take place between an individual and his/her environment. This environment includes the physical environment as well as the people with which a person works or communicates. The profile of the teacher (§5.2.1) and the teaching context (§5.2.2) thus need to be recognised in the form of guidance provided for applied practice as well as the assessment thereof.

Since the literature confirms the value of the portfolio in supporting applied practice (§3.4.4.3 and Table 3.1), the learning portfolio included as part of the practical component aimed to guide teachers in this regard, to support reflection and SD, and at the same time to provide each teacher with the opportunity to implement the portfolio tasks in her own context. The portfolio process together with the audio-visual resources could therefore have contributed to the relatively high frequency of quotations with regards to the way the programme supported teachers in *Improved applied practice* (§5.4.4.1 and Fig. 11). These quotations, together with references to the way the programme supported them to *Implemented knowledge in a self-directed way*, to *Accommodate leaner diversity*, and to *Implement resources*, endorse the conclusion that the programme supported applied competence. Furthermore, the codes related to *improved PCK* (§5.4.1) such as the *Ability to link theory to practice* as well as *Knowledge of classroom management,* will have a direct impact on applied practice. Since the themes *SD* (§5.4.2) and *Improved professional attitude* (§5.4.3), were also linked to a large number of quotations, the deduction that teachers will be motivated to apply PCK in practice in a self-directed way, is strengthened. This will in turn support ultra-outcomes which strongly support the notion that the practical component supports applied competence.

A relatively high frequency of quotations related to poor application of knowledge in practice also emerged from the data (§5.4.4.2 and Fig. 5.12). The challenging *Teaching context* is blamed by many teachers as the cause for poor applied practice while ineffective *Programme design* was also highlighted by some participants. *Insufficient prior PCK* could also have played a role in the way teachers were able to constructively link new knowledge to prior knowledge and meaningfully apply their knowledge in practice. A *Negative attitude* due *to the teaching context* may result in a low motivation to implement new knowledge in practice while a *Lack of SR* and *SD* may also negatively influence the way teachers will be able to reflect on practice and PCK to make informed choices and to find knowledge and resources they may be lacking through inquiry. While reasons for these barriers should be further explored, a model that includes design features that address these barriers is suggested based on the findings of this study (§6.4.2).

6.3.4 Empirical investigation of the extent in which the learning portfolios interrogate evidence of elements of applied competence

(Refer to §5.5 and Table 5.25)

Six of the sources listed in Table 3.1 (§3.4.4.3) report on the way portfolios provide opportunities for organising evidence of applied practice to serve as performance based assessment instrument in teacher education programmes. However, in this study it was found that the subjective view of an evaluator may not render a consistent and reliable evaluation of applied competence according to set criteria as demonstrated through the portfolio. In addition, determinants such as personal and situational factors that play a role in the way a teacher provides evidence of applied competence, should also be acknowledged in the evaluation process (§3.3; §5.3; §6.3). This critical role of the teacher profile and teaching context in the effective use of portfolios concur with the findings reported by three of the sixteen sources listed in Table 3.1. The unfavourable and often diverse context in which the DL programme under investigation is implemented should be recognised. The use of the portfolio for

assessment of applied competence requires careful planning and implementation to enable authentic, reliable, and fair assessment.

However, the assessment of the learning portfolios provided valuable insights into the teachers' applied competence and the problems which they may have experienced. The ratings of two evaluators showed relative strong evidence of PCK as well as a professional attitude portrayed through the learning portfolios. The large discrepancies between the assessments of the two evaluators with regards to SD and applied practice however, did not allow for a reliable conclusion of these competences as performed outcome in the portfolio.

Since the semi-structured individual interviews also focused on the completed portfolios of the participants (§4.5.2.3), they are viewed as a more reliable evaluation of the value of the portfolio in supporting applied competence as experienced by the participants than the summative assessment of the learning portfolios. In light of the findings derived from other data sources, the prevalent value of the learning portfolio most obviously lies within less observable processes such as the development of reflective and inquiry-based practices and improved professional attitude (§5.3 and §5.4). It is also possible that the impact of the support provided by the practical component for applied competence may not be evident so soon after the programme implementation but could contribute to long-term outcomes (Farr Darling, 2001, p. 110; Yasin et al., 2012, p. 3841).

Although the summative assessment process was found to be less reliable, confirmation of the value of the portfolio for applied competence that emerged from the other data sources and discussed in the preceding section (§6.3.2), is confirmed by the literature (Table 3.1). Since Galluzzo (2005, p. 143) posits that portfolios are the closest measure we have of knowing what goes on in classrooms by giving insights into how teachers think and approach the craft of teaching, assessment strategies should be devised to fairly evaluate teacher competence in their specific contexts and also include reflective tasks to demonstrate their way of thinking. The inclusion of a reflective journal as part of the learning portfolio can support continuous reflection on practice as well as on own learning processes (Yasin et al., 2012, p. 3840). Such reflections can provide further insight to portfolio evaluators about the specific teaching contexts of the teachers.

Since Berril and Addison (2010, p. 1183) as well as Zeichner and Wray (2001, p. 620) claim that the way in which teachers enact the required competencies in the portfolio is linked inextricably with their identities, the portfolio should guide continuous reflection on and the implications of the teaching context for application of knowledge in specific portfolio tasks. These situational factors also have implications for the reliable and valid assessment of teacher applied competence as demonstrated in a portfolio.

A deeper exploration of the reasons for barriers expected and experienced by participants will provide valuable insight for future programme design to effectively support applied competence. Suggestions in the following section include design features which may contribute to addressing these barriers.

6.4 RESEARCH OBJECTIVE AS ATTAINED THROUGH BOTH THE LITERATURE AND THE EMPIRICAL STUDY

The following section reports on the way the findings from the literature and the programme evaluation contributed to attaining the following research objective:

To put forward a model for a DL programme aiming to support Foundation Phase teachers' applied competence based on the findings from the literature and the empirical study.

6.4.1 Findings on the value of the practical component of the DL programme in supporting applied competence of Foundation Phase teachers

Grounded in the literature on effective learning by teachers (Chapter two and Chapter three), the findings confirm the value of the practical component in supporting the development of PCK (§5.4.1), SD (§5.4.2), improved professional attitude towards teaching, (§5.4.3) and guiding teachers in the application of knowledge in practice (§5.4.4). The most apparent confirmation of the value of the programme lies within the strong evidence of a more reflective approach to learning as well as to practice (§5.4.2.1). The high frequency of quotations referring to critical reflection on knowledge and practice is a strong indication that the programme

supports teacher applied competence since reflection is a prerequisite for a change in teacher behaviour (Biggs, 2003, p. 31; Dewey, 1916, p. 73; Lobman et al., 2004, p. 32; Modiba, 1997).

The programme implementation further also indicated barriers in the way such a practical component supports applied practice which serve as important guidelines for future programme design (§5.4.4.2). The barriers relate to the teacher profiles and teaching contexts as well as the programme design. The findings also showed insufficient support for the development of sustainable reflective and inquiry approach to practice. Since the literature indicates this competence as critical for the development of autonomous teachers, this is meaningful for future programme developers. Supporting inquiry and reflection should develop autonomous teachers equipped to sustain applied competence, and ways should be devised to support these competences.

Findings on the evaluation of the portfolio as assessment instrument for applied competence yielded valuable lessons for future programme design. The assessment strategies employed to evaluate the development of applied competence as outcome of the practical component need careful consideration as the findings accentuate the role of evaluator subjectivity in the legitimacy of the assessment process. The findings showed that teacher profiles and teaching contexts need to be accommodated in the assessment process. A suggested model for future programme design features is based on the findings from the literature as well as the implementation evaluation (§6.4.2).

6.4.2 Suggested programme design based on findings

A suggested DL programme design is grounded in knowledge constructed socially by individuals through describing, making sense of and negotiating the way the evaluand supported elements of applied competence (§4.4.1). Interpreting findings from the literature and the empirical study through constant comparison, guided my construction of knowledge on effective DL programme design aiming to support the applied competence of Foundation Phase teachers. Fig. 3.3 of Chapter three summarised the literature findings on design features and the functions of such features in supporting the elements of applied competence including the portfolio,

mentors, and the use of ICT. Although a formal mentor system does not form part of the programme investigated, two of these features, namely the portfolio and ICT in the form of a DVD with audio-visual resources as well as presentations via the interactive whiteboard, were employed to support the development of applied competence. While the value of both the portfolio and the DVD were confirmed by the participants it was not possible to determine the contribution of the audio-visual resources independently of the portfolio process. Further investigation with specific focus on this feature may show the value of practice-based audio-visual material for applied competence. However, the following features based on the research findings form part of a suggested model for DL programmes aimed to support the applied competence of Foundation Phase teachers:

6.4.2.1 Scaffolding deeper integrated reflection for increased sustainability of applied competence

According to Zeichner and Wray (2001) it is obvious that portfolios promote reflective learning. The question to be asked is how to ensure quality authentic reflection that will challenge teachers to confront difficult issues (Farr Darling, 2001). Furthermore, the way reflection contributes to sustained applied competence depends on the meaningfulness of the reflection as well as the way these reflections materialise in practice. The literature further reports on the value of written reflections on own learning, barriers experienced, and ways to address these barriers in specific contexts (Henderson et al., 2004, p. 362 and 363; Yasin et al., 2012, p. 3840). Although the teachers were motivated to reflect on and in practice as well as on the implications of theory for their specific practice, the programme did not specifically guide them in written reflections on practice or on own learning. The distance between lecturers and teachers enrolled in a DL programme further hampers the mediating of reflective practice. Incorporating a *reflective journal* may thus support continuous and meaningful reflection *on* and in practice while a formal *mentor system* as part of the portfolio process may provide critical conversations regarding effective PCK and practice (Darling-Hammond & Snyder, 2000, p. 538). Since this programme did not contain a formal mentor system, such a design feature could be included to provide further support in the form of social learning, guided reflection and applied

practice as well as for formative assessment and feedback on applied competence (Ingersoll & Strong, 2011, p. 24).

Based on the findings in the literature (§3.2.2.1) and the empirical study (§5.4.2.1), a new model is suggested that accommodates the role of integrated reflection as part of the learning process (Fig. 6.1). This model includes a reflective journal as well as a mentor system which may not only deepen the reflective process and level of learning but also scaffold a more inquiry-based practice and sustained SD in practice. The model also recognises the reflection process as posited by Boud et al. (1996, p. 34) (§3.2.2.1), in the learning process:

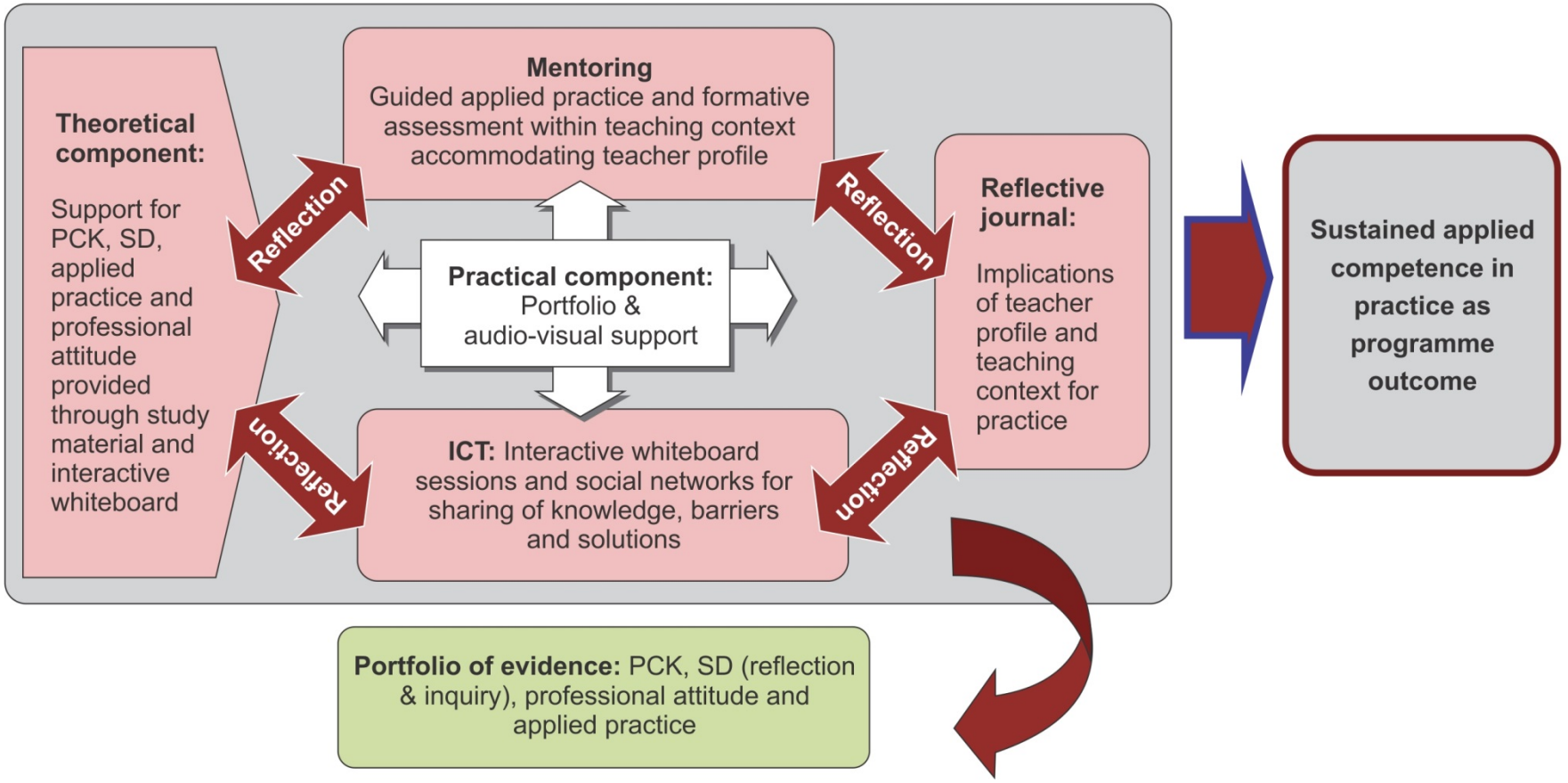

Fig. 6.1: A model for integrated reflection as part of a practical component in a DL programme

Since the journal guides reflection on own development and the learning portfolio process mediates experience learning, it is expected to further support teacher learning from practice. If a mentor plays a role in the reflection process it could further promote applied competence through social learning. Since the study showed that summative assessment of the portfolios may not render a true picture of applied competence (§5.5), a reflective journal may further provide teachers with an opportunity to motivate their teaching, learning, and assessment strategies by taking account of their specific teaching contexts. Portfolio evaluators will have access to valuable insights into the teacher profiles and teaching contexts, supporting a more valid assessment of the portfolio as evidence of applied competence.

6.4.2.2 Support for social learning for increased sustainability of applied competence

The barriers caused by the distance between teachers as well as between lecturers and teachers in the implementation of successful cooperative learning clearly emerged from the findings. Since the literature confirms the critical role of cooperative learning (§2.4.5), ways should be explored to support social learning in a DL programme. The NWU UODL provides support to teachers during real time contact sessions through interactive whiteboards (IWBs) (§4.2.1). These sessions are mostly implemented for knowledge transfer and provide opportunity for questions by teachers with regard to the programme content. However, these sessions could also provide valuable opportunities for knowledge sharing through real-time interactions and collaborative learning in the DL programme if a 'flipped classroom model' is followed. In this model teachers have access to pre-recorded lectures on the Internet and/or electronic study guides, while whiteboard sessions focus on meaningful interactions between lecturers and teachers and between teachers at various centres. The implementation of social media networks as opportunity to learn from and with peers should also be investigated as support for social learning in DL programmes.

6.4.2.3 Focus on the learning process for sustained applied competence

Although the findings clearly indicate the value of the portfolio process, the study also showed shortcomings in portfolio assessments. These findings concurred with the literature by highlighting possible bias which may result in unreliable assessment of teaching competence (Farr Darling, 2001, p. 117; L. S. Shulman, 1987, p. 6). Furthermore the role of the teacher profiles and teaching contexts, can play a determining role in the way teachers are able to provide true evidence of applied competence (§5.5). These findings strengthened the assumption that the real value of a learning portfolio in a DL programme may lie in the *process* rather than in the portfolio of evidence *(output)* as illustrated by the diagram in Fig. 6.2. In this model design features such as a *learning journal* and *portfolio of evidence* guide teachers in developing a reflective and inquiry approach to practice during all phases of the programme (illustrated by the blue line and arrows), as well as sustaining such an approach to teaching after completion of the programme.

Implementing a mentoring system whereby teachers are guided in the application of knowledge in practice during and after the programme implementation would greatly contribute to sustained applied competence in practice. Such a social approach to the learning process will further guide teachers to involve themselves in critical reflection with a peer and thereby develop a reflective approach to practice. Embracing a critical reflective stance towards their own practice will serve as motivation to continuously revise their strategies based on these reflections and thereby not only take responsibility for their own professional development as lifelong learners but also to act as change agents in their schools.

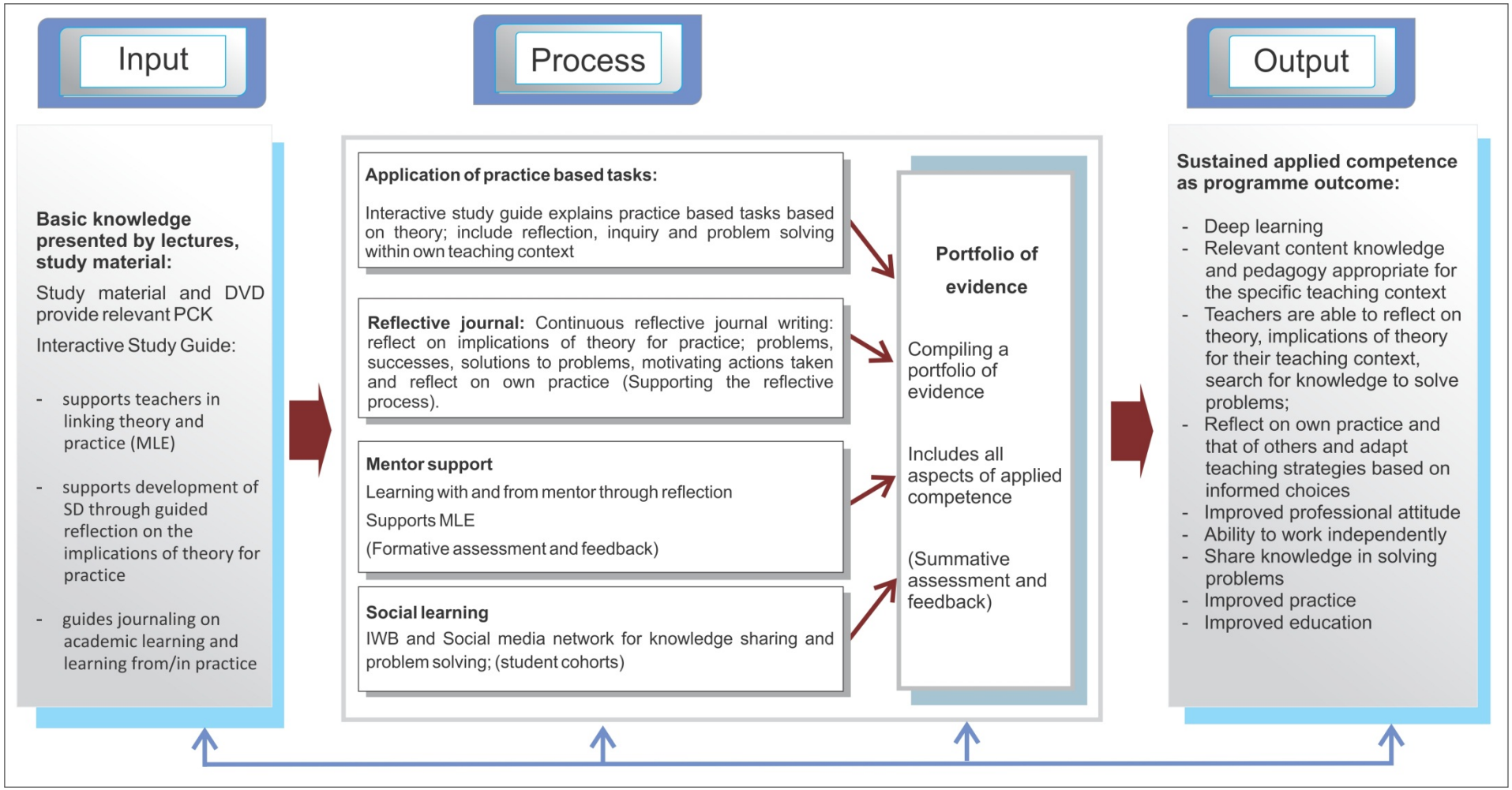

Fig. 6.2: Process model for a practical component (adapted from Yasin et al., 2012, p. 3838)

The focus on the *process* does not negate the value of the learning portfolio as such since compiling of the portfolio serves as an important design feature which guides the process while also providing an opportunity for formative feedback and reflection on own learning. The *input* includes relevant PCK as grounding for the practical component and guidance with regard to self-directed practice. Teachers should be convinced of the value of reflective and inquiry-based practice as well as their roles as autonomous teachers. Journaling should start with academic learning, where teachers are guided to reflect on the implications of theory for their specific teaching context, and on ways they could overcome barriers by implementing theory in practice. During the process teachers should be guided in the application of portfolio tasks based on theory, as well as in reflection on practice through keeping reflective journals. An experienced and qualified mentor should further support the teacher during the learning process through collaboration, peer reflection, and formative feedback on strengths and weaknesses.

The IWB and social networks could be implemented to further support interaction and sharing of knowledge and experiences. Reflective journals, together with portfolio tasks as applied in practice, should be compiled in a portfolio of evidence for summative assessment. The aim of such a practical component as part of a DL programme for Foundation Phase teachers is to provide stronger support for sustained applied competence as programme outcome, including deep learning that equips autonomous teachers to make informed choices with regards to best practice for their specific teaching context. A reflective journal as part of the portfolio of evidence will also ensure a more reliable summative assessment of applied competence by accommodating the teaching context.

6.5 CONTRIBUTION OF THE STUDY TO THE KNOWLEDGE FIELD OF EFFECTIVE DL PROGRAMME DESIGN AIMED AT APPLIED COMPETENCE OF FOUNDATION PHASE TEACHERS

In line with the definition of Mertens (2009, p. 1) this implementation evaluation determined the merit, worth, and value of a practical component added to a revised

version of the Foundation Phase ACE programme to inform decision-making about DL professional development programmes for Foundation Phase teachers. Although this study focussed on a unique case within a NIC, component evaluation has the potential for greater generalizability and more cross-programme comparisons than whole programme evaluations (Bickman, 1985, as cited by Patton, 2008, p. 326) (§1.6.1). Findings could therefore be meaningful to a wider community.

The study firstly contributed by providing a model for future programme design with specific focus on ways to support the applied competence as part of the professional development of teachers in a developing context. This model is explicated in Section 6.4.2.

The study further contributed by providing insight into the significance of the approach used for programme implementation evaluation. The study deploys a wide range of interconnected interpretive practices to better understand the way a practical programme component supports teacher applied competence since each practice affects the outcomes in a different way. Although quantitative methods were also used to gather descriptive statistical data in support of the qualitative data, the evaluation of the practical component of the programme mainly relied on the voices of the participants regarding their profiles, teaching contexts, expectations for and experiences of the programme. Determining the profiles and teaching contexts allowed me to determine the value of the practical component of the DL programme in terms of providing in the specific needs of the target population.

The teacher profile and teaching context play important roles in the identification of the teachers' expectations and their experiences with regards to the programme, as well as the evaluation of the way the portfolio provides evidence of applied competence. By means of constant comparison all the findings were thus brought into perspective of the teacher profile and teaching context of the teachers who mostly work in challenging circumstances. Comparing teacher expectations with teacher experiences further provided valuable insight into the way the programme addressed the teachers' expectations which are viewed as an indication of their learning needs.

6.6 ASPECTS FOR FURTHER EXPLORATION

The following aspects which emerged from this study need further exploration:

- A meaningful mentor system to support teachers enrolled for DL programmes. The NWU and other HEIs are currently training several teachers as mentors. Should government support such a system through acknowledging the contribution of mentor-teachers' for promotion purposes it could serve as motivation for teachers to act as mentors. Such a sophisticated blend of top-down and bottom-up strategies are required for educational reform (Fullan, 1994) (§2.2.1.2)
- Involving teachers in the design of a PDD through discussions on their professional learning needs, their preferred learning styles and how PDPs should accommodate their teaching contexts
- The value and focus of ICT such as audio-visual material included in a DL programme to support applied competence needs further investigation
- Strategies to support SD through guiding teachers in inquiry and deeper levels of reflection through the learning portfolio
- Authentic assessment of applied competence in a DL programme, including consistent assessment of applied competence through a learning portfolio
- The viability of a cohort-based model (such as implemented in Canada) for greater collaboration between teachers and as a way to diminish feelings of isolation often experienced by teachers enrolled in DL programmes
- The design and implications of an e-portfolio as option for teachers to provide evidence of applied competence as outcome of a DL programme
- The implementation of the IWB and social networks to support reflective practice in teachers enrolled in a DL programme
- The feasibility of a partnership between HEI, DoE, and school management to support applied competence in teachers enrolled in DL programmes

6.7 LIMITATIONS OF THIS STUDY

Theoretical limitations as well as limitations exclusive to this study need mentioning. A limited body of scholarship within the field of applied competence in a DL

programme in the South African context resulted in a broad focus of this study. The study lays the foundation for future more focused studies in this field.

Since the revised Foundation Phase ACE programme was part of a bursary project, the data collection and programme started simultaneously. Collecting data on teacher competence before the impact of the programme was thus not possible. Applied competences as reported after completion of the programme can thus not solely be ascribed to the practical component. However, since the study set out to hear the teachers' voices on the way the programme supported their applied competence, the data collected from them provided insights into the value of the programme as experienced by the teachers. Multiple data sources further strengthened the trustworthiness of the findings with regards to the value of the programme by providing different angles to the phenomenon.

The dominant focus on LSEN as part of the revised programme could have detracted from the focus on the central problem namely supporting teacher applied competence in a DL programme. However, the strong appreciation for support in all areas of education strengthens the case for the way the programme supported applied competence as programme outcome, which included the much needed competence to support LSEN.

The practical component was designed by NWU lecturers based on the requirements set by the DBE, namely to support teachers' applied competence with specific focus on their competence to support LSEN. Although previous research findings guided programme designers with regards to the learning needs of teachers, the teachers were not included in the design process. Consulting teachers in future programme design will provide insight into their specific learning needs and accommodate their specific teaching contexts.

6.8 CONCLUSION

Concerns raised by Shulman (1987, p. 6) are reiterated by Opfer and Pedder (2011, p. 376) regarding the knowledge base in which teacher education is grounded. These authors maintain that researchers employ simplistic conceptualisations of teacher professional learning that fail to consider how learning is embedded in professional

lives and the working conditions of the teacher. The impact of working conditions on professional development of under - or unqualified teachers employed in poor socio-economic environments may have a detrimental effect on the standard of education if professional development programmes negate the personal and situated aspects of the teacher.

The literature further indicates the important role of PCK, SD, a professional attitude, and the application of knowledge in practice as core elements of applied competence. Teacher education programmes should therefore support the development of these competences while at the same recognising teacher profiles and teaching contexts. Although the findings confirm the value of a practical component as part of a DL programme aimed to support the development of applied competence of Foundation Phase teachers, the implementation evaluation also indicated weaknesses of such a practical component which could serve as valuable guidelines for programme developers.

The use of multiple data collecting methods provided different perspectives on the problem investigated. Supporting and contradicting data were interpreted through inductive and deductive reasoning to come to logical conclusions regarding the way the programme supported the applied competence of practising Foundation Phase teachers. While the qualitative data strongly concurs regarding the value of the programme in supporting applied competence, not all the elements of applied competence are reflected in the learning portfolios. The findings on relevant prior experience and prior qualifications as part of the teacher profiles also did not reflect in all of the learning portfolios - which often did not meet the required standards.

Strengths and weaknesses of the practical component identified through the study were used as basis for a proposed model to support applied competence in a DL programme implemented in a developing context. Apart from the learning portfolio and audio-visual material which proved to support the development of applied competence, this model suggests the inclusion of a reflective journal and mentor guidance to strengthen the sustainability of applied competence as programme outcome. These design features are believed to enhance the meaningfulness of the learning process leading to deeper learning and sustained outcomes in practice.

Although the findings strongly endorse the value of the practical component in supporting applied competence, further follow-up programmes may be necessary to ensure that teachers are able to apply this new knowledge in sustainable ways in practice. The realisation of SD in practice may vary from situation to situation, and therefore orientation, support, and guidance may be required to ensure sustained SD of teachers after completion of the programme. The way in which a DL programme accommodates the diverse languages of practising teachers enrolled in the programme will further influence the way they experience the programme to support their applied competence. The role of language diversity as barrier to the development of applied competence in a DL programme should be explored in order to find ways to support teachers from diverse cultural groups.

Where Foundation Phase teachers who are not exposed to relevant or quality classroom practice, and where programme design does not support critical reflection on effective teaching, teachers may miss out on valuable opportunities for the development of sustainable applied competence. Future programmes that support teachers to reflect on their own practice and that of others, to identify strong and weak areas, and to find alternative strategies and resources to improve their practices whenever necessary, will contribute to the development of autonomous teachers. These teachers will ultimately be equipped to make a difference in education through sustainable applied competence in practice. Since various factors hamper the support for the development of applied competence in a DL programme, collaboration between all the stakeholders namely the HEI, DoE, and school management could contribute to the development of applied competence in South African teachers.

REFERENCE LIST

Adams, R. D. (2010). *A case study of professional development in an online environment: the experiences of a group of elementary teachers.* (Doctor of Philosphy Thesis), New Mexico State University, Las Cruces.

Aedo, C. (2002). The value of experience in education: John Dewey. http://caedofu.tripod.com/cv/dee.pdf

Ahmad, I., Said, H., Zeb, A., Sihatullah., & Ur Rehman, K. (2013). Effects of professional attitude of teachers on their teaching performance: Case of Government Secondary School teachers in Malakand Region, Khyber Pakhtunkhwa, Pakistan. *Journal of Educational and Social Research, 3*(1), 25-31. doi: 10.5901/jesr.2013.v3n1p25

Aldridge, J., Fraser, B., & Ntuli, S. (2009). Utilising learning environment assessments to improve teaching practices among in-service teachers undertaking a distance-education programme. *South African Journal of Education, 29*, 147-170.

Aluko, R. (2009). The impact of an Advanced Certificate in Education (ACE) program on the professional practice of graduates. *International Review of Research in Open and Distance Learning, 10*(4). http://www.irrodl.org/index.php/irrodl/article/view/617/1315

Amel, S. H. (n.d.). Reflection on students' self-efficacy expectancies: Paving the path to better achievement outcomes in Higher Education. Retrieved 12 November 2014 http://www.oecd.org/edu/imhe/43977414.pdf

Arnold-Grine, L. E. (2007). *Laboratory schools: a critical link in facilitating and enhancing preschool teacher education.* (PhD Presented in partial fulfillment of the requirements for the degree Doctor of Philosophy), The Ohio State University, Ohio.

Ash, S. L., & Clayton, P. H. (2009). Generating, deepening, and documenting learning: The power of critical reflection in applied learning. *Journal of Applied Learning in Higher Education, 1*, 25-48.

Asianinfo.org. (2013). Historical review of Korea's education. Retrieved 26 August, 2013, from http://www.asianinfo.org/asianinfo/korea/education.htm#Historical

Asunka, S. (2008). Online learning in Higher Education in Sub-Saharan Africa: Ghanaian University students' experiences and perceptions. *International Review of Research in Open and Distance Learning, 9*(3). http://www.irrodl.org/index.php/irrodl/article/viewFile/586/1133

ATLAS.ti Scientific Software Development GmbH. (2011). Atlas.ti Qualitative Data Analysis Berlin: QUARC.

Ball, A. F. (2000). Preparing teachers for diversity: lessons learned from the US and South Africa. *Teacher and Teacher Education, 16*(4), 491-509.

Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Phsychologist, 28*(2), 117-148.

Banks, F., Moon, B., & Wolfenden, F. (2009). *New modes of communication technologies and the reform of open and distance learning programmes: A response to the global crisis in teacher education and training.* Paper presented at the 23rd ICDE World Conference on Open and Distance Learning, 8-10 June 2009, Maastricht, The Netherlands.

Beaudin, B. P., & Quick, D. (1995). Experiential learning: Theoretical underpinnings. Colorado: High Plains Intermountain Center for Agricultural Health and Safety (HI-CAHS).

Beck, C., Hart, D., & Kosnik, C. (2002). The teaching standards movement and current teaching practices. *Canadian Journal of Education, 27*(2 & 3), 175-194.

Beck, C., & Kosnik, C. (2012). From cohort to community in a preservice teacher education program. In J. Kitchen & T. Russell (Eds.), Canadian perspectives on the self-study of teacher education practices. Canadian Research in Teacher Education: A Polygraph Series (Vol. 2, pp. 47-72). Ottowa, Canada: Une Publication De. Retrieved from www.csse-scee.ca/docs/CATE_Book_on_Self-Study_(2)_(2).pdf.

Bell, A., Kelton, J., McDonagh, N., Mladenovic, R., & Morrison, K. (2011). A critical evaluation of the usefulness of a coding scheme to categorise levels of reflective thinking. *Assessment & Evaluation in Higher Education, 36*(7), 797-815. doi: 10.1080/02602938.2010.488795

Berg, B. L. (2004). *Qualitative research methods for the social sciences* (5th ed.). Boston: Pearson.

Berrill, D. P., & Addison, E. (2010). Repertoires of practice: Re-framing teaching portfolios. *Teaching and Teacher Education, 29*, 1178-1185.

Biggs, J. B. (1987a). Student aproaches to learning and studying - Research monograph (pp. 153). Australia: Australian Council for Educational Research, Hawthorn.

Biggs, J. B. (1987b). Study process questionnaire manual. Melbourne: Australian Council for Education Research.

Biggs, J. B. (1989). Approaches to the enhancement of tertiary teaching. *Higher Education Research & Development, 8*(1), 7-25.

Biggs, J. B. (2001). The reflective institution: Ensuring and enhancing the quality of teaching and learning. *Higher Education 40*, 221-238.

Biggs, J. B. (2003). *Teaching for quality learning at university - What the student does* (2nd ed.). Berkshire: Open University Press.

Biggs, J. B., & Tang, C. (2007). *Teaching for quality learning at university* (3rd ed.). Berkshire: Open University Press Imprint.

Binns, F., & Wrightson, T. (2006). Teacher education at a distance: Impact on development in the community. *Researching the Issues, 64*, 60.

Boeije, H. (2002). A purposeful approach to the constant comparative method in the analysis of qualitative interviews. *Quality & Quantity: International Journal of Methodology, 36*, 391-409.

Bof, A. M. (2004). Distance learning for teacher training in Brazil. *The International Review of Research in Open and Distance Learning, 5*(1). http://www.irrodl.org/index.php/irrodl/article/view/172/387

Bolhuis, S. (2003). Towards process-oriented teaching for self-directed lifelong learning: a multidimensional perspective. *Learning and Instruction, 13*(3), 327-347. doi: 10.1016/S0959-4752(02)00008-7

Boud, D., Keogh, R., & Walker, D. (1996). Promoting reflection in learning - A model. In R. Edwards, A. Hanson & P. Raggatt (Eds.), *Boundaries of adult learning* (pp. 32-56). London: Routledge.

Boyd, D. J., Grossman, P. L., Lankford, H., Loeb, S., & Wyckoff, J. (2009). Teacher preparation and student achievement. *Education Evaluation and Policy Analysis, 31*(4), 416-440. doi: 10.3102/0162373709353129

Boyd, E. M., & Fales, A. W. (1983). Reflective learning: Key to learning from experience. *Journal of Humanistic Psychology, 23*(2, Spring), 99-117.

Bransford, J., Darling-Hamond, L., & LePage, P. (2005). Introduction. In L. Darling-Hammond & J. Bransford (Eds.), *Preparing teachers for a changing world - what teachers should learn and be able to do.* San Francisco: Jossey-Bass.

Broad, K., & Evans, M. (2006). A review of literature on professional development content and delivery modes for experienced teachers. *Initial Teacher Education Program.* Retrieved 20 November, 2014, from http://www.oise.utoronto.ca/ite/UserFiles/File/AReviewofLiteratureonPD.pdf

Broekkamp, H., & van Hout-Wolters, B. (2007). The gap between educational research and practice: A literature review, symposium, and questionnaire. *Educational Research and Evaluation, 13*(3), 203-220. doi: 10.1080/13803610701626127

Brown, C. (2008). Why are Cuben schools better? *Inter-American Dialogue* Retrieved 24 June, 2014, from http://www.thedialogue.org

Brownlee, J., & Berthelsen, D. (2006). Personal epistemology and relational pedagogy in early childhood teacher education programs. *Early Years: An International Journal of Research, 26*(1), 17-29.

Burns, J. Z., & Schaefer, K. (2003). Informal learning: An exploratory study of unstructured learning experiences of T&I teachers enrolled in an alternative teacher education program. *Journal of Industrial Teacher Education, 40*(3). http://scholar.lib.vt.edu/ejournals/JITE/v40n3/burns.html

Burrell, G., & Morgan, G. (1979). *Sociological paradigms and organisational analysis - elements of the sociology of corporate life*. Aldershot: Ashgate.

Bush, T., Kiggundu, E., & Moorosi, P. (2011). Preparing new principals in South Africa: The ACE : School Leadership programme. *South African Journal of Education, 31*(1).

Butcher, N., Latchem, C., Mawoyo, M., & Levey, L. (2011). Distance education for empowerment and development in Africa. *Distance Education, 32*(2), 149-158. doi: 10.1080/01587919.2011.584844

Campbell, A. (2006). *The teaching strategies employed by teachers to support learners with learning difficulties in mainstream classes.* (Masters Degree), Cape Peninsula University of Technology. Retrieved from http://digitalknowledge.cput.ac.za/xmlui

Candy, P. C. (1991). *Self-direction for lifelong learning: A comprehensive guide to theory and practice*. San Francisco: Jossey-Bass Publishers.

Candy, P. C. (2004). *Linking thinking self-directed learning in the digital age* (pp. 344). Retrieved from http://vital.new.voced.edu.au/vital/access/services

Carlson, H. L. (1999). From practice to theory: A social constructivist approach to teacher training. *Teachers and Teaching: Theory and practice, 5*(2), 203-218.

Carnoy, M. (2007). Cuba's academic advantage. *Berkeley review of Latin American studies*(Fall), 39-41.

Carnoy, M. (2014, December 24). Cuba's biggest export is teachers, doctors - not revolution, *Reuters*. Retrieved from http://blogs.reuters.com/great-debate/2014/12/23/cubas-biggest-export-are-teachers-doctors-not-revolution/

Casey, C. E., & Childs, R. A. (2007). Teacher education program admission criteria and what beginning teachers need to know to be successful teachers. *Canadian Journal of Educational Administration and Policy*(67).

Center on International Education Benchmarking. (2013, 21 March). Korea. *Learning from the world's high performing education system.* Retrieved 6 June, 2014, from http://www.ncee.org/programs

Chalmers, D. (2007). A review of Australian and international quality systems and indicators of learning and teaching (Vol. 1.2, pp. 122). Australia: Carrick Institute for Learning and Teaching in Higher Education.

Chang, S. L., & Chang, Y. (2008). Using online concept mapping with peer learning to enhance concept application. *The Quarterly Review of Distance Education, 9*(11), 17-27.

Chen, D., Lumpe, A., & Bishop, D. (2013). *Assessment of teacher candidate reflection in e-portfolios*. Paper presented at the 2013 AACE EdMedia Victoria, British Columbia. www.aace.org/conf/edmedia/submission

Cheng, M. M. H., Cheng, A. Y. N., & Tang, S. Y. F. (2010). Closing the gap between the theory and practice of teaching: Implications for teacher education programmes in Hong Kong. *Journal of Education for Teaching, 36*(1), 91-104. doi: 10.1080/02607470903462222

Chetcuti, D., Buhagiar, M. A., & Cardona, A. (2011). The professional development portfolio: Learning through reflection in the first year of teaching. *Reflective Practice, 12*(1), 61-72.

Ciminelli, M. R. (2011). A model for developing pre-service teacher reflection: An interactive intervention strategy. *AILACTE, 8*(Fall), 1-14.

Clark, L. A., & Watson, D. (1995). Constructing validity: basic issues in objective scale development. *Psychological Assessment, 7*(3), 309-319.

Cochran-Smith, M., & Lytle, S. L. (1999). Relationships of knowledge and practice: Teacher learning in communities. *Review of Research in Education, 24*, 249-305.

Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education* (6th ed.). Abingdon, Oxon: Routledge.

Constantino, P. M. (2009). *Developing a professional teaching portfolio: a guide for success* (3rd ed.). Upper Saddle River, N.J.: Allyn & Bacon/Pearson.

Cook-Sather, A. (2002). Authorizing students' perspectives: Toward trust, dialogue, and change in education. *Educational Researcher, 31*(4), 3-14.

Council on Higher Education. (2004). Advice to the Minister of Education on aspects of distance education provision in South African Higher Education. Pretoria: South African Department of Education.

Council on Higher Education. (2011). *Work-integrated learning: Good practice guide*. (12). Pretoria: Council on Higher Education Retrieved from http://www.che.ac.za/sites/default/files/publications/Higher_Education.

Creed, C. (2001). *The use of distance education for teachers*. Report. International Research Foundation for Open Learning. United Kingdom. Retrieved from http://www.irfol.ac.uk/publications/pdfs/Mappingreport.pdf

Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches* (2nd ed.). Thousands Oaks: Sage.

Creswell, J. W. (2008). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (3rd ed.). Upper Saddle Creek, NJ: Pearson Education.

Creswell, J. W. (2009). *Research Design - Qualitative, quantitative, and mixed method approaches* (3rd ed.). Los Angeles: Sage.

Croes, S., Day, L., Harris, S., Leonard, M., & Tims, R. (2003). Best practices manual for teachers, administration, and staff. *E-education in the Global Environment*, 67. www.ibrarian.net/navon/paper/Best_Practices_Manual

Cruz-Taura, G. (2003). Rehabilitating education in Cuba: Assessment of conditions and policy recommendations. University of Miami: Insitution for Cuban and Cuban-American studies.

Curzon-Hobson, A. (2010). Higher Learning and the Critical Stance. *Studies in Higher Education, 28:2*(2), 201-212. doi: 10.1080/0307507032000058091

Daniel, J. (2010, 27 March 2010). *Distance education: Ends, means, opportunities, threats.* Paper presented at the The Aga Khan Development Network - Higher Education Forum, Vancouver.

Darling-Hammond, L. (2010a). Steady work: Finland builds a strong teaching and learning system. *Rethinking Schools, 24*(4). http://www.rethinkingschools.org/restrict.asp?path=archive/24_04/24_04_finland.shtml

Darling-Hammond, L. (2010b). Teacher education and the American future. *Journal of Teacher Education, 61*(1-2), 35-47. doi: 10.1177/0022487109348024

Darling-Hammond, L., Austin, K., Cheung, M., & Martin, D. (n.d.). *Thinking about thinking: Metacognition*. The Learning Classroom. Stanford University School of Education. Retrieved from http://snow.utoronto.ca/Learn2/mod2/index.html

Darling-Hammond, L., Chung Wei, R., Andree, A., Richardson, N., & Orphanos, S. (2009). Professional learning in the learning profession: A status report on teacher development in the Uited States and abroad (pp. 36). Dallas: National Staff Development.

Darling-Hammond, L., Hammerness, K., Grossman, P., Rust, F., & Shulman, L. (2005). The design of teacher education programs. In L. Darling-Hammond & J. Bransford (Eds.), *Preparing teachers for a changing world - what teachers should learn and be able to do* (pp. 390-441). San Francisco: Jossey-Bass.

Darling-Hammond, L., & Snyder, J. (2000). Authentic assessment of teaching in context. *Teaching and Teacher Education, 16*, 523-545.

De Clercq, F. (2013). Professionalism in South African education: The challenges of developing teacher professional knowledge, practice, identity and voice. *Journal of Education, 57*, 31-54.

Dede, C., Ketelhut, D. J., Whitehouse, P., Breit, L., & McCloskey, E. M. (2009). A research agenda for online teacher professional development. *Journal of Teacher Education, 60*(8). doi: 10.1177/0022487108327554

Denzin, N. K., & Lincoln, Y. S. (1994). *Handbook of qualitative research*. Thousand Oaks: Sage Publications.

Denzin, N. K., & Lincoln, Y. S. (2005). Introduction - The discipline and practice of qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (3rd ed.). Thousand Oaks, California: Sage Publications.

Desimone, L. M., Smith, T. M., & Ueno, K. (2006). Are teachers who need sustained, content-focused professional development getting it? An administrator's dilemma. *Educational Administration Quarterly, 42*(2), 179-215. doi: DOI: 10.1177/0013161X04273848

Dewey, J. (1897). My pedagogic creed. *The School Journal, LIV*(3), 77-80.

Dewey, J. (1916). *Democracy and education: An introduction to the philosophy of education*: The Free Press: New York.

Dewey, J. (1938). *Experience and Education*. New York: Collier Books.

Dewey, J. (2008). Democracy and education. In D. Reed & D. Widger (Eds.). Retrieved from http://www.gutenberg.org/8/5/852/ (Release Date: July 26, 2008 [EBook #852]).

Dickson, J., Fleet, A., & Watt, H. M. G. (2000). Success or failure in a core university unit: What makes the difference? *Higher Education Research and Development, 19*(1), 59-73.

Dirkx, J. M. (2001). The power of feelings: Emotion, imagination, and the construction of meaning in adult learning. *New Directions for Adult and Continuing Education, 89*(Spring), 63-72.

Dladla, N., & Moon, R. (2002). *Challenging the assumptions about teacher education and training in Sub-Saharan Africa: A new role for open learning and ICT.* Paper presented at the Pan-Commonwealth Forum on Open Learning, International Convention Centre, Durban, South Africa, 29 July to 2 August.

Dondi, C., & Moretti, M. (2002). Teacher training. In H. H. Adelsberger, B. Collis & J. M. Pawlowski (Eds.), *Handbook of information technologies for education and training* (pp. 365-376). Heidelberg: Springer-Verlag.

Du Plessis, E. C., Marais, P., Van Schalkwyk, A., & Weeks, F. (2010). Adapt or die: The views of Unisa student teachers on teaching practice at schools. *Africa Education Review, 7*(2), 323-341. doi: 10.1080/18146627.2010.515401

Edwards, S. (2007). From developmentalconstructivism to sociocultural theory and practice an expansive analysis of teachers' professional learning in early childhood education. *Journal of Early Childhood Research, 5*(1), 83-106. doi: 10.1177/1476718X07072155

Erkilic, T. A. (2008). Importance of educational philosophy in teacher training for educational sustainable development. *Middle East Journal of Scientific Research, 3*(1), 1-8.

European Union. (2008). The European qualifications framework for lifelong learning (EQF) (pp. 15). Luxembourg: Office for Official Publications of the European Communities.

Evans, L. (2008). Professionalism, professionality and professional development. *British Journal of Educational Studies, 56*(1), 20-38.

Farr Darling, L. (2001). Portfolio as practice: The narratives of emerging teachers. *Teaching and Teacher Education, 17*, 107-121.

Ferlazzo, L. (2012). Eight things skilled teachers think, say, and do. *Educational Leadership, 70*(2). http://www.ascd.org/publications/educational

Feuerstein, R., Feuerstein, R. S., Falik, L., & Rand, Y. (2006). Creating and enhancing cognitive modifiability: The Feuerstein Instrumental Enrichment

Program. *Making Thinking Connections.* Retrieved 23 March, 2014, from http://www.thinkingconnections.org/theory/MLE.shtml

Finnish National Board of Education. (2014). Education system - equal opportunities to high quality education. Retrieved 5 May, 2014, from http://www.oph.fi/english/education_system

Fischer, D., & Van Andel, L. (2002). *Mentoring in teacher education - Towards innovative school development*. Paper presented at the 27th Annual Conference of ATEE, Warsaw/Poland.

Fishman, S. M., & McCarthy, L. P. (1998). *John Dewey and the challenge of classroom practice*. New York: Teachers College Press.

Francis, A., & Flanigan, A. (2012). Self-directed learning and higher education practices: Implications for student performance and engagement. *MountainRise: The International Journal of the Scholarship of Teaching and Learning, 7*(3), 1-18.

Fraser, W. J. (2001). Let's revisit competence-based teacher education. *Educare, 30*(1), 50-72.

Fresen, J. W., & Hendriks, J. (2009). Designing to promote access, quality, and student support in an Advanced Certificate for rural teachers in South Africa. *The International Review of Research in Open and Distance Learning, 10*(4). http://www.irrodl.org/index.php/irrodl/article/view/631/1322

Friese, S. (2011). *ATLAS.ti 6 Concepts and functions*. ATLAS.ti GmbH. Berlin.

Friese, S. (2012). ATLAS.ti 7 Quick tour revision 18. Retrieved 12 August 2014, from QUARC Consulting http://www.atlasti.com

Fullan, M. G. (1994). Coordinating top-down and bottom-up strategies for educational reform. *Systemic Reform: Perspecitives on Personalizing Education September*, 7. http://www.michaelfullan.ca/media/13396035630.pdf

Gabela, R. V. (2004). What makes a good teacher? In R. Balfour, T. Buthelezi & C. Mitchell (Eds.), *Teacher development at the centre of change* (pp. 55-57). Durban: KZNDE Teacher development directorate.

Galluzzo, G. R. (2005). Performance assessment and renewing teacher education - The possibilities of the NBPTS standards. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas, 78*(4), 142-145.

Gambhir, M., Broad, K., Evans, M., & Gaskell, J. (2008). Characterizing initial teacher education in Canada: Themes and issues. *Report prepared for the International Alliance of Leading Education Institutes*. Toronto.

Garet, M. S., Porter, A. C., Desimone, L., Birman, B. F., & Yoon, K. S. (2001). What Makes Professional Development Effective? Results from a National Sample of Teachers. *American Educational Research Journal, 38*(4), 915-945.

Gasperini, L. (2000). The Cuban education system: Lessons and dilemmas *Country studies, education reform and management publication series* (Vol. 1): World Bank.

Gay, L. R., Mills, G. E., & Airasian, P. W. (2011). *Education research - Competencies for analysis and applications* (10th ed.). Boston: Pearson.

Gijbels, D., Coertjens, L., Vanthournout, G., Struyf, E., & Van Petegem, P. (2009). Changing students' approaches to learning: A two-year study within a university teacher training course. *Educational Studies, 35*(5), 503-513.

Gomez, A. S. (2008). The role of education in Cuba's future. Retrieved 13 September, 2013, from http://www.brookings.edu/~/media/gomez/08_cuba_gomez.pdf

Gorard, S., & Taylor, C. (2011). *Combining methods in educational and social research*. Berkshire: Open University Press.

Gore, J. M., Griffiths, T., & Ladwig, J. G. (2004). Towards better teaching: Productive pedagogy as a framework for teacher education. *Teacher and Teacher Education, 20*(2004), 375-387. doi: 10.1016/j.tate.2004.02.010

Government Communication and Information System. (2010). Major shake-up for SA education. 10 Nov 2010.Retrieved April 13, 2011, from www.buanews.gov.za

Granlund, R., Berglund, E., & Erikson, H. (2000). Designing web-based simulation for learning. *Future Generation Computer Systems, 17*, 171-185.

Grant, C. (2004). Reflective journals: A strategy for developing reflective practice. In R. Balfour, T. Buthelezi & C. Mitchell (Eds.), *Teacher development at the centre of change* (pp. 59-70). Durban: KZNDE Teacherdevelopment Directorate and Faculty of Education, UKZN.

Grant, C., & Zeichner, K. (1984). On becoming a reflective teacher. *Socialization and Progress*, 103-114. http://www.d11.org/ProfessionalDevelopment/Induction

Green, N. C., Edwards, H., Wolodko, B., Stewart, C., Brooks, M., & Littledyke, R. (2010). Reconceptualising higher education pedagogy in online learning. *Distance Education, 31*(3), 257-273.

Green, W. (2012, 7 February 2012). *Policy on the Minimum Requirements for Teacher Education Qualifications.* Paper presented at the Teachers Upfront Colloquium, Wits School of Education, Johannesburg.

Greig, L., McLuckie, J., Payne, F., & Williams, B. (2002). Collaborative learning at a distance: Electronic conferencing in the professional training of preschool education specialists. Retrieved 3 February, 2008, from http://www.harworthpress.com

Griffiths, T., & Guile, D. (2003). A connective model of learning: The implications for work process knowledge. *European Educational Research Journal, 2*(1), 56-73.

Grossman, P., & McDonald, M. (2008). Back to the future: Directions for research in teaching and teacher education. *American Educational Research Journal, 45*(1), 184-205. doi: 10.3102/0002831207312906

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 105-117). London: Sage.

Guba, E. G., & Lincoln, Y. S. (2005). Paradigmatic controversies, contradictions and emerging confluences. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage Handbook of qualitative research* (3rd ed., pp. 191-215). Thousands Oaks, Cal.: Sage Publications.

Guglielmino, L. M. (2013). The case for promoting self-directed learning in formal educational institutions. *SA-eDUC Journal, 10*(2). www.nwu.ac.za/webfm_send/87883

Gunawardena, C. N., & LaPointe, D. (2007). Cultural dymanics of online learning. In M. G. Moore (Ed.), *Handbook of distance education* (2nd ed., pp. 593-607). New Jersey: Lawrence Erlbaum Associates, Inc.

Guo, S., & Pungur, L. (2008). Exploring teacher education in the context of Canada and China: A cross-cultural dialogue. *Frontiers of Education in China, 2*(2), 246-269. doi: 10.1007/s11516-008-0016-4

Haggard, D. L., Dougherty, T. W., Turban, D. B., & Wilbanks, J. E. (2011). Who is a mentor? A review of revolving definitions and implications for research. *Journal of Management, 37*(280). doi: 10.1177/0149206310386227

Hall, E., Altman, M., Nkomo, N., Peltzer, K., & Zuma, K. (2005). Potential attrition in education: The impact of job satisfaction, morale, workload and HIV/AIDS. Retrieved June 2014, 2014, from http://www.hsrcpress.ac.za

Hamilton, J., & Tee, S. (2013). Blended teaching and learning: A two-way systems approach. *Higher Education Research & Development, 32*(5), 748-764. doi: 10.1080/07294360.2012.711301

Hancock, L. (2011). Why are Finland's schools successful? The country's achievements in education have other nations doing their homework. *Smithsonian magazine,* (September). http://www.smithsonianmag.com/people-places

Hargreaves, D. H. (2007). Teaching as a research-based profession: Possiblities and prospects. In M. Hammersley (Ed.), *Educational research and evidence-based practice* (pp. 3-17). London: Sage.

Hatton, N., & Smith, D. (1994). Reflection in teacher education: Towards definition and implementation. *Teacher and Teacher Education, 11*(1), 33-49.

Hellman, J. A. (2003). The riddle of distance education - promise, problems and applications for development. Paper prepared for the United Nations Research Institute for Social Development Programme. Retrieved 29 February, 2009, from http://www.unrisd.org

Henderson, K., Napan, K., & Monteiro, S. (2004). *Encouraging reflective learning: An online challenge*. Paper presented at the 21st ASCILITE Conference: Beyond the comfort zone, Perth. http://www.ascilite.org.au/conferences/perth04/procs/henderson.html

Herrup, K. (2011). What we can learn from Canadians. *The great debate.* Retrieved 11 April, 2013, from http://blogs.reuters.com/great-debate/2011/08/24/what-we-can-learn-from-canadians/

Hertert, L., & Teague, J. (2003). Narrowing the achievement gap: A review of research, policies, and issues. *Palo Alto, CA: EdSource, Inc.* http://eric.ed.gov/?id=ED473724

Hill, C. (2012). Context: The difference between success or failure in distance learning programs. In C. Stover (Ed.), A Holistic Approach to Supporting Students (pp. 25-27). Madison, US: Magna Publications. Retrieved from http://www.magnapubs.com.

Hillier, Y. (2002). *Reflective teaching in further and adult education*. London: Continuum.

Hirsh, S. (2009). A new definition. (800-727-7288). Retrieved 12 April 2012, from National Staff Develoment Council (US) http://www.nsdc.org

Hornby, A. S. (Ed.) (2010) Oxford (8 ed.). New York: Oxford University Press.

Huckle, J. (2008). Sustainable development. In J. Arthur, I. Davies & C. Hahn (Eds.), *The Sage handbook of education for citizenship and democracy* (pp. 342-354). London: Sage Publications.

Huisman, S., & Edwards, A. (2011). Experiential learning: An exploration of situated and service learning. *AILACTE, 8*(Fall), 15-35.

Hülsmann, T. (2004). Low cost distance education strategies: The use of appropriate information and communication technologies. *International Review of Research in Open and Distance Learning, 5*(1). http://www.irrodl.org/index.php/irrodl/article/view/175/257

Imhof, M., & Picard, C. (2009). Views on using portfolio in teacher education. *Teaching and Teacher Education, 25*, 149-154.

Ingersoll, R. M., & Strong, M. (2011). The impact of induction and mentoring programs for beginning teachers: A critical review of the research. *Review of Educational Research, 81*(2), 201-233.

International Monetary Fund. (2011). World economic outlook (WEO) report - tensions from the two-speed recovery: Unemployment, commodities and capital flows. Washington: International Monetary Fund.

Iredale, A. (2012). Down the rabbit-hole: Routinised practices, Dewey and teacher training in the lifelong learning sector. *Higher Education, Skills and Work-based Learning, 2*(1), 54-62.

Jacobs, E., Punt, C., Uchezuba, D., & Bashi, M. (2007). A profile of the Northern Cape Province: Demographics, poverty, income, inequality and unemployment from 2000 till 2007 *The Provincial Decision-Making Enabling Project*

(PROVIDE). Elsenburg, South Africa: The National and Provincial Departments of Agriculture.

Jay, J. K., & Johnson, K. L. (2002). Capturing complexity: A typology of reflective practice for teacher education. *Teacher and Teacher Education, 18*, 73-85.

Johnstone, B. (2008). Cuba's education system: A beacon of light in Latin America facing an uncertain future. *InterActions: UCLA Journal of Education and Information Studies, 4*(2).

Joia, L., A. (2002). Assessing unqualified in-service teacher training in Brazil using knowledge management theory: a case study. *Journal of Knowledge Management, 6*(1), 74-86. http://www.emeraldinsight.com

Jones, I. (2008). *Reflective practice and the learning of health care students.* (PhD), University of Hertfordshire, Hertfordshire.

Kahn, P. (2006). Supporting reflective processes with students: insights from a review of research. *The Higher Education Academy*. www.liv.ac.uk/cllserver/.../REFL_students.pdf

Kangai, C., & Bukaliya, R. (2011). Teacher development through open and distance learning: the case for Zimbabwe. *International Journal on New Trends in Education and Their Implications, 2*(4).

Kansanen, P. (2006). Constructing a research-based program in teacher education - Old research demands and new pathways. In F. K. Oser, F. Achtenhagen & U. Renold (Eds.), *Competence oriented teacher training* (pp. 11-22). Rotterdam: Sens Publisher.

Kanuka, H., & Conrad, D. (2003). The name of the game - why "distance education" says it all. *The Quarterly Review of Distance Education, 4*(4), 385-393.

Keegan, D. (Ed.). (2002). *The Future of Learning: From eLearning to mLearning*. FernUniversitat, Hagen.

Kember, D., Biggs, J., & Leung, D. Y. P. (2004). Examining the multidimensionality of approaches to learning through the development of a revised version of the Learning Process Questionnaire. *British Journal of Educational Psychology, 74*, 261-280.

Kim, E., & Han, Y. (2002). Attracting, developing and retaining effective teachers: Background report for Korea: Korean Educational Development Institute.

Kim, M., & Chin, C. (2011). Pre-service teachers' views on practical work with inquiry orientation in textbook-oriented science classrooms. *International Journal of Environmental & Science Education, 6*(1), 23-37.

King, B. (2003). *Has distance education a future? Keynote presentation*. Paper presented at the 10th Cambridge International Conference on Open and Distance Education 23-26th September , 2003, Cambridge. http://www.vhi.st-edmunds.cam.ac.uk/events/past-events/CDE-conference/CDE-Papers/2003-cde-king

Kitchenham, A., & Chasteauneuf, C. (2009). An application of Mezirow's theory to electronic portfolios. *Journal of Transformative Education, 7*(3), 230-244. doi: 10.1177/1541344610383287

Klenowski, V. (2002). *Developing portfolios for learning and assessment*. Abingdon: RoutledgeFalmer.

Knowles, M. S. (1975). *Self-directed learning: A guide for learners and teachers*. New York: AssociationPress.

Köhler, L., & Rigby, M. (2003). Indicators of children's development: Considerations when constructing a set of national child health indicators for the European Union. *Child: Care, Health and Development, 29*(6), 551-558.

Koole, S., Dornan, T., Aper, L., Scherpbier, A., Valcke, M., Cohen-Schotanus, J., & Derese, A. (2011). Factors confounding the assessment of reflection: A critical review. *BMC Medical Education, 11*(104). doi: 10.1186/1472-6920-11-104

Korthagen, F. A. J. (2001). *Linking practice and theory: The pedagogy of realistic teacher education*. Paper presented at the Annual Meeting of the American Educational Research Association, April 2001, Seattle. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.92.

Korthagen, F. A. J. (2010). Situated learning theory and the pedagogy of teacher education: Towards an integrative view of teacher behavior and teacher learning. *Teaching and Teacher Education, 26*, 98–106.

Korthagen, F. A. J., & Kessels, J. P. A. M. (1999). Linking theory and practice: Changing the pedagogy of teacher education. *JSTOR: Educational Researcher, 28*(4).

Korthagen, F. A. J., Loughran, J., & Russell, T. (2006). Developing fundamental principles for teacher education programs and practices. *Teaching and Teacher Education, 22*(8), 1020-1041. doi: http://dx.doi.org/10.1016/j.tate.2006.04.022

Krebera, C. (1998). The relationships between self-directed learning, critical thinking, and psychological type, and some implications for teaching in higher education. *Studies in Higher Education, 23*(1), 71-86. doi: 10.1080/03075079812331380502

Kruger, C. G. (2010). *'n Evaluering van die NWU GOS-opleidingsprogram vir graad R onderwysers.* (Magister Educationis Programme Evaluation), North-West University, Potchefstroom.

Kruger, C. G., Janse van Rensburg, O., & Els, C. J. (2012). Professional development for Reception year teachers in an ODL developing context. *Progressio, 34*(2), 170-187.

Kruger, C. G., Loubser, A., Greyling, S., & Neethling, M. (2011). *ACE: Professional educator development: Foundtion Phase - Guide for learning portfolio*. Potchefstroom: The Platinum Press

Laerd Statistics. (2015). *Descriptive and Inferential Statistics*. Retrieved from https://statistics.laerd.com/tc.php

Lave, J. (1996). Teaching, as learning, in practice. *Mind, Culture, and Activity 3* (3), 149-164. doi: 10.1207/s15327884mca0303_2

Lea, M. (2000). *The use of open and distance learning in pre-school teacher education (Report prepared for U.S. Department of Education)*. New York: United States Department of Education.

Lee, H. (2004). Understanding and assessing preservice teachers' reflective thinking. *Teaching and Teacher Education, 21*(6), 699-715.

Lee, H. (2005). Understanding and assessing preservice teachers' reflective thinking. *Teaching and Teacher Education, 21*(6), 699-715.

Legon, E. D. (2012, 7 Sept.). Cuban education: A state responsibility, *Havana Times* Retrieved from http://www.havanatimes.org/?p=78108

Ley, K. (2005). *Motivating the distant learner to be a self-directed learner.* Paper presented at the 20th Annual Conference on Distance Teaching and Learning.

Lieberman, A., & Mace, D. (2008). Teacher learning: The key to education reform. *Journal of Teacher Education, 59*(3), 226-234. doi: 10.1177/0022487108317020

Liu, T., & Juang, Y. (2002). *IPAS - Teacher's knowledge management platform for teachers professional development.* Paper presented at the International Conference on Engineering Education, Manchester, U.K.

Lobman, C., Ryan, S., McLauchlin, J., & Ackerman, D. (2004). Educating preschool teachers: Mapping the teacher preparation and professional development system in New Jersey. Retrieved 26 November, 2007, from http://www.fcd_doc/EducationPreschoolTeachers.pdf

Lobman, C., Ryan, S., & McLaughlin, J. (2005). Reconstructing teacher education to prepare qualified preschool teachers: Lessons from New Jersey *Early Childhood Research and Practice, 7*(2). http://ecrp.uiuc.edu/v7n2/lobman.html

Loughran, J. (2002). Effective reflective practice: In search of meaning in learning about teaching. *Journal of Teacher Education, 53*(1, Jan/Feb), 33-43. doi: doi: 10.1177/0022487102053001004

Loughran, J., & Corrigan, D. (1995). Teaching portfolios: A strategy for developing learning and teaching in preservice education. *Teaching & Teacher Education, 11*(6), 565-577.

Loyens, S. M. M., Magda, J., & Rikers, R. M. J. P. (2008). Self-directed learning in problem-based learning and its relationships with self-regulated learning. *Educational Psychology Review, 20*, 411-427. doi: 10.1007/s10648-008-9082

Lumadi, M. W. (2014). Towards a responsive curriculum implementation. *Inaugural lecture.* Retrieved 2 October, 2014, from http://www.unisa.ac.za/news/wp-content/uploads/2014

Lutjens, S. (2000). Educational policy in socialist Cuba: The lessons of forty years of reform. http://www.angelfire.com/pr/red/cuba/educational_policy_in_cuba.htm

Maree, K. (2007). *First Steps in Research*. Pretoria: Van Schaik Publishers.

Maree, K., & Van der Westhuizen, C. (2007). Planning a research proposal. In K. Maree (Ed.), *First Steps in Research* (pp. 23-45). Pretoria: Van Schaik Publishers.

Martinet, M. A., Raymond, D., & Gauthier, C. (2001). *Teacher training: Orientations - Professional competencies*. Québec: Québec Ministry of Education.

Mayring, P. (2000). Qualitative content analysis. *Forum: Qualitative Social Research, 1*(2). http://217.160.35.246/fqs-texte/2-00/2-00mayring-e.pdf

McMillan, J. H., & Schumacher, S. (2001). *Research in education: A conceptual introduction* (5th ed.). New York: Longman.

McMillan, J. H., & Schumacher, S. (2010). *Research in education: Evidence based inquiry* (7th ed.). Upper Saddle River: Pearson.

McMillan, J. H., & Wergin, J. F. (2010). *Understanding and evaluating educational research* (4th Ed.). Upper Saddle River, New Jersey: Pearson.

Meriläinen, M., Valli, P., Valli, R., & Piispanen, M. (2013). The best on-line guidance experiences in Finnish primary school teacher education practicum. *The Online Journal of Distance Education and e-Learning, 1*(1), 20-25.

Merriam, S. B. (2001). Andragogy and self-directed learning: Pillars of adult learning theory. *New Directions for Adult and Continuing Education, 89,* 3-13.

Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation*. San Francisco: Jossey-Bass.

Mertens, D. M. (2009). *Transformative research and evaluation*. New York: The Guilford Press.

Mertens, D. M. (2010). *Research and evaluation in education and psychology : Integrating diversity with quantitative, qualitative, and mixed methods*. Thousands Oaks, California: SAGE.

Mncube, V. (2009). The perceptions of parents of their role in the democratic governance of schools in South Africa: Are they on board? *South African Journal of Education, 29*, 83-103.

Modiba, M. (1997). Distance teacher education in South Africa: A critical analysis of pedagogical assumptions. *Teacher and Teacher Education, 13*(7), 727-739.

Moletsane, R. (2004). Toward a learning profession: Rethinking professional development in the age of educational and social crises in a globalising South Africa. In R. Balfour, T. Buthelezi & C. Mitchell (Eds.), *Teacher develpoment at the centre of change* (pp. 202-214). Durban: KZNDE Teacher Development Directorate Faculty of Education, UKZN.

Monteiro, A. A., Gomes, I. P., & Herculano, D. P. (2011). The reflective learning portfolio as a transformative tool for local development. *ESREA Network*. http://congreso.us.es/cesrea/OKpapers/monteiro

Moore, J. L., Dickson-Deane, C., & Galyen, K. (2011). e-Learning, online learning, and distance learning environments: Are they the same? *Internet and Higher Education, 14*, 129-135.

Moore, M. G. (1983). Self-directed learning and distance education. Retrieved 12 November 2011, from ERIC http://files.eric.ed.gov/fulltext/ED265825.pdf

Moore, M. G. (2007a). Beyond reflection: Contingency, idiosyncrasy and reflexitivity in initial teacher education. In M. Hammersley (Ed.), *Educational research and evidence-based practice*. London: Sage.

Moore, M. G. (Ed.). (2007b). *Handbook of distance education* (2nd ed.). New Jersey: Lawrence Erlbaum Ass. Inc.

Morrison, G. S. (2006). *Fundamentals of early childhood education* (4de ed.). Upper Saddle River, N.Y: Pearson.

Moses, E., & Yu, D. (2009). Migration from the Northern Cape: A Southern Africa Labour and Development Research Unit working paper. Cape Town: SALDRU, University of Cape Town.

Mouton, J. (2001). *How to succeed in your Masters and Doctoral Studies: A South African guide and resource book*. Pretoria: Van Schaik Publishers.

Mukeredzi, T. G. (2013). Professional development through teacher roles: Conceptions of professionally unqualified teachers in rural South Africa and Zimbabwe. *Journal of Research in Rural Education, 28*(11), 1-16.

Musset, P. (2010). *Initial teacher education and continuing training policies in a comparative perspective: Current practices in OECD countries and a literature review on potential effects*. OECD Education Working Papers No. 48. OECD Publishing. Retrieved from http://dx.doi.org/10.1787/5kmbphh7s47h-en

National Professional Development Center on Inclusion. (2008). What do we mean by professional development in the early childhood field? http:/npdci.fpg.unc.edu

NEEDU. (2013). *National Report 2012: Summary*. National Education Evaluation and Development Unit. Pretoria. Retrieved from http://www.saqa.org.za/docs/papers/needu.pdf

Nel, N., & Müller, H. (2010). The impact of teachers' limited English proficiency on English second language learners in South African schools. *South African Journal of Education, 30*, 635-650.

Neuman, W. L. (2006). *Social research methods - Qualitative and quantitave approaches* (6th Ed.). Boston: Pearson

Nieuwenhuis, J. (2007). Qualitative research designs and data gathering techniques. In K. Maree (Ed.), *First Steps in Research* (pp. 70-97). Petoria: Van Schaiks Publishers.

Nunnally, J., & Bernstein, I. H. (1994). *Psychometric theory* (3e ed.). New York: McGraw-Hill Inc.

O'Farrill, I. E. (2012). *Exploring teacher education in Cuba: Meeting the challenges of 21st century*. Paper presented at the 8vo Congreso Internacional de Educación Superior, 13-17 February, Palacio de Convenciones de La Habana, Cuba. http://revistas.mes.edu.cu

O'Sullivan, M. (2004). The usefulness of lesson observation in a primary teachers' INSET programme in Namibia. *Journal of Education for Teaching, 30*(1), 5-25. http://www.sciencedirect.com/science doi: 10.1080/0260747032000162280

O'Sullivan, M. (2008). Book review: Cuba's academic advantage: Why student's in Cuba do better in school by Martin Carnoy (with Amber K. Gove & Jeffery H. Marshall) Publishers: Stanford University Press; Year of publication: 2007. *Brock Education Journal, 17*, 113-117.

OECD. (2005). Teachers Matter - attracting, developing and rataining effective teachers. Paris, France: OECDPublishers.

OECD. (2011). Lessons from PISA for the United States. *Strong performers and successful reformers in education.* Retrieved 22 April, 2014, from http://dx.doi.org/10.1787/9789264096660-en

Ohlhausen, M. M., & Ford, M. P. (1990). *Portfolio assessment in teacher education: A tale of two cities*. Paper presented at the 1990 National Reading Conference, Miami, Florida. http://files.eric.ed.gov/fulltext/ED329917.pdf

Ojala, M., Karevaara, K., & Reunamo, J. (2004). Fostering cyber learning in European teacher education. Retrieved 22 March, 2008, from http://www.helsinki.fi/~reunamo/article/neothemi2003.pdf

Oolbekkink-Marchand, H. W., Van Driel, J. H., & Verloop, N. (2006). Secondary and University teachers' perspectives on self-regulated learning. In F. K. Oser, F. Achtenhagen & U. Renold (Eds.), *Competence oriented teacher training* (pp. 219-234). Rottterdam, The Netherlands: Sense Publishers.

Opfer, V. D., & Pedder, D. (2011). Conceptualizing teacher professional learning. *Review of Educational Research, 81*(3), 376-407. doi: 10.3102/0034654311413609

Orland-Barak, L. (2005). Portfolios as evidence of reflective practice: what remains 'untold'. *Educational Research, 47*(1), 25-44.

Oxford University Press. (2014). *Oxford Dictionaries Online* J. Pearsall (Ed.) Retrieved from http://oxforddictionaries.com

Paige, K., Chartres, M., & Kenyon, A. (2008). Using teacher stories to reveal quality educational practice: An Eastern Cape experience. *International Journal on Educational Development, 28*(5), 524-533. doi: 10.1016/j.ijedudev.2008.01.005

Park, S. (2010). Teacher policies in Korea. Retrieved 28 March 2013, from World Bank http://sitesources.worldbank.org/EDUCATION

Patton, M. Q. (2001). Evaluation, knowledge management, best practices, and high quality lessons learned. *American Journal of Evaluation, 22*(3), 329-336.

Patton, M. Q. (2002). *Qualitative reseach & evaluation methods* (3rd ed.). Thousand Oaks: Sage Publications.

Patton, M. Q. (2008). *Utilization-focussed evaluation* (4th ed.). Thousand Oaks, California: SAGE.

Perdue Edu. (2009). APA Formatting and Style Guide, Online writing lab. Retrieved 24 April, 2014, from http://owl.english.purdue.edu/owl/section/2/10/

Perraton, H. (2000). *Open and distance learning in the developing world* (2nd ed.). Abingdon: Routledge.

Perraton, H., Creed, C., & Robinson, B. (2002). Teacher education guidelines using open and distance learning: Technology, curriculum, cost, evaluation.

Retrieved 14 April, 2012, from http://unesdoc.unesco.org/images/0012/001253/125396e.pdf

Peters, O. (2007). The most industrialized form of education. In J. L. Moore (Ed.), *Handbook of distance education* (2nd ed., pp. 57-68). New Jersey: Lawrence Erlbaum Associates.

Poggenpoel, M., & Myburgh, C. (2004). The researcher as research instrument in education research: A possible threat to trusworthiness. *Education, 124*(2), 418-422.

Potgieter, F. J. (2008). *Introduction to educational theories, concepts and ideas*. Paper presented at the MEd & PhD Research Development and Suport Training Programme, North-West University, Potchefstroom.

Pretorius, S. G. (2014). Educators' perceptions of school effectiveness and dysfunctional schools in South Africa. *Journal of Social Sciences, 40*(1), 51-64.

Probyn, M. (2001). Teachers' voices: Teachers reflections on learning and teaching through the medium of english as an additional language in South Africa. *International Journal of Bilingual Education and Bilingualism, 4*(4), 249-266. doi: 10.1080/13670050108667731

Pumar, E. S. (2010). Cuban education and human capital formation. *ASCE Cuba in transition*, 97-105.

Ravsberg, F. (2012, 25 October). In Cuba, the teachers are leaving. *Havana Times.* Retrieved 13 June, 2014, from www.havanatimes.org/?p=80900

Ravsberg, F. (2013, 16 September). Education in Cuba, what's left 20 years later. *Havana Times.* Retrieved 22 June, 2014, from www.havanatimes.org/?p=80900

Reason, P. (Ed.). (1994). *Participation in human inquiry*. London: SAGE Publications.

Resnik, D. B. (2010). What is ethics in research and why is it impotant? Retrieved 10 May, 2014, from http://www.niehs.nih.gov/research/resources/biothics/whatis/

Richter, D., Kunter, M., Klusmann, U., Lüdtke, O., & J., B. (2010). Professional development across the teaching career: Teachers' uptake of formal and informal learning opportunities. *Teacher and Teacher Education, 27*(1), 116-126.

Robson, C. (2002). *Real world research - A resource for social scientists and practitioner-researchers* (2nd ed.). Malden: Blackwell Publishing.

Rodgers, C. (2002). Defining reflection: Another look at John Dewey and reflective thinking. *Teachers College Record, 104*(4), 842-866. doi: 016-4681

Rowntree, D. (1992). *Exploring open and distance learning*. London: Routledge-Falmer.

Rumajogee, R., Jeeroburkhan, F., Mohadeb, P., & Mooneesamy, V. (2003). *Case study on distance education for teacher education in Mauritius*. Paper presented at the Association for the Developmet of Education in Africa Biennial Meeting, Grand Baie, Mauritius. http://www.ADEAnet.org

Sahlberg, P. (2010). The secret to Finland's success: Educating teachers. Retrieved 10 January, 2013, from http://edpolicy.stanford.edu

Sandberg, A., Anstett, S., & Wahlgren, U. (2007). The value of in-service education of quality in pre-school. *Journal of In-service Education, 33*(3), 301-319. doi: 10.1080/13674580701486929

Santiago, P., & Benavides, F. (2009). *Teacher evaluation - A conceptual framework and examples of country practices*. Paper presented at the OECD-Mexico Workshop - Towards a Teacher Evaluation Framework in Mexico: International Practices, Criteria and Mechanisms, Mexico.

SAS Institute Inc. (2005). SAS Institute Inc., SAS OnlineDoc®, Version 9.1, Cary, NC.

Savin-Baden, M. (2000). *Problem-based learning in Higher Education: Untold stories* (pp. 26). Retrieved from http://ww.kingscourt.co.uk/openup/chapters/033520337X.pdf

Seong, S., Shin, J. C., & Ilon, L. (2009). International response essay - Reflections to Jean-Marie, Normore, and Brooks' article within the context of Korean education. *Journal of Research on Leadership Education, 4*(1).

Shava, G. N., & Ndebele, C. (2014). Towards achieving quality distance education, challenges and opportunities: The case of the Zimbabwe Open University. *Journal of Social Science, 39*(3), 317-330.

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitatice research projects. *Education for Information, 22*, 63-75.

Shephard, K. (2008). Higher education for sustainability: Seeking affective learning outcomes. *International Journal of Sustainability in Higher Education, 9*(1), 87-98. doi: 10.1108/14676370810842201

Shin, M., & Lee, Y. (2009). Changing the landscape of teacher education via online teaching and learning. Retrieved 7 April 2012, from ACTE www.acteonline.org

Shon, Y., & Lee, K. (2006). Checklist development of distance learning course for Korean kindergarten teachers. *Journal of the research centre for educational technology, Spring*(Practice). http://www.rcetj.org/?type=ci&id=729

Shulman, J. H. (2003). *From practice to theory and back again: Cases and portfolios as instruments for professional development*. Paper presented at the Annual meeting of the American Educational Research Association, Chicago, IL. http://www.wested.org/nbnetwork/resources/aera_2003_shulman.doc

Shulman, L. S. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review, 57*(1), 1-22.

Shulman, L. S. (2005). *The signature pedagogies of the profession of law, medicine, engineering, and the clergy: Potential lessons for the education of teachers.* Paper presented at the Math Science Partnerships Workshop: "Teacher Education for Effective Teaching and Learning, National Research Council's Centre for Education.

Shulman, L. S., & Shulman, J. H. (2004). How and what teachers learn: A shifting perspective. *Journal of Curriculum Studies, 36*(2), 257-271.

Siaciwena, R. (2007). *The use of open and distance learning in teacher education in the SADC region: Issues and challenges*. Paper delivered at the inauguration of the NWU School of Continuing Teacher Education. North-West University. Potchefstroom.

Siaciwena, R., & Lubinda, F. (2008). The role of open and distance learning in the implementation of the right to education in Zambia. *The International Review of Research in Open and Distance Learning, 9*(1). http://www.irrodl.org/index.php/irrodl/article/view/481/995

Smith, K. (2011). Professional development of teachers - A prerequisite for Afl to be successfully implemented in the classroom. *Studies in Education Evaluation, 37*, 55-61. doi: 10,1016/j.stueduc.2011.03.005

Song, L., & Hill, J. R. (2007). A conceptual model for understanding self-directed learning in online environments. *Journal of Interactive Online Learning, 6*(1), 27-42.

South African Council for Educators (SACE). (2013). Professional Magazine. *Professional Magazine.* Retrieved 13 July, 2015, from http://www.sace.org.za/upload/files/Sace%20Magazine.pdf

South African Department of Basic Education. (2010). Draft policy on minimum requirements for qualification in education. *A discussion document presented at the Workshop on Teacher Education Qualifications.* Retrieved 30 November, 2011, from http://www.info.gov.

South African Department of Basic Education. (2011a). Action plan to 2014 - towards the realisation of schooling 2025. Retrieved 23 September, 2012, from http://www.education.gov.za

South African Department of Basic Education. (2011b). *Universal access to Grade R: Policy Framework*. Pretoria: Government Printing Works Retrieved from http://www.education.gov.za.

South African Department of Basic Education. (2013). Report on the Annual National Asssessment of 2013 Grades 1 to 6 & 9. Retrieved 10 Sept, 2014, from http://www.education.gov.za

South African Department of Education. (1995). White Paper on Education and Training, Notice 196 of 1995. Retrieved 29 November, 2011, from http://www.info.gov.info.za

South African Department of Education. (2000). *Norms and Standards for Educators, National Education Policy Act (20844/1996)*. (82). Pretoria: Government Printing Works Retrieved from http://www.info.gov.

South African Department of Education. (2005a). Address by the Minister of Education, Ms Naledi Pandor, MP, at the Ntataise conference on Early Childhood Development, Riversdale Hotel and Conference Centre,

Vanderbijlpark. Retrieved 26 February, 2007, from www.southafrica.info/about/government/gov.html

South African Department of Education. (2005b). A national framework for teacher education in South Africa: Report of the Ministerial Committee on teacher education. Retrieved 16 June, 2012, from http://www.info.gov.ac.za

South African Department of Education. (2005c). Report of the ministerial committee on rural education - a new vision for rural schooling. Retrieved 8 November, 2012, from http://www.info.gov.ac.za

South African Department of Education. (2007). *The national policy framework for teacher education and development in South Africa: More teachers, better teachers*. (Government Gazette no. 29832). Pretoria: Creamer Media Pty Ltd. Retrieved from http://www.education.gov.za.

South African Department of Educationx. (2006). *The National Policy Framework for Teacher Education and Development in South Africa - More teachers, better teachers*. Pretoria: Government Press Retrieved from http://www.info.gov.

South African Department of Higher Education and Training. (2011). *Minimum Requirements for Teacher Education Qualifications*. Pretoria: Government Printing Works Retrieved from http://www.dhet.gov.za/Structure/Universities/TeacherEducation.

South African Departments of Basic Education and Higher Education and Training. (2011). Integrated strategic planning framework for teacher education and development in South Africa, 2011 – 2025. Retrieved 5 April, 2011, from http://www.info.gov.ac.za

South African Government. (2010). Media statement by the Deputy Minister of Social Development, Ms Bathabile Dlamini on the occasion of the launch of the Northern Cape substance abuse campaign, Rosedale-Northern Cape. Retrieved 26 November, 2014, from http://www.dsd.gov.za/index.

South African Government. (2012). South Africa signs historic Higher Education agreement with Cuba. from http://www.dhet.gov.za/LinkClick.aspx?fileticket

South African Qualifications Authority. (2001). Qualifications from the educators in schooling (SGB) - Registered by the SAQA board. Retrieved 5 February, 2009, from www.saqa.org.za

SouthAfrica.info. (19 November 2012). Geography of the Northern Cape. Retrieved 16 October, 2014, from http://www.southafrica.info/about/geography/northern-cape.htm

Sparks, D. (2002). *Designing powerful professional development for teachers and principals* J. Richardson (Ed.) (pp. 153). Retrieved from www.nsde.org/sparksbook.html

Sperling, G. B. (2005). The case for universal basic education for the world's poorest boys and girls. *Phi Delta Kappan 87*(3), 213-216.

Stake, R. E. (2005). Qualitative case studies. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (3rd ed., pp. 443-446). Thousand Oaks, California: Sage.

Stanley, C. (1998). A framework for teacher reflectivity. *Tesol Quaterly, 32*(3), 584-591.

StateUniversity.com. (2013). Cuba-Teaching profession. Retrieved 23 July, 2013, from http://education.stateuniversity.com/pages/333/Cuba

Subotzky, G., & Prinsloo, P. (2011). Turning the tide: a socio-critical model and framework for improving student success in open distance learning at the University of South Africa. *Distance Education, 32*(2), 177-193. doi: 10.1080/01587919.2011.584846

Tait, A. (2000). Planning student support for open and distance learning. *Open Learning, 15*(3), 287-298. http://www.c283l.uni-oldenburg.de/cde/support/readings/tait200.pdf

Taylor, N. (2013). The state of our education system. *PolitcsWeb, 2014*. http://www.politicsweb.co.za

Taylor, N. (2015). How can teaching become more professional? *JET Bulletin,* (February), 12. www.jet.org.za

The Centre for Development and Enterprise. (2015). Teachers in South Africa: Supply and Demand 2013–2025. In A. Bernstein (Ed.), *Executive Summary*. Johannesburg, South Africa.

The Trade Union of Education in Finland. (2008). Teacher education in Finland. Retrieved 15 January, 2014, from http://www.oaj.fi/pls/portal/docs

Thompson, M. M., & Irele, M. E. (2007). Evaluating distance education programmes. In M. G. Moore (Ed.), *Handbook of distance education* (2 ed., pp. 419-436). London: Lawrence Erlbaum Associates.

Thorpe, M. (2003). *The future for open and distance learning.* Paper presented at the 10th Cambridge International Conference on Open and Distance Education, UK Open University.

Timperley, H. (2008). *Teacher professional learning and development*. In J. Brophy (Series Ed.) Educational Practices Series, Vol. 18. *International Academy of Education* (pp. 32). Retrieved from http://www.curtin.edu.au/curtin/dept/smec/iae

Tsai, C. (2007). Teachers' scientific epistemological views: The coherence with instruction and students' views. *Science Education, 92*(2), 21. doi: 10.1002/sce.20175

UNESCO. (2001). The Luneburg declaration on higher education for sustainable development. Retrieved 2 March, 2014, from http://portal.unesco.org/education

Upko, E. O. (2006). Support for distance learners in a Nigerian distance education programme. *Open Learning, 21*(3), 253-261. doi: 10.1080/02680510600953237

Usher, L., Usher, M., & Usher, D. (2003). *Nurturing five dispositions of effectiveTeachers*. Paper presented at the 2nd National Symposium on Educator Dispositions, November 20-21, Eastern Kentucky University, Richmond, KY.

Van der Berg, S., Taylor, S., Gustafsson, M., Spaull, N., & Armstrong, P. (2011). Improving education quality in South Africa - Report for the National Planning Commission: Department of Economics, University of Stellenbosch.

Van der Schaaf, M. F., Stokkinga, K., M., & Verloop, N. (2008). Teacher beliefs and teacher behaviour in portfolio assessment. *Teaching and Teacher Education, 24*, 1691-1704.

Van Driel, J. H., & Berry, A. (2012). Teacher professional development focusing on pedagogical content knowledge. *Educational Researcher, 41*(1), 26-28. doi: 10.3102/0013189X11431010

Villegas-Remers, E. (2003). *Teacher professional development: An international view of the literature*. Paris: International Institute for Educational Planning.

Vincini, P. (2003). The nature of situated learning. *Innovations in learning*. http://sites.tufts.edu/ests/files/2012/12/newsletter_feb_20031.pdf

Volante, L. (2006). Essential elements in teacher education: Preservice student perspectives. *The Alberta Journal of Educational Research, 52*(2), 167-180.

Vorwerk, C. (2005). NQF Review - Redifining qualifications that have an occupational purpose Retrieved 20 July, 2015, from http://www.xasa.co.za/resources/Papers/NQF_ReviewVer1.pdf

Vreugdenhil, K. (2005). Bridge between theory and practice. In H. N. D. Springate (Ed.), *Occasional Papers* (pp. 119-126). London: University of Greenwich.

Vygotsky, L. (1978). *Mind in society*. Cambridge: Harvard University Press.

Wade, R. C., & Yarbrough, D. B. (1996). Portfolios: A tool for reflective thinking in teacher education? *Teaching & Teacher Education, 12*(1), 63-79.

Walker, J., & Von Bergmann, H. (2013). Teacher education policy in Canada: Beyond professionalization and deregulation. *Canadian Journal of Education, 36*(4), 65-92.

Wang, A. H., Coleman, A. B., Coley, R. J., & Phelps, R. P. (2003). Preparing teachers around the world. Policy information report. In P. i. centre (Ed.), (pp. 47). Princeton: Educational Testing Service.

Welch, T. (2008). Reaching teachers? Curriculum challenges for distance teacher education in South Africa. *Africa Education Review, 5*(2), 324-337. doi: 10.1080/18146620802450017

Welch, T., & Gultig, J. (2002). Becoming competent: Initiatives for the improvement of teacher education in South Africa, 1995 to 2002. Retrieved 2 February, 2009, from http://209.85.229.132/search

Whitebook, M. (2003). Early education quality: higher teacher qualifications for better living environments. A review of the literature. Retrieved 23 January, 2007, from http://www.iir.berkeley.edu/cscce/pdf/teacher.pdf

Williams, E., Olivier, T., & Pienaar, C. (2009). A model to revitalise teacher competence. *Acta Academica, 41*(4), 195-217.

Williams, S. C., Davis, M. L., Metcalf, D., & Covington, V. M. (2003). The evolution of a Process Portfolio as an assessment system in a teacher education program. *Current Issues in Education, 6*(1).

Williamson, S., Hostetter, C., Byers, K., & Huggins, P. (2010). I found myself at this practicum: Student reflections on field education. *Advances in Social Work, 11*(2), 235-247.

Wilson, S. (2003). Initial teacher education in Canada - The practicum. Retrieved 10 June 2013 http://www.see-educoop.net/

Woodfield, L. (2004). *Physical development in the early years*. London: Continuum.

Woolfolk, A. (2007). *Educational Psychology* (10th ed.). Boston: Pearson.

Woolfolk Hoy, A., & Burke Sperob, R. (2005). Changes in teacher efficacy during the early years of teaching: Acomparison of four measures. *Teaching and Teacher Education, 21*, 343-356.

Wray, S. (2007). Teaching portfolios, community, and pre-service teachers' professional development. *Teaching and Teacher Education, 23*, 1139–1152.

www.worldlicenseplates. (2014). worldlicenseplates.com. Retrieved 1 November, 2014, from http://www.worldlicenseplates.com

Yasin, R. M., Rahman, S., & Ahmad, A. R. (2012). Framework for reflective learning using portfolios in pre-service teacher training. *Procedia - Social and Behavioral Sciences, 46*, 3837-3841.

Yates, C. (2007, 6-9 November). *Teacher education policy: International development discourses and the development of teacher education.* Paper presented at the Teacher policy forum for Sub-Saharan Africa, Paris.

Yoon, K. S., Duncan, T., Lee, S. W., Scarloss, B., & Shapley, K. (2007). Reviewing the evidence on how teacher professional development affects student achievement. In R. N. Issues & Answers Report (Ed.), *Fast Response Projects* (Vol. No. 033). Washington, DC: U.S. Department of Education Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Southwest.

Zeichner, K., & Wray, S. (2001). The teaching portfolio in US teacher education programs: What we know and what we need to know. *Teaching and Teacher Education, 17*, 613–621.

Zimmerman, B. J. (2002). Becoming a self-regulated learner - an overview. *Theory into practice, 41*(2), 64-70.

Zimmerman, B. J. (2008). Investigating self-regulation and motivation: Historical background, methodological developments, and future prospects. *American Educational Research Journal, 45*(1), 166-183. doi: 10.3102/0002831207312909

Zumbrunn, S., Tadlock, J., & Roberts, E. D. (2011). Encouraging self-regulated learning in the classroom: A review of the literature. In Metropolitan Educational Research Consortium (MERC) (Ed.): Virginia Commonwealth University.

LIST OF APPENDIXES (AVAILABLE ON CD)

APPENDIX A: INFORMED CONSENT AND ETHICAL CLEARANCE:

1. Ethics approval certificate - NWU
2. Consent: Director: NWU School of Human and Social Sciences for Education
3. Consent: Northern Cape Department of Education[8]
4. Consent: NWU Statistical Consultation Services
5. Consent form for school principals
6. Consent form for research participants

APPENDIX B: RESEARCH INSTRUMENTS:

1. Focus-group interview questions
2. Pre-implementation semi-structured questionnaire
3. Post-implementation semi-structured questionnaire
4. Interview schedule
5. Learning portfolio evaluation rubric (document analysis)

APPENDIX C: STUDY GUIDE

1. Study guide: Foundation Phase ACE learning portfolio (NCDoE bursary project)

[8] Although this study was not part of a joint project, conjoined consent was obtained for two independent studies based on the same bursary project. Additional data were also collected by another researcher, M Neethling, as part of a pilot study with focus on the way the programme developed teachers' competency to support LSEN.

APPENDIX D: EXTENSIVE NETWORKS (ATLASti)

1. Participant expectations – all four elements of applied competence
2. Participant experiences: self-directedness – Positive and negative codes
3. Codes related to PCK as outcome

APPENDIX E: SOUND FILES

1. Focus-group interview
2. Interview Teacher A
3. Interview Teacher B
4. Interview Teacher C
5. Interview Teacher D

APPENDIX F: TRANSCRIPTIONS

1. Written expectations of the practical component
2. Focus-group interview
3. Individual interviews
4. Open ended questionnaire questions