Rhodes University

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**Research proposal**

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Provisional title: *Investigating the evolving nature of Grade R teacher-learning within an in-service community of practice*

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**Abstract**

This study aims to investigate Grade R teachers’ evolving ways of being, making meaning and changing identity through participation in a newly established community of practice (CoP). The proposed participants in this study will be a group of 10 to 15 Grade R teachers from local schools, some who hail from schools who participated in the SA Numeracy Chair Project (SANCP) phase 1 (2011-2015) project and who have elected to participate in the SANCP phase 2 Grade R Early Number Fun (ENF) Program (2016- Nov 2017). My study will be a qualitative interpretive study. The unit of the analysis will be teacher learning (theorised as evolving ways of being, belonging, doing and making meaning) within the community of pre-school teachers. The design of the in-service community is informed by Wenger’s (1998) socio-cultural theory of learning within CoPs and this theory will be used to inform the research and to provide an analytic framework for data analysis. Methods of data collection will include teacher questionnaires, interviews, observation and researcher refective journalling.

**INTRODUCTION**

This study aims to investigate Grade R teachers’ evolving ways of being, making meaning and changing identity through participation in a newly established community of practice (CoP). A continuing literature review indicates that teachers’ professional identity and subsequent teaching practices benefit significantly from the collegial exchange of ideas and resources through the medium of a community of practice. Although this study does not focus theoretically on Professional Learning Communities (PLCs) specifically, it must be noted here that the department of education promotes the establishment of teacher education PLCs as a key part of the national teacher development strategy. While there is some local research on the value of teacher communities for supporting teacher learning I have found no local research on pre-school teacher communities. Thus a gap exists as to insights into the nature of teacher learning for pre-school teachers participating in learning communities.

Although my interest lies within the pre-school domain, and in Early Childhood Development, I have chosen in this study to focus on Grade R teacher learning specifically. This decision was influenced by two factors: first, the South African Numeracy Chair Project Early Number Fun CoP is directed at Grade R teachers (See Appendix 1). Secondly, I have chosen to focus specifically on Grade R teacher learning as these are the teachers who have essentially been ‘plucked’ out of the pre-school setting, and bolted onto the Foundation Phase landscape of schools due to the recent roll-out of Grade R policy by the Department of Basic Education in South Africa. There is potential within this transition for changing ways of being and making meaning, providing a potentially data rich space within to conduct research around the nature of teacher learning.

The proposed participants in this study will be a group of 10 to 15 Grade R teachers from local schools, some who hail from schools who participated in the SANC phase 1 (2011-2015) project and who have elected to participate in the SANC phase 2 Grade R Early Number Fun (ENF) Program (2016- Nov 2017) (See Appendix 1). These teachers will range in their levels of experience and their experiences will differ based on the varied socio-economic and language of learning and teaching backgrounds within which they teach. I will be a participant observer, participating alongside teachers in the ENF program.

My study will be a qualitative interpretive study. The unit of the analysis will be teacher learning (theorised as evolving ways of being, belonging, doing and making meaning) within the community of pre-school teachers. The design of the in-service community is informed by Wenger’s (1998) socio-cultural theory of learning within CoPs, and for this research study, the in-service teacher program will be considered a CoP in that it meets the requirements of:

* Sustaining mutual engagement (harmonious or conflictual) through regular meetings and discussions with members
* shared ways of engaging in doing things together;
* substantial overlap in participants’ descriptions of who belongs;
* specific tools, representations, and other artefacts;
* a shared discourse reflecting a certain perspective on the world

(Wenger, 1998, p. 125-126)

Each of these aspects is emphasised in the SANC ENF discussion document (see Appendix 1). The SANCP ENF Program too reflects the following definition of a community of practice as BOTH:

“a living context that can give newcomers access to competence and also invite a personal experience of engagement by which to incorporate that competence into an identity of participation…are a privileged locus for the *acquisition* of knowledge”

AND “a good context to explore radically new insights without becoming fools or stuck in some dead end. A history of mutual engagement around a joint enterprise is an ideal context for this kind of leading-edge learning…..a privileged locus for the *creation* of knowledge”

 (Wenger, 1998, p. 214)

The study will draw on teacher questionnaires, interviews and observation of teacher practices to answer the question ‘what is the nature of evolving Gr R teacher learning through participation in this CoP?’ A key tool utilised in the ENF Program is a research informed Grade R Number Fun resource kit, currently under development by Prof. Graven, Dr. Stott and SANCP partners (see Appendix 1). The resource kit was chosen as a focus of the ENF program in order to support the uptake of practices promoted in the in-service CoP and as a resource to support teacher/parent engagement and at-home parent support of learner early numeracy development.

Questionnaire data will be gathered from all willing CoP participants (at least 30) at three points (at the start in April 2015, in the middle in Sept 2016 and at the end of the project in Sept 2017) while interviews, classroom observations and observations of teacher-parent engagements will be conducted with a smaller sample of 4-6 teachers, purposively chosen to enable richness and thick description across contexts. The findings from this data will constitute the basis of developing rich, elaborated evidence through the presentation of 4-6 case studies. Teacher practices observed will focus on those in which the research informed resources are used in Grade R classroom teaching

A secondary focus of this research, will be investigating the role of the common ‘tool’, in the form of the research informed resource kit. Wenger (2010) foregrounds the importance of a ‘boundary object’ for enabling learning, yet there is little research in teacher learning studies in CoPs locally and internationally that focus on the role of such boundary objects. In the Grade R ENF Program, the ‘research informed resource kit’ can be viewed as a boundary object across two communities: the first community consists of researchers and Grade R teachers participating in the CoP; the second involves participating Grade R teachers and the parents of their learners.

Wenger’s (1998) socio-cultural four component (meaning, practice, identity, community) theory of learning as participation within communities of practice, and related work on boundary objects and boundary crossing (Wenger, 2010; Akkerman & Bakker, 2011; Star & Griesemer, 1989; Chrisman, 1999) will form the theoretical frame for investigating the nature of teacher learning in this Gr R CoP. [Socio constructivism provides the domain-specific instructional theory (DiSessa and Cobb, 2004) that informs the SANCP Grade R ENF Cop. (See Appendix 1)]

This study, with the focal research on teacher learning, will feed into the aims of the SANC project of searching for sustainable ways forward to the challenges of numeracy education as the findings should simultaneously speak to the potential for strengthened teacher learning within Grade R CoPs and the potential value of using a research informed resource kit as a boundary object for use in the Grade R CoPs, classrooms and parent engagement sessions. Due to the integrated nature of Grade R the numeracy focused resources are explicitly connected with literacy development in order to support and to strengthen the cross-over of these domains within the pre-primary setting [See Appendix 1].

The key outcome for the SANCP ENF program will be to establish a previously non-existent local community of practice of Grade R teachers, enhancing their personal growth as professionals, as well as, hopefully, the implementation (in schools and homes) of a locally useable resource kit. The key aim of my study is to research the nature of teacher learning within this program and, it is anticipated, to contribute significantly to understanding of possible ways to enable transformative and sustainable professional learning communities that support the teaching and learning of Grade R learners, in South Africa and beyond.

**CONTEXT OF THE STUDY**

It is with distress, and sometimes a feeling of hopelessness, that educators in South Africa face what many have termed an “educational crisis” (Bloch, 2007; Fleisch, 2008). This ‘crisis’ has ramifications which spread far and wide – more so for those most vulnerable in our society – young children from low socio-economic backgrounds. The cycle of inequality can and should be broken by access to quality education for all. The post-Apartheid government has acknowledged this, and since 1994, education in South Africa has become “the vehicle for transforming society” (Graven, 2013, p.2). This is re-iterated by Harley, et al. (2000), who speak about a nation’s hopes now being placed at the door of education, “as means of transforming and developing South African society” (p. 287), as we run the risk of seeing those schools previously impoverished becoming even more so.

Student underperformance continues across grades and subjects. Over the past two years, educators have faced textbook delivery failures, legal battles to ensure Minimum Norms and Standards for Infrastructure, as well as growing debate and resulting conflict around the Annual National Assessments (ANAs) – including questions around validity and reliability (McCarthy & Oliphant, 2013). Mathematics education in particular is experiencing dire levels of underperformance. A recent (2015) paper by Spaull & Kotze revealed that only the top 16% of South African Grade 3 children are performing at an appropriate grade 3 level in mathematics. From an international perspective, the Trends in International Mathematics and Science Study (TIMMS), South Africa has ranked as one of the lowest performing countries in Primary School Mathematics (Reddy, 2006).

The National Education Evaluation and Development Unit (NEEDU) report of 2012 states: “It is widely known that South African schools perform below expectations. But much less is known about why it should be so.” (NEEDU, 2012, p. 6). This is especially true in the early years, where children in their second or third year of formal schooling are already floundering. Many now conclude that the time has come to examine the critical Foundation Phase (Grade R to Grade 3), in order to address any possible educational shortcomings early on, and increasingly in South Africa, projects are focusing on this phase of schooling (see Atweh et al., 2014).

This focus on Foundation Phase indicates a shift from the historical practice of focusing on learners in the Further Education and Training (FET) Phase of schooling, in preparation for the National Senior Certificate exams (commonly referred to as Matric). It is becoming increasingly noted that Grade 12 is too late, as “the education achievement gap begins in the Foundation Phase and continues unbroken” (Fleisch, 2008, p. 30). Numerous research also supports that the earlier the intervention, the less likely children are to face challenges later on (e.g. Wright et al., 2006).

As mentioned earlier, those hardest hit by inequalities in education are those from low socio-economic backgrounds. Atweh et.al. (2014) stress the significance of attending quality pre-schools, not only for the impact on the development of cognitive skills, but also as a significant weapon in the battle to bridge the gap between “less and more affluent groups” (p. 8).

The challenges relating to poverty which are shown to impact on school readiness are exacerbated in the Eastern Cape context. A recent ‘Education report focusing on the Eastern Cape’ released by STATS South Africa revealed that of the “approximately 601000 learners in the foundation phase (in the Eastern Cape), about two in ten learners were considered deprived, with an overall deprivation intensity of 39.1%” (statssa.gov.za, February 2016). The deprivation index used to class these children as such was developed by considering variables such as “access to facilities and services critical for effective teaching and learning, learner-classroom ratios as a measure of overcrowding and learner-teacher ratio” (statssa.gov.za, February 2016). This coupled with the revelation that the number of children who received social grants has increased from about 3% to about 60% in just 10 years, meaning that the Eastern Cape has the highest percentage of people receiving social grants, as well as accommodating the second largest group of children who do not pay school fees (statssa.gov.za, February 2016).

Hoadley (2007) speaks to the understanding of the full extent of the problem, as it pertains to mathematics education in particular, in her paper entitled “*The reproduction of social class inequalities through mathematics pedagogy in South African primary schools”.* Studies suggest too that “disadvantaged schoolchildren are typically exposed to inappropriate teaching” (Fleisch, 2008, p. 138). Considering the potential that quality teaching in the early years holds in terms of alleviating the cycle of poverty and inequalities, the prevalence of inappropriate teaching is deeply concerning.

It is in light of the critical importance of quality teaching and learning in the Foundation Phase, coupled with my own personal passion for and experience in Early Childhood Development, my study will be looking to contributing to the understanding of Grade R teacher professional learning, in the hope of contributing to the development of ‘quality’ Grade R teacher education, leading to ‘quality’ teaching and learning. The importance of the early years on children’s cognitive, emotional, language and social development is well-known (Atweh et al., 2014, p. 8), and especially for supporting the learning of children from poorer communities: “There is significant evidence that children who attended pre-school benefit through numeracy skills, thus bridging the gap between less and more affluent groups.” (Atweh et al., 2014, p. 8).

Situated in a South African context, and concerned with the nature of teaching and learning in Grade R classrooms, this study will specifically situate itself within the realm of understanding teacher learning within the context of localised in-service communities, which is a key part of the national teacher development strategy. Much international and local research is currently being done on mathematics teacher learning in teacher in-service communities (Graven, 2004; Brodie, 2011). However, there exists a gap in insights into the implications for pre-school teacher learning in such communities. This could be as a result of Grade R only recently becoming an official part of the educational landscape, following the Department of Education’s *Action Plan to 2014: Towards the realisation of schooling 2025* (DBE, 2011) in which it was stipulated that every government school integrate Grade R into schools.

Some researchers, such as Brodie (2011) have focused on Professional Learning Communities (PLC’s) and some, such as Graven (2004) have chosen to focus on CoPs. I have chosen to focus on a CoP for two reasons: the SANCP ENF Program is explicitly designed as a CoP (See Appendix 1); and it is a fully developed theory of learning which has been used successfully, and proved useful, as a theoretical and analytical tool for analysis of teacher learning within such communities (Graven, 2004; Pausigere, 2014; Gcasamba (to come).

My own experiences as a teacher too indicate the need, as well as the desire to develop a connection and collegiality amongst teachers, although it is often the case that the nature of Grade R results in these teachers and children being ‘left-off’ the educational discourse – a view that Grade R is pre-school, and not ‘real’ school is often alienating to those working within this realm. And although I have experienced previous attempts to establish communities which bring these teachers together, these have often been unsuccessful. This presents a challenge for the ENF Program in establishing such a community and I will research and reflect upon these challenges throughout the study.

**RATIONALE OF THE STUDY and RESEARCH QUESTION**

I am pre-primary teacher and a doctoral student with the South African Numeracy Chair Project. Both of these personal identities inform this study. The joint aims of the SANC Project are:

“To improve the quality of teaching of in-service teachers at the primary school level; To improve learner performance in primary schools as a result of quality teaching and learning; To research sustainable and practical solutions to the challenges of improving numeracy in schools; and to provide leadership in numeracy education and increase dialogue around solutions for the mathematics education crisis.”‌ (SANC, 2013)

This research falls within the third aim of the project in that it aims to contribute to searching for sustainable ways forward to the challenges of numeracy education, as the findings of this study should simultaneously speak to:

* the potential for strengthened teacher learning and practice through participation in a developing Grade R community of practice and
* the potential value of using a research informed resource kit as a boundary object for use in the community of practice, classrooms and parent engagement.

I will explain these in more detail shortly

The main aim of this research study is to investigate Grade R teachers’

* evolving ways of being,
* making meaning
* changing identity and
* ways of doing

through participation in a newly established community of practice (Wenger, 1998).

The motivation to focus specifically on teacher learning in this study stems from both a personal experience perspective as well as a research informed one. In my personal experiences, having worked as a pre-primary teacher locally for eight years, I have continually seen and heard of the desire and need for preschool teachers in particular to come together and share ideas, knowledge and experiences from their various careers and contexts.

Teaching can be, in my experience both as a teacher and as a teacher-trainer, an isolating profession. Because as a teacher, you are solely responsible for your class, their work and progress. Although support is often offered over tea in the staff room, and plays a significant role in professional development, this informal support does not offer what a CoP offers – such as a set time to meet; specific goals; a direct focus; and joint enterprise (Wenger, 1998).

Because Grade R has only recently been added officially to the Foundation Phase in most schools in South Africa, the teachers involved in this process are relatively new to schools with an already established and close-knit community of Grade 1 to 3 teachers, thus they are largely ‘newcomers’ as a grade.

Teachers’ professional identity and subsequent teaching practices benefit significantly from the collegial exchange of ideas and resources through the medium of a community of practice. Graven (2002), citing Wilson & Berne (1999) writes about the need for more research in the domain of teacher learning: “As a field, we know very little about what teachers learn across those multiple opportunities (pp.173-174).”

In South Africa, there has been increased focus placed on teacher learning and development, and policy documents now “specify occupational, professional and academic roles and competences for teachers” (Harley, Barasa, Bertram, Mattson, & Pillay, 2000, p. 287). However, despite the call to understand teacher learning being answered in the higher levels of education, there is little local or international research aimed at specifically Grade R teacher learning through participation in a community of practice. This could be as a result nationally as the recent implementation of Grade R in government policies and the subsequent roll-out project (DBE, 2011), as well as education researchers across the globe only recently shifting their focus from school-leavers to the Early Years and ECD. In order to contribute to understanding teacher learning in our uniquely South African context, and understanding of teacher learning in a Grade R specific community of practice (CoP), this study asks the question:

*“What is the nature of evolving Gr R teacher learning through participation in a Grade R community of practice?”*

This study is situated within the primary Grade R CoP, which has as its members both researchers and teachers. A key tool used in this CoP will be a research informed resource kit, known as the Early Number Fun (ENF) kit, developed by Professor Graven, Dr. Stott and the SANC Project Team (See Appendix 1). This standardized ‘reification’ will be utilised in this study as it “serves as a coordinating mechanism” (Wenger, 1998, p. 104) between the researcher-teacher ENF CoP and other, different “constituencies, some of which are communities of practice, some of which are not” (Wenger, 1998, p. 104), such as teacher-parent engagement sessions, and teacher-children classroom interactions.

This is because this Grade R CoP will not exist in isolation, as “we all belong to many communities of practice: some past, some current; some as full members, some in more peripheral ways. Some may be central to our identities while others are more incidental.” (Wenger, 1998, p. 158).

**THEORETICAL FRAMEWORK**

This study will be informed by a sociocultural perspective, drawing largely on the work of Vygotsky in particular. The sociocultural framework and approach was chosen because of this study’s focus, which is the examination of teacher learning, and in particular, the learning of teachers within a community of practice, as sociocultural approaches “emphasize the interdependence of social and individual process in the co-construction of knowledge” (John-Steiner & Mahn, 1996, p. 191).

A sociocultural framework was chosen not simply because it aligns with my own experiences as a teacher and a researcher of learning, by both children and adults, as a process of growing and changing, influenced by external factors, but also because of the versatility and ‘vitality’ of this framework, which has a “range of interpretations and applications” (John-Steiner & Mahn, 1996, p. 191). Vygotsky, as a psychologist specialising in cognitive as well as pedagogical psychology, would have as his central concern the “development and representation of knowledge” (Das, 1995, p. 93). As a result, he focused his attention on the “sociocultural mediation of the learning processes” (Kazulin & Presseisen, 1995, p. 67). Furthermore, “the problem of learning, the development of the mind, and their interrelatedness was a central one for Vygotsky” (Karpov & Bransford, 1995, p. 61). Wood, (1989) surmises that, according to Vygotskian theory, the “*potential* for learning is revealed and indeed often *realised* in interactions with more knowledgeable others” (p.24).

Vygotsky, as a pedagogue, focused much of his theories and studies amongst children and their learning, and in particular saw the process of learning amongst children not as a solitary activity or process, but as a ‘process of appropriation’ (Kazulin & Presseisen, 1995) and this foundational notion has resulted in his theory “engender(ing) a number of educational applications” (Kazulin & Presseisen, 1995, p. 73).

Vygotsky’s theories have therefore influenced, and continue to influence educationalists, and as a result, his views have not only been acknowledged by, but also used successfully, in “studies of teacher learning and professional development” (van Huizen, van Oers & Wubbels, 2005, p. 273). In particular, his ideas have been used in the work of Lave and Wenger (1991) and subsequently influenced Wenger’s theory of learning within communities of practice.

In the late 1980s and early 1990s, it was through the Influence of Vygotsky’s idea that learning was in fact a social process, and occurred as a result of people’s interactions and experiences in their worlds, that a “significant rethinking of learning theory” (Smith, 2003, 2009, p. 1) was developed through the work of Jean Lave and Etienne Wenger in their 1991 seminal work: *Situated Learning. Legitimate peripheral participation.*

Lave and Wenger (1991), although not the first to explore this notion[[1]](#footnote-1)successfully formulated this concept as a ‘descriptive’ tool, which later evolved into a more ‘prescriptive tool’ (Hoadley, 2012). They have looked at learning and tried to place it in “social relationships – situations of co-participation” (Smith, 2003, 2009, p. 3) instead of viewing learning as forms of knowledge which exist within an individuals’ mind. In the introduction to their 1991 book, William F. Hanks writes: “Rather than asking what kind of cognitive processes and conceptual structures are involved, they ask what kinds of social engagement provide the proper context for learning to take place” (p. 14).

In discussing the people involved in these learning processes, Lave and Wenger describe ‘members’ of a community of practice as being “involved in a set of relationships over time” (1991, p. 98) and because they are “organising around some particular area of knowledge and activity;” members have a “sense of joint enterprise and identity.” (Smith, p.3). Hoadley (2012) too describes a CoP as an “important theoretical construct that underlies a particular model of learning, namely, learning in which people, through a process of legitimate peripheral participation, take up membership in and identity which serves as the home of these shared practices (p. 299). Some criticisms have arisen around the adoption of the CoP theoretical framework, specifically that which stems from Lave and Wenger’s earliest work, for use when looking at education, and school-based learning in particular. As Adler (1998) cautions: “a theorising of learning from successful apprenticeship contexts might not be able to unproblematically illuminate or explain success or failure in learning school mathematics” (p. 1). It is also cautioned that “no manager, teacher, or designer can create a community of practice by fiat” (Hoadley, 2012, p. 299). And when working with Lave and Wenger’s work in particular, because their focus was rather on discussions around the nature of legitimate peripheral participation, they did not consider “the relationship between communities as a potential driver for change” (Osterlund & Carlile, 2003, in Cox, 2005, p. 3). However locally, research like Graven (2004, 2005, and 2012) and Graven & Pausigere (2014) have argued that communities of practice are a very useful framework for exploring the nature of teacher learning in in-service teacher communities even while there are challenges. For example, Graven & Lerman (2003) ask what does it mean to ‘minimise teaching to maximise learning’ in the context of a teacher CoP where teaching is the core focus of the CoP and a key aspect of member identities.

This said however, the notion of communities of practice has been described as one of the “most important concepts in social or situated learning theory” (Hoadley, 2012, p. 1). It has been used both as “explanatory framework for learning and as a metaphor for how instruction should take place” (p. 1) and therefore addresses the dynamics of learning as well as the dynamics of teaching. And Lave and Wenger’s resulting notion of situated learning, derived from a social-cultural epistemological viewpoint, has been, and continues to be, a very “influential corrective to previous educational practice” (Cox, p.3). In particular, Lave and Wenger’s work on learning through participation makes their work of “particular interest to informal educators and those concerned with working with groups.” (Smith, p. 8) – such as is the case in this study.

Initially an explanatory theory developed by Lave and Wenger, the concept of CoPs has since shifted in subsequent writings in two significant ways (Hoadley, 2012):

* Moving from the natural formation of CoPs to CoPs which are “explicitly created and fostered” (p. 291) and
* Moving from social aspects towards the physical manifestation of CoPs via external representations and explicit rules” (p. 292).

Many now argue that, although learner capability is an important aspect of teaching and learning, it is the social interactions which take place within a group, and the availability of resources, which contribute to a ‘whole’ learning experience. A main premise of Wenger’s (1998) work is that “learning, in its essence, is a fundamentally social phenomenon, reflecting our own deeply social nature as human beings capable of knowing” (Wenger, 1998, p.3). He goes on to highlight that learning is not a separate, isolated activity: it is not something that people can ‘start’ doing once they ‘stop’ some other activity – it is something which happens all of the time, in and out of formal learning arenas. This resonates with my own perspective

Expanding on his earlier work with Jean Lave, Wenger (1998) offers a social theory of learning which integrates “the components necessary to characterize social participation as a process of learning and growing.” (p. 4). These components are represented below:

**Diagram 1: Wenger’s (1998) Four Component Theory**



In discussing the above diagram, Wenger (1998) explains each of the components as follows:

* *Meaning*; a way of talking about our (changing) ability – individually and collectively – to experience our life and the world as meaningful
* *Practice:* a way of talking about the shared historical and social resources, frameworks, and perspectives that can sustain mutual engagement in action
* *Community:* a way of talking about the social configurations in which our enterprises are defined as worth pursuing and our participation is recognizable as competence
* *Identity*: a way of talking about how learning changes who we are and creates personal histories of becoming in the context of our communities.

(Wenger, 1998, p. 5)

This study will draw heavily on the above conceptualisation of a social theory of learning. In order for this to happen, the framework supplied will be used both as an analytical tool which will guide assessment of findings, *and* it will serve as a guideline for creating the study. This means that the four components above need to be present in some way before data collection can begin. *Meaning* and *Identity* rely on the development of comprehensive, focused interview and questionnaire questions, in order to draw out the participants ‘ways of talking’, ‘ways of changing’ and ‘ways of becoming’. The study of *Practice* relies on the existence and use of “resources, frameworks and perspectives” (p.5), and so the use of a research informed resource kit becomes and integral component of the study. And *Community* and ‘participation’ can only occur if there is a space for a community to develop (whether physically or conceptually), in which mutual engagement can take place. Therefore the study will as the first step, establish a community of practice in which the Grade R teachers can participate.

This same theoretical tool will be used to analyse the nature of the teacher learning which will take place over the course of two years., specifically focusing on learning as theorised as evolving ways of being, belonging, doing and making meaning (Wenger, 1998), in an “explicitly created and fostered” (Hoadley, 2012, pg. 291) community of practice.

The broad implications of participation and resulting learning within CoPs is outlined by Wenger as follows:

“For *individuals*, it means that learning is an issue of engaging in and contributing to the practices of their communities

For *communities*, it means that learning is an issue of refining their practice and ensuring new generations of members

For *organisations*, it means that learning is an issue of sustain the interconnected communities of practice through which an organization knows what it knows and thus becomes effective and valuable as an organisation.” (Wenger, 1998, p. 8-9)

Although it cannot be assumed that a fully functioning CoP will be developed through this study, it has been designed intentionally as a community of practice, using Wenger’s (1998) Indicators:

* sustained mutual relationships – harmonious or conflictual;
* shared ways of engaging in doing things together;
* the rapid flow of information and propagation of innovation;
* substantial overlap in participants’ descriptions of who belongs;
* specific tools, representations, and other artefacts;
* a shared discourse reflecting a certain perspective on the world (p.125-126)

**METHODOLOGY and RESEARCH DESIGN**

Due to the intended purpose of this study, as well as the socio-cultural framework used, a qualitative interpretive methodology will be used. It will be focusing on teacher learning and evolving ways of being through participation in an in-service program (The SANC ENF CoP). As such, a range of qualitative research methods will be used, including questionnaires, interviews, classroom observations, video recordings, participant observations, field notes and researcher’s journal.

Hitchcock & Hughes (1995) indicate that due to the complex processes of teaching, learning and education itself, the intention to focus solely on the product of the data, or in fact a ‘cause and effect’ approach to social research would be remiss, as it would provide little value to the *understanding* of the myriad of processes therein. They therefore suggest the use of a qualitative research approach as the most effective and suitable route in studies of this nature. This approach is in line with Lave & Wenger (1991) as well as Wenger (1998) as it views knowledge as both personal and social.

Supporting a qualitative research approach, using appropriate data collection techniques informed by a socio-cultural theory of practice, should, as Lave and Wenger (1991) suggest, include what teachers say about practice and do within practice. These data collection techniques therefore should include teacher’s personal experiences, life stories, interviews, case studies, artefacts, cultural artefacts and observational texts (Denzin & Lincoln, 2000). In order to access what teachers say and what they do, interactions must be based on a close relationship between the researcher and the participants, and requires mutual respect (Lave & Wenger, 1991; Wenger, 1991).

*Sampling*

The South African Numeracy Chair (SANC) project at Rhodes has worked over the past few years to improve the quality of teaching and learning of mathematics. As part of this overarching goal, the project has established a teacher support network called the Numeracy Inquiry Community of Leader Educators (NICLE). In the second phase of the project, these already established relationships with schools whose teachers participated in the NICLE project will be utilised in order to invite teachers to participate in the ENF program. Although different teachers will be involved, it is assumed that previous interactions with the SANC Project will garner support from the schools as a whole (See Appendix 1).

As Descombe (2007) points out, as a social researcher, it is almost impossible to collect relevant data from everyone in a category, so the alternative is to collect evidence from a “portion of the whole” (p. 13). Therefore although data will be collected in the form of questionnaires from all participating teachers (estimated to be 30 in total), this data will be supplemented by interviews, which provide for thick descriptions, from a smaller sample of 4-6 teachers. Those willing to participate will be selected from the larger group, and will therefore provide a “representative cross-section of people or events in the whole population being studied” (Descombe, 2007, p.13). This study’s sample can therefore also be viewed as a ‘convenience’ sampling, which involves choosing a sample from a group or community of teachers which, through my involvement with the SANC Project as a whole, I have easy access to (Creswell, 2012).

The teachers themselves will be teaching in differently quintiled schools, and will be from different backgrounds, with different levels of qualification and experience. This will allow, not for comparison, but for more detailed and rich understanding of the diverse South African education context, specifically the Grade R landscape therein.

*Data Gathering Techniques*

Questionnaires

Questionnaires will be used because, according to Descombe (2007), they provide the most efficient way of gathering information from participants, and provide the simplest way to gather significant amounts of data (Hopkins, 1985). Adding to the appeal of utilising questionnaires is their potential to reveal information about the perceptions as well as the beliefs of the research study participants (Johnson & Christensen, 2000).

The first questionnaire to be used in the SANC Project ENF CoP is currently in development by the SANC team (see Appendix 2). This questionnaire is focused on gathering basic information about the participating teachers. This questionnaire will gather information regarding qualifications, teaching experience previous workshop/training participation, as well as the teachers’ views on Grade R teaching practice and appropriate Grade R learning. Although this questionnaire was not designed specifically for the purposes of this study, the information gathered through its distribution will be significant to my research in that it will provide base-line information highlighting the individual contexts of the participants. It would also be counter-productive a waste of time to distribute a second, similar research-specific questionnaire to the participants.

This first questionnaire will also provide insights in to the participants’ ‘personal histories’ as well as their present professional and personal contexts. A second round of questionnaires, to be distributed during the initial stages of the program, will take on a more narrative approach. For example, participants will be asked to represent their perceptions of teaching and learning in Grade R by completing the following question: “Ayabulela is a successful and highly respected Grade R teacher in her community because….”

This approach to gathering ‘narratives’ from participants is supported by work by Bjuland, Cestari & Borgersen (2012) in their work on professional mathematics teacher identity and is inspired by the work of Sfard and Prusak (2005) in this approach, and provides a useful data gathering tool as “indicators of professional identity may be detected through text and discourse” (Bjuland et. al., 2012, p. 406) as well as providing essential opportunities to communicate in ways that articulate their identities (Holland, et. al., 1998; Sfard & Prusak, 2005).

The reason I have chosen a questionnaire rather than an interview format for this particular narrative data set is two-fold:

Firstly, it would take too long to interview every participant from the broader sample (30 participants) thoroughly, as there will not be time to allow the respondents to think deeply about or properly structure and review their responses, jeopardising the ‘richness’ and honesty required from these particular responses. Secondly, as is sometimes the case with one-on-one semi-structured interviews, the participant may be influenced by what he or she believes the interviewer wants to hear, which could call into question the validity of the information gathered. This is iterated by Graven (2004): a questionnaire provides opportunity to “revise their thoughts and provide access to ‘written discourses’ that can be different to ‘verbal discourses’ because the activity of filling in the questionnaire positions the teachers differently to interviews” (p. 114).

Interviews

As the focus of this study is on the teachers’ learning and evolving ways of being, it is important to consider the teachers’ attitudes, feelings and values as these are significant to their personal and professional identities. Interviews will be conducted to obtain in-depth information about a participant’s thoughts, beliefs, knowledge, reasoning, motivations, and feelings (Johnson & Christensen, 2000). In order to conduct interviews in which the participants feel able to share these inner thoughts with me, it is vitally important that a positive one-on-one repertoire is established, consisting of trust of the researcher, and appreciation by the researcher of the teacher’s thinking and reasoning (Cobb et al., 2003).

These interviews, due to time constraints as well as issues surrounding gathering and managing huge data sets, will only be conducted with the willing participants within the smaller sample of teachers (4-6 teachers). As the purpose of conducting interviews is to gather richer and more informative data than that gathered from questionnaires (Koshy, 2005), it is vital that these interviews not be rushed.

A semi-structured interview schedule with open ended questions will be utilised so as to illicit (as much as is possible) the teachers to ‘open-up’ and reveal their internal thinking and reflect on their lived realities, as this type of interview allows the person being interviewed to “go beyond the designed scope” (Bernard, 1988, p. 205).

All interviews will be recorded, after obtaining appropriate permissions, and detailed notes taken throughout. The videos will be transcribed, with the transcriptions being added to the data set, and will also be used a tool to stimulate recall (both by the researcher and by the participants of the smaller sample). Stimulated recall and reflection will allow me to represent the teachers’ stories and their narrative identities through thick descriptions. Participants will be encouraged to perform member checks on all transcripts, in order to avoid misrepresentation.

Interview data (videos, transcriptions and researcher notes) will be analysed according to emerging categories or themes, focusing on selecting key phrases, or ‘utterances’, which support the emerging themes. As Gillham (2000) suggests, if data gathered over time ‘converges’, and agreement is seen across the multi-faceted evidence (also referred to as triangulation); then it can be assumed that it is representative of the actual situation.

A ‘superficial’ analysis of the data gathered will be conducted after each set of interviews, and is intended to be used to inform some aspects of the next cycle of data collections, as through engaging with the teachers, I hope to create an environment where the data collection processes are ‘mutually developed’ (Adler, 1996).

Classroom observations, video recordings and researcher’s reflective journal

The ENF Program participants who agree to participate in the smaller sample of case studies will be observed in their classrooms while teaching. These observations allow the researcher an opportunity to gain insights into the nature of teacher learning as it relates to what the teachers do.

These observations will be videoed, and field notes will be taken in the form of researcher observations and recorded in my reflective journal. These observations will, it is anticipated, serve two purposes. The primary purpose will be to provide the researcher with insights into the teachers’ potential evolving ways of being as this concept relates to the context in which they are teaching, as well as their professional practice. A secondary purpose of these videoed observations will be to provide the teachers with a tool that can be used by them for their own professional development and reflexive practice, in that they will “stimulate reflection and discussion on practice” (Graven, 2004, p. 115).

Two main purposes of this study motivate for the use of a researcher reflective journal. First of all, as I am positioned as an observer-participant, observation notes taken during classroom practice sessions will, according to McMillan’s (2004) definition, serve as field notes as they written descriptions of both what was observed as well as my own interpretations of what was observed. This will help me to keep track of what was done and said, and so help to develop the next cycle of data collection. Secondly, as a researcher embarking on her own journey of academic development, my reflective journal will provide a space in which I can articulate informal musings and thoughts throughout the research process, as well as reflections on the ENF Program sessions which I will attend, and finally as a record of meetings with the SANC Project team and my supervisor. These will serve as backup data for confirming and checking (Pausigere, 2014).

The video recordings, as with the interview recordings, will be transcribed, and along with researcher field notes, will allow for triangulation of data as well as providing rich data and thick descriptions, useful in the development of the narrative vignettes which will emerge from the case study research. Transcriptions and supporting field notes will be given to participants for member checking.

*Data analysis process*

 Hatch, (2002), describes as an integral part of qualitative research the researcher’s efforts to make sense of the data and interpret it, and is the ‘systematic search for meaning’ that will “allow researchers to see patterns, identify themes, discover relationships, develop explanations, make interpretations, mount critiques, or generate theories” (Hatch, 2002, p. 148). This includes, in qualitative studies, data analysis that “consists of examining, categorizing, tabulating, testing, or otherwise recombining both quantitative and qualitative evidence to address the initial propositions of a study” (Yin, 2003, p. 109). Following Creswell’s (2013) approach, which although focused on case studies is applicable to qualitative studies as the researcher, intent on identifying emerging themes from the data, collects open-ended data, through questionnaires, interviews and observations of practice.

This study will, within the appropriate qualitative study processes, utilise Wenger’s (1998) four component theory in order to examine teacher learning with the ENF CoP. This four component theory, consisting of Meaning; Practice; Community; and Identity will provide a baseline from which an analytical framework will emerge. This analytical framework will look specifically at teacher’s evolving ways of being, ways of becoming, ways of making meaning and of learning as doing (Wenger, 1998). In order to identify the nature of teacher’s learning, their practice while involved in the CoP will be examined in terms of:

* ‘joint enterprise’
* ‘mutual engagement’
* ‘shared repertoire’

These will provide an analytical frame as well as a language of description for the multiple sets of data gathered throughout the study.

It is also intended that teacher reflection and resulting reflexive practice is examined through the above analytical frame. Lee (2005) provides a suitable analysis tool to use, in the presentation of three levels of reflection which may (or may not) be observed:

* “Recall level (R1): one describes what they experienced, interprets the situation based on recalling their experiences without looking for alternative explanations, and attempts to imitate ways that they have observed or were taught.
* Rationalization level (R2): one looks for relationships between pieces of their experiences, interprets the situation with rationale, searches for ‘‘why it was,’’ and generalizes their experiences or comes up with guiding principles.
* Reflectivity level (R3): one approaches their experiences with the intention of changing/ improving in the future, analyses their experiences from various perspectives, and is able to see the influence of their cooperating teachers on their students’ values/behaviours/achievements”

(Lee, 2005, p. 703)

A strategy proposed by Merriam (1998) is to conduct data collection and analysis of the data simultaneously, which will allow for generating categories according to emerging themes, and constructing theories from these. As mentioned earlier, this process of simultaneous analysis throughout the data collection period will allow for mutually developed (Adler, 1996) data collection processes which will inform the research process as the study unfolds.

Relevant data, from questionnaires, interviews, classroom observations, and researcher reflective journals will be coded, by identifying and drawing out specific utterances and examples of practices which fit into categories related to the research question. All relevant information will be, in the final writing stages of the study, compiled into a coherent whole which will be representative of the context of the study.

**VALIDITY AND RELIABILITY**

Cohen et al (2000) advocate the use of ‘triangulation’ amongst qualitative data collected. A this study is not focused on determining the success or effectiveness of the SANC ENF program, but is rather concerned with the nature of teacher-learning within an in-service program, the need for the qualitative data to be used for comparison is unnecessary. Therefore, triangulation is used against which findings can be assessed for trustworthiness across the various sets of data. The evolving nature of teacher learning is not a process which should be quantified nor compared, as this presents the risk that the complexity and nuanced nature of the learning process will be lost, and would potentially invalidate the richness of description afforded by the qualitative research process (Graven, 2004).

In order to ensure that the participants in the study are honestly and accurately represented, Maxwell’s (1992) process of ‘member-checking’ will be used. This process allows for participants to review relevant data and provide feedback to the researcher. Collecting rich data and thick descriptions from participants will also enable enhanced validity (Maxwell, 2004).

A ‘critical friend or voice’ (Goodell, 2006) will also be called on to ensure validity and reliability, performing a critical examination of the themes and categories which will emerge, ensuring correlation between data sets is truthfully represented and authentic. Merriam (1998) holds the view that ensuring reliability in the social sciences as humans, and their myriad of behaviour, is never static and as Adler in Graven (2002) argues, it is unreasonable to expect others to discover these same categories and therefore argues that it should be established instead how recognisable these categories are to others, in order to ascertain reliability – therefore, a ‘critical friend’ will be consulted in terms of the ‘recognisability’ to others of emerging categories.

Maxwell and Miller (2000), in Goodell (2006) also call for a ‘continuous review’ of the themes and categories, in order to ensure credibility. This process will be employed in this study.

**Ethics**

My passion for finding sustainable ways forward for providing quality Early Childhood Education for South African children is the driving force behind this study, as well as a desire to contribute to the understanding of what is a fledgling field of academic research. Because of this passion, I believe I will, through this study, be able to make a significant contribution. However, my passion for the field will not be enough – I have not yet had the opportunity to form meaningful relationships with all the participants in the study.

Therefore, I am mindful of power relations and distribution (Corcoran, 2011). As a teacher-researcher, there is the risk that I am viewed by the participants in the program as ‘more-knowledgeable’ other. Although not a co-ordinator of the ENF program, I do have a long-standing relationship with the co-ordinating team because of my involvement in SANC. I am therefore aware that initially, I may be viewed as part of this authority. However, throughout the SANC Project’s existence, the ‘authorities’ therein have endeavoured themselves to eliminate the power differences in their teacher training programs, as they re-iterate the project’s goals of working *alongside* local teachers, forming mutually beneficial partnerships.

Because my intention is to examine teacher-learning, it must be made explicit from the onset that I too am involved in the project as a *learner.* My background and level of experience will help in this regard, as it is most likely very different from the participants’ own histories. For instance, I only have 8 years of teaching experience, and that experience was at only one school. I am therefore a newcomer to their realm, and have no understanding of their professional context – this I will re-iterate throughout the study, so as to reassure the participants that I am not there to pass judgement, but rather to learn from them, and utilise their ‘funds of knowledge’ in order to contribute to finding sustainable ways forward for quality Grade R learning in South Africa. With this in mind, I will be encouraging the teachers to guide the way they talk about and make meaning of their own learning within this program.

Ethical considerations and procedures throughout the study will also conform to those stipulated by the University. Permission to conduct this research will be requested from the University and the Department of Basic Education. Principals of the various schools, as well as all of the teachers willing to participate will be asked for their permission, while being assured that the names of the schools, the teacher’s names and all other identifying characteristics of the participants will remain anonymous and confidential. They will also be informed of the full extent of the purpose of the research, and the proposed future uses of said research. Guest speakers on the ENF program will be afforded the same treatment. Parents of children and children who may be a part of select classroom observation video recordings will also be informed of the research, its intentions, and necessary permissions will be obtained before entering the classroom. Confidentiality, anonymity and privacy will be guaranteed to all involved, and they will be explicitly informed of their right and freedom to withdraw from the study at any point.

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1. For earlier work, see Orr, 1990 and Constant, 1987 [↑](#footnote-ref-1)