Professional Learning Communities (PLCs): rural teachers' perspectives and experiences in Vulindlela Circuit

By

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ABSTRACT

The South African education system has undergone changes since 1994, the introduction of Outcomes Based Education (OBE) approach in 1997 and also the Revised National Curriculum Statement (RNCS). These changes require collective support of all the stakeholders within the school. Hence, the present literature has highlighted the role of Professional Learning Communities (PLCs) as a way that can lead to overall school improvement. Central to the PLCs concept, is the collaboration from all the individuals within and among the schools. The concept of working together for a common goal is essential in terms of how the schools function. This study sought to demonstrate how teachers' enacted the concept of PLCs in the two selected schools and the way they enacted the PLC concept.

The study was conducted in two secondary schools and two teachers and one HOD were selected in each school. The total number of participants was six and the methods of

DECLARATION

I **Sikholiwe Goodenough Zwane** declare that

i.   The research reported in this dissertation, except where otherwise indicated, and is my original work.

ii.   This dissertation has not been submitted for any degree or examination at any other university.

iii. This dissertation does not contain other persons' data, pictures, graphs or other information, unless specifically acknowledged as being sourced from other persons.

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_15/04/13_

Sikholiwe G Zwane   **Date**

As supervisor, I agree to the submission of the dissertation

_15/04/2013_

Dr TT Bhengu   **Date**

II

1 August 2012

Mr Sikholiwe Goodenough Zwane 9507424
School of Education

Dear Mr Zwane

Protocol reference number: HSS/0565/012M
Project title: Professional Learning Communities (PLCs): rural teachers' perspectives and experiences in Vulindlela Circuit.

Provisional approval- Expedited

This letter serves to notify you that your application in connection with the above has been approved, subject to necessary gatekeeper permissions being provided.

This approval is granted provisionally and the final approval for this project will be given once the above condition has been met. In case you have further queries/correspondence, please quote the above reference number.

Kindly submit your response to the Chair: Prof. S Collings Research Office as soon as possible

Yours faithfully

Professor Steven Collings (Chair)

/px

cc Supervisor Dr TT Bhengu
cc Academic leader Dr D Davids
cc School Admin. Mrs S Naicker

DEDICATION

I dedicate this study to my Zwane clan, my mother and late father who inspired me to continue studying. To my brothers and sisters for their moral support they have given me over the years. To my children, Awande, Mpilo and Londiwe; to my wife Nokuthula for the sacrifices she has made during the time I was doing this study. Lastly, to my principal and my colleagues for their understanding when I needed time to do the study and their support during difficult times.

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> ➢ The teachers who were participants in the study

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ABREVIATIONS

DBE   - Department of Basic Education

PAM - Personal Administration Measures

OBE   - Outcomes Based Education

SASA - South African School's Act 84 of 1996

SMT - School Management Team

RNCS - Revised National Curriculum Statement

NCS   - National Curriculum Statement

HOD - Head of Department

TED   - Teacher Education Development

ANA - Annual National Assessment

PLC   - Professional Learning Community

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CHAPTER ONE

INTRODUCTION TO THE STUDY

1.1 Introduction

The purpose of this study was to investigate teachers' understanding and application of the concept Professional Learning Communities (PLCs) in the Vulindlela Circuit in Pietermaritzburg. Through this study, I wanted to explore teachers' experiences and perspectives in terms of how they understood and enacted the PLC concept, as well as to understand why they enacted this particular concept the way they did. This chapter provides the background of the study, the rationale, key research questions. The chapter also provides a brief outline of the research design which was used in the study, as well as, the conceptual framework which informed it. This framework comprised four theories, namely, the collaborative learning theory, distributed leadership theories, democratic theory, as well as constructivist theory. Although these concepts and literature review are introduced in this chapter, a detailed discussion is presented in Chapter Two.

1.2 Background to the study

Since 1994, the South African education system has gone through numerous changes, which include the introduction of the Outcomes Based Education (OBE) approach in 1997, the Revised National Curriculum Statement (RNCS) in 2002, which later became National Curriculum Statement - (NCS) and recently the Curriculum and Assessment Policy Statements (CAPS). These curriculum changes in the education system posed various challenges to the teachers as implementers of policies (Norms and Standards for Educators, 2000). Challenges include the lack of training that is required to implement new changes, ill-discipline among the learners, drug abuse by learners and overcrowding in some schools.

In addition to these challenges, teachers were expected to implement new changes; however no sufficient training had been provided by the DBE. This scenario has tended to exacerbate the difficulties that the teachers were already confronted with in their respective subjects. These included the lack of subject knowledge, lack of resources to support teaching and poor infrastructure in most rural and disadvantage schools (The National Policy on Whole School Evaluation, 2002). In the light of these challenges, it has been highlighted in literature that PLCs encourage people to work together to achieve a common goal (Hord, 1997; DuFour & Eaker, 1998; Hord, 1999; Senge, 2000).

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In order for the schools to succeed, it is imperative that teachers share ideas and learn from each other and from one another. This working together and sharing of ideas involves collaborative learning. Vygotsky (1978) maintains that intellectual ability develops through participation with others in joint activities. Collaborative learning would be the acquisition by individuals of knowledge, skills, or attitudes that occur as a result of group interaction (Jianhua & Kedong, 2001). This in turn, could address some of the challenges that are raised above, such as the lack of subject knowledge or content on the side of the teachers. Through working together and learning from one another, teachers can be able to share ideas and to solve challenges they face, and thus, learn new knowledge and skills. It is through PLCs that teachers are able to interact in order to share ideas, solve problems, improve subject knowledge and learn from one another (Shulman, 2004).

The Department of Basic Education (DBE) has produced a document on Integrated Strategic Planning Framework for Teacher Education and Development in South Africa, 2011-2012. This document was formulated during the South African Teacher Development Summit that was held in Johannesburg in June-July, 2009. The Summit aimed at exploring the ways and means of enhancing the quality of the Teacher Education and Development (TED) in order to ultimately improve the quality of teaching and learning. The fundamental aim of the Summit was to improve teaching and learning in all the subjects. However, most emphasis was put on science subjects, especially in areas where there was a huge shortage of qualified teachers, for example, Physical Sciences and Mathematical subjects. In these subjects, although some teachers are fully qualified, they tend to struggle to teach Physical Sciences and Mathematics effectively. This may be linked to a lack of subject knowledge or teaching methods or both. Consequently, poor matriculation results in science subjects are prevalent, particularly in rural areas. The Integrated Strategic Planning Framework for Teacher Education and Development in South Africa document highlights the importance of forming the PLCs. Through this document, the DBE promises to expand peer-learning opportunities among colleagues especially teachers. Fullan (2005) defines PLCs as people working together for common purpose which eventually leads to individual development and school improvement.

Therefore, the importance of PLCs is that professional people come together to share their experiences about various aspects of their professional lives. These include knowledge, subject content, ideas and values about the work that they do as professionals. This interaction could in return improve their subject knowledge in their respective subjects in term of school context. The results of Annual National Assessment (ANA), 2010 in primary schools, have indicated poor performance in Numeracy. In secondary schools, between 2008 and 2010, there has been poor performance in Grade 12 results in Physical Sciences and Mathematics (DBE Report, 2011). Perhaps, through active teacher participation in some form of professional learning communities, ideas of how to solve the problems of poor achievement in these subjects can be shared and learner may benefit.

The other importance of PLCs is its contribution in providing a suitable platform to improve the fundamental aspects of the schools, that is, teaching and learning through collective learning (Gerlak & Heikkila, 2011). It is therefore imperative for teachers to be knowledgeable about subject content so that they can teach with confidence. My personal experiences about collaborative teaching are that it assists teachers in understanding subject content better. In some areas that I am familiar with, teachers work together and share ideas to enhance subject knowledge through the forming of clusters and subject committees in their respective subjects. The aim for these clusters and subject committees, among other things, is to share subject knowledge and assist each other so that they can improve their teaching. These subject clusters and subject committees can be termed PLCs or communities of practice which is the area of focus for this study.

My initial contention is that if teachers work as a collective, there is a likelihood that their subject knowledge in their respective subjects will be enhanced (DBE, Strategic Planning Document 2011). Norms and Standards for Educators (2000) emphasises that educators are expected to work with other practitioners in team teaching. It is based on the above background that, I think, it is important to research about the role of PLCs and the extent to which they influence quality teaching in the selected schools and, perhaps, even communities. Given that this was a small qualitative research, it is highly unlikely to yield the results that can be used throughout the country or KwaZulu-Natal province. Therefore, the purpose of conducting this study, amongst other things, is to explore the concept of PLC through teachers' perspectives and experiences of how they have enacted the role of PLC in the selected schools.

1.3 Rationale for the study

The rationale for the study is based on, both my personal and professional experiences on one hand, and my involvement in academic activities on the other. Personally and professionally, I serve the KwaZulu-Natal Department of Education (KZNDoE) as a Head of Department (HOD) for Sciences Department at my school that is located in the Vulindlela Circuit. Therefore, I have been exposed to a lot of challenges that teachers face especially in Physical Science and Mathematics. These challenges include the lack of skills in both teaching and assessing strategies, lack of resources such as Science laboratories, minimum support from key stakeholders such as Subject Advisor or Educational Specialist as they are also known. The lack of subject knowledge or content is also a major problem. I have seen teachers working in groups of what could be termed community of practice. For instance, I have seen them networking with other teachers within their fields, attending workshops, seminars and in-service trainings.

According to Killion and Roy (2009), the difference between workshop learning and professional learning is that professional learning is result driven and result based. On the other hand my personal view is that workshop learning is more about planning and discussing changes in the subject without much focus on the results. Teachers sometimes invite other colleagues to teach one another's subjects using collaborative methods of teaching and learning or sharing different chapters in a grade. I was therefore curious to know their perspectives and experiences of teaching and sharing information and skills in this fashion within the context of rural South African schools.

Academically, I am interested in understanding my field and experiences of my colleagues more. I have done Bachelor of Education Honours (BEd-Hons) and I am currently in the process of completing Master of Education (MEd) in the Educational Leadership, Management and Policy (ELMP) discipline at the University of KwaZulu-Natal. Being involved in the studies in this discipline and at these levels, I have been exposed to various theories and concepts. As I interact with colleagues and literature, I have been fascinated by the concept of Professional Learning Communities. I have been more interested in the studies around it, particularly when it comes to the benefits of establishing and utilising these communities. I therefore believe that the promotion of collaborative leadership and PLCs have the potential to address various challenges related to ineffective teaching. In these communities, I see possibilities for rural schools improving the quality of teaching and learning, despite deprivations like isolation, poor infrastructure and lack of information and

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so on. That is why I became interested in understanding how teachers enacted this concept at their schools, and in the manner in which they did.

Some literature highlights the efficacies of Professional Learning Communities as a powerful staff development approach and possible strategy for school change and improvement (Hord, 1997). My personal view is that the school can only succeed through collective efforts of all the stakeholders working collaboratively. Schools that learn and promote PLCs are likely to succeed because of the collective efforts of all individuals (Senge, 2000). Hence, DuFour and Eaker (1998) encourage schools to reflect on their collective capacity to address the learning needs of their students. My assumptions are that the establishment and the promotion of PLCs could lead to collective learning, sharing of a vision, sharing of values, sharing of leadership, supportive roles, collaboration and accountability. Consequently, it may enhance teaching and learning of Physical Sciences and Mathematics. My view is that if the PLCs are not established, promoted and sustained, many teachers may continue to struggle to teach Physical Sciences and Mathematics content, particularly within the rural contexts. In view of the focus of the study, the study is driven by the research questions listed in the following section.

1.4 Key research questions

- What are the experiences of rural teachers regarding the relationship between Professional Learning Communities and the teaching of science subjects in Vulindlela Circuit?

Sub-questions

- How is Professional Learning Communities concept enacted by the rural teachers?
- Why do the rural teachers enact the concept of Professional Learning Communities the way they do?

1.5 Research Design

This study used the qualitative approach to research which was located within the interpretivist paradigm. The interpretivist paradigm provides a platform for a researcher to look at the issue of subjectivity and the construction of social action (Terre Blanche & Durrheim, 1999). The case study focused on two (2) rural secondary schools that were situated in Vulindlela Circuit, outside the city of Pietermaritzburg. According to Cohen, Manion and Morrison (2011), a case study provides unique example of real people in real

situations, enabling readers to understand ideas clearly than simply by presenting them with abstract theories or principles. In each school there were three (3) teachers selected as participants, that is, two (2) science teachers and a Head of Department (HOD). This means that there were six (6) participants in total. The data generating instruments were semi-structured interviews, document review, informal observations and a reflective journal. The semi-structured interviews were used to generate data by interviewing individual teachers. The document review entails checking all relevant documents that teachers have in their possession as long as the documents contain relevant information related to subject content. During the period of the study it is always important to be observant, hence I decided to use observation technique as a data generating instrument. In addition, the reflective journal was also used to record daily activities, my reflections about what I saw and thought about while on the field of study.

1.6 Conceptual framework

The conceptual framework that was used in this study includes collaborative learning theory, distributed leadership theory, democratic theory and research framework of constructivism theory. Collective learning, shared practice, shared vision and supportive conditions are some of the concepts constituting the framework of this study. The reason is that the study is informed by different theories which I think are essential in understanding the concept of PLCs within the South African context. The dynamic and diverse context of South African education system emanate from different social, economic, political and cultural contexts. Hence, it is imperative that I use more than one theory to broaden the horizon in terms of understanding these concepts and their application.

Firstly, collaborative learning theory emphasises the notion of working together in collaboration with others in order to improve teaching and learning (Gerlak & Heikkila, 2011). Hence, I thought this particular construct was essential in analysing the concept of PLCs. Secondly, distributed leadership theory is fundamentally important in making sense of the concept of PLCs because teachers within the school context are arguably leaders in their own right (Harris & Chapman, 2002). For instance, this can be witnessed in various setting such as different school committees, teacher union structures, subject associations, subject clusters and subject committees. Thirdly, democratic theory was also deemed important because people these days are generally viewed as wanting to play more participatory roles in the decision-making processes (Woods & Gronn, 2009). Such decisions may include a broader range of issues such as when, how, with whom they want to meet and discuss what

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issue. Therefore, freedom of association becomes important as teachers try to find their ways around teaching problems that they may be facing in their respective classes and schools. Lastly, constructivist theory is of paramount importance as it emphasises the notion of learning as a social construct and reciprocal process (Gagnon & Collay, 2006). This study was about teachers learning from each other and from one another, and such actions have elements of reciprocity and socially constructed learning may result out of interactions among individual teachers.

1.7 Literature review

The literature review focused on the following elements: how different authors have defined PLCs; it also shed some light on the role of PLCs in relation to school improvement and the impact that the PLCs can make in terms of how schools are managed; it also looks at the possible benefits of emphasising the importance of working as a collective in schools. For its success the school as an organisation depends on the individuals working together to achieve its goal of improving academic performance. When people work together towards one common goal they are likely to share, that is, accountability, vision, values and leadership (Hord, 1999). Martin-Kniep (2008) states that schools are about the culture of teaching and learning and this can all be achieved if people within the school share vision, leadership and accountability. Hord (1997) further highlights the characteristics of a Professional Learning Community by saying that it is about supportive and shared leadership, shared values, shared vision, collective learning, supportive conditions and shared practice. Literature review will be discussed in more details in chapter two of the study.

1.8 The outline of the study

The aim of this chapter was to set the scene for the study by outlining key aspects of the chapter. This section provides an outline of the whole study. The report of this study is divided into five chapters.

Chapter One

This chapter outlines and provide a description of the nature of the study, the background, the research rationale, the conceptual framework, the key research questions, literature review and conclusion.

Chapter Two

This chapter provides a detailed discussion of the literature that was reviewed and the conceptual framework that illuminates the key issues that were studied.

Chapter Three

Chapter Three focuses on the research design and methodology that was used in generating data that would address the key research questions. The justification for both the methodology and methods that were used is provided.

Chapter Four

This chapter deals with presentation and discussion of data that was produced through individual interviews, document review, observation and reflective journals.

Chapter Five

This chapter presents the findings and concludes by making recommendations that can be considered for further research and practice.

CHAPTER TWO

CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

2.1 Introduction

This chapter discusses in detail the conceptual framework that informed the study, as well, as the literature reviewed. It also discusses the landscape of Professional Learning Communities (PLCs) in terms of current thinking and debates, including the research projects pertaining PLCs. The literature review includes the definitions of PLCs, possible benefits of PLCs in South African schools, some challenges of PLCs, and it ends with a conclusion. The aim of the literature review was to get insight about issues relating to the focus of the study.

The concept of PLCs has come into prominence recently in most countries because of its role in school improvement and change (Foskett & Lumby, 2003). The literature I have reviewed, discusses the enactment of PLCs in different countries and the characterisation of this concept by different practitioners in the United States of America (USA), Australia, Austria and South Africa. In these three countries (USA, Australia and Austria), a lot of research has been done in the area of PLCs. Current debates that are captured in the literature are important in understanding the enactment of the PLCs within South African context and, perhaps to the African continent as well. As part of my discussion of the conceptual framework and literature review, I think it is imperative to shed some light on the context in which the concept of PLCs manifests itself in South African rural schools.

In South Africa, teachers have formed what can be described in literature as PLCs. However, teachers use various names and configurations to characterise the concept of PLCs. They have Subject Clusters and Subject Committees in their respective schools and the aim of these Subject Clusters and Subject Committees were, among other things, for teachers to share ideas about their school work. According to Sergiovanni (1994), PLCs are meant to do things differently, that is, develop new kinds of relationship, create new ties and make new commitments. This can be attributed to the fact that in PLCs, teachers engage each other and from one another in order to learn from one another. This requires a lot of understanding and commitment from teachers themselves. Teachers, therefore use PLCs as a platform for them to engage each other about subject content. These Subject Clusters and Subject Committees existed in all subjects in most schools but most emphasis was on Science subjects. Science subject teachers are faced with challenging content that they have to teach, and therefore, it was important for them to collaborate with other teachers so that they become better Science

teachers. In South Africa, the curriculum has been revised on numerous occasions, which has made it difficult for teachers to settle. For example, recently there has been an introduction of CAPS. As a consequent of these changes teachers used Subject Clusters and Subject committees to discuss curriculum changes. Both the Subject Clusters and the Subject Committees existed at two different levels one at the school level and another at the circuit level. It is through these Subject Clusters and Subject Committees that the concept of PLCs manifested itself within the school context as well as outside school. Now that I have illuminated the discussion on the PLCs manifestation within the school context and outside school, I will now discuss the literature in relation to conceptualising of the PLCs.

2.2 Conceptualising Professional Learning Communities

Hord (1997) states that PLCs involve people working together for a common objective. For its success, the school as an organisation, depends on the individuals working together to achieve its goal of improving academic performance. Martin-Kniep (2008) defines PLCs as forums in which participants embrace the privilege and responsibility of learning individually and collectively. Therefore, the purpose of a PLC is that collectively, people work together to improve their thinking and practice. This is done through the sharing of ideas towards to achieve one common goal. Hord (1997) states that schools are about the culture of teaching and learning and this can all be achieved if people within the school share vision, leadership and accountability. Hence, Hord (1997) further highlights the characteristics of a Professional Learning Community; that it, is about supportive and shared leadership, shared values, shared vision, collective learning and supportive conditions, as well as, shared practice. These characteristics indicated how collective responsibility of the outcome in a school can accomplish if all individuals work together for a common goal.

In South Africa, the performance of the school is measured through its matriculation performance; hence, subject teachers and internal school departments play a major role in how the school performs in matriculation. Therefore, the characteristics highlighted above are typical signs of what a South African school context can be, and perhaps should be. That is fundamentally based on a collective learning community conception. This study has drawn on a number of literature pieces which indicate that schools' successes could only be achieved through collaboration and teamwork. That is why some authors argue that schools need to be transformed if they are to be successful. On this issue, Thiessen and Anderson (1999) for example, talk about "transforming schools through PLCs''.

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DuFour and Eaker (1998) encourage schools to reflect on their collective capacity to address the learning needs of their students. One of the most important aspects of the school leadership and management is capacity building and collective responsibility of what the school will become. The success of the school is not based on an individual but rather on the collective contribution of all individuals. Senge (2000) acknowledges the importance of PLC in schools and recognises schools as a meeting ground for learning. Smylie and Hart (1999) emphasise that student learning is inextricably tied to teacher learning and collaboration. Melanie (2000) argues that teachers remain ill-prepared to teach students successfully because of the lack of subject content of their own.

Newmann and Wehlage (1995) specifically identify PLC as an arrangement identified by clear and shared purpose, collaboration and collective responsibility for student learning. Wald and Castleberry (2000) speak of establishing staff development plans, engaging staff through collaborative listening and learning. Boyd and Hord (1994) argue that leadership is essential for the creation of a learning community whose culture is shaped by an accumulation of hundreds of leaders' actions. Beckhard and Pritchard (1992) cite leadership and note that a learning mode only occurs when an organisation's top leaders understand the process. Hord and Rutherford (1998) talk about the gains for staff and students when the staff members engage as communities of inquiry and improvement. Fleming and Leo (1999) argue that principals and the teachers, who continuously learn, increase their capacities by developing professional relationship with their colleagues. As highlighted in the rationale section that, as a leader of Science Department, I think that it is imperative for me to encourage teachers in my department and school as a whole to have staff professional development activities that are aimed at enhancing school improvement and development. The literature that I have reviewed is indeed relevant for what the study is all about. That is, to understand through rural teachers' perspectives and experiences, the role of PLCs.

2.3 Conceptual framework

I have chosen four theories that formed the basis for the conceptual framework of this study. These are collaborative learning theory, distributed leadership theory, democratic theory and constructivist learning theory. These theories were deemed relevant for the study largely because they are more likely to provide insights into teachers' practices as they attempt to improve their professional competences. The background that I have highlighted in the previous paragraphs shows how teachers have enacted PLCs through the formation of Subject Clusters and Subject Committees. This enactment of PLCs by teachers was embedded on the

concepts of collaboration, leadership, democracy and constructivism. A detailed discussion of the conceptual framework and its relevance to the study is provided below. I now discuss the conceptual framework that informed this study.

2.3.1 Collaborative Learning Theory

For Gerlak and Heikkila (2011), collaborative learning is a process of learning that can be understood as a set of actions that allow new information or knowledge to be acquired. Collaborative learning theory was therefore important in terms of understanding people working together. That is why I decided to use collaborative learning theory as a framework for understanding PLCs in this study. Collaborative learning theory was also deemed important in understanding groups' dynamics. The collaborative learning theory emanates from the premise of collective learning that involves people working in collaboration to achieve goals (Killen, 2010). Teachers in schools were involved in various committees, for example subject committees, sport committee, catering committee and assessment committee. Although these committees were not the same in terms of what they did, but the fundamentals were based on collaboration from all the members.

The concept of PLCs also emphasises the notion of working together to improve schools. Underpinning collective learning is the sharing of ideas, knowledge and skills (Drucker, 1998). The interaction of teachers in PLCs perpetuated collective learning and collaboration as fundamental imperatives in modern times. In modern organisations, very few things can be achieved alone. The literature showed that most successful schools were engaged in PLC which provides support to both teachers and school (Munro, 2005). Through the literature it was clear that there is no consensus on the characterisation of the PLCs, although there is consensus on its effectiveness in different sectors. Hence, most schools in particular are moving away from the traditional way of managing the schools where the principal managed alone. School management has begun to engage the entire staff in terms of school functionality. This tendency indicated that schools were beginning to use collaborative engagement as a way of improvement and changing schools. The emphasis now was on collaboration in all school activities which is centred on teams.

The complex nature of schools required collaboration of all school stakeholders which might eventually lead to school improvement. The teachers in schools and outside the schools collaborated on what they were doing so that they can improve their teaching and consequently improve school performance in terms of results. Through the PLCs, teachers

were able to develop themselves in terms of teaching strategies and assessment techniques hence improve their teaching. The schools benefited in the sense that teachers began to understand the notion of accountability and leadership better as a result of the interaction within the PLCs.

2.3.2 Distributed Leadership Theory

Distributed leadership is essentially about the notion of leadership as being a shared activity through teacher leadership in schools (Grant, 2010). Grant (2009) argues that without teacher leadership, the transformation of South African schools into PLCs is unlikely to occur. For Gunter (2005, p 51) "distributed leadership is characterised as authorised, dispersed and democratic". The principal by virtue of his or her formal position authorises teachers to do certain tasks, teachers as subordinates were therefore required to comply with his or her request. According to Gunter (2005), teachers accepted this leadership distribution as being legitimate because of the formal position of the principal. Distributed leadership was therefore deemed essential in terms of understanding the effectiveness of PLCs. Usually teachers in the PLCs choose leaders who lead them in their respective communities of practice.

The notion of distributed leadership is relevant for PLCs because it emphasises the idea of teachers taking leadership positions by virtue of being in the community of practice. The issue of leadership is critical in terms of the effectiveness of the PLCs. Hence, distributed leadership theory was employed in this study as a means of examining the concept of PLCs. Harris, Busher and Wise (2001) point to a shift from autocratic style of leadership to greater focus on teams and distributed leadership as the schools improve. Distributed leadership is important in explaining the manner in which individual teachers, within the PLCs, are willing to share power among themselves and also with those in positions of power and authority. In South Africa, teacher leadership has unfolded in many different forms such as formal position or informal position. The formal position of leadership has been associated with the position the person holds, for example, being a principal or Head of Department (HOD). The principal by virtue of his formal position in a hierarchical system distributed tasks and responsibilities to other teachers (Spillane, 2006).

2.3.3 Democratic Learning Theory

The democratic learning theory involves leadership or participative leadership which can be defined as a type of leadership style in which members of a group take a more participative

role in decision-making process. A Professional Learning Community involves participative leadership which could emerge at any time where there are groups of people within a learning environment (Cherry, 2010). For example, when teachers make decisions on the leadership in their respective PLCs, it involved a lot of democratic principles, and that is why the democratic theory was deemed important in understanding this concept of PLCs. Democratic theory emphasis the collective participation through interaction of individuals.

In terms of democratic theory, individual rights are accorded high priority (Wallace, 2001). I think that, inherently, PLCs encourage teamwork and collaboration among stakeholders within a broader institutional arrangement like in a school situation. Teamwork experiences have been widespread in schools and colleges in many countries (Katzen-bach & Smith, 1998). It could be argued that teams outperformed individuals acting alone or in larger groupings, especially when performance requires multiple skills, judgements, and experiences (Lashway, 2003). The democratic theory emphasises openness and participatory approach in decision-making processes, and such an approach is related to the concept of PLCs which is about group interaction and participation to improve performance. Democratic theory was therefore used as part of the conceptual framework in understanding the PLC.

2.3.4 Constructivist Learning Theory

Constructivism learning theory is a psychological and philosophical perspective which contends that it is individuals that form or construct much of what they learn and understand (Bruning, Schraw, & Ronning, 1995). Geary (1995) argues that constructivism learning theory emphasises that people are active learners and must construct knowledge for themselves. Vygosky (1978) stresses social influences and suggests that group learning and peer collaboration are useful. As students learn from each other, models teach not only skills but also raise students' sense of efficacy for learning (Schunk, 1985).

The concept of PLCs emanates from the premise of social interaction in a group. Lambert (2003) notes that, professional development designs that attend to both teacher and student learning might use what he refers to as the reciprocal processes of constructivist learning. By this he meant that learning is mutual and interactive, thereby investing in the growth of all the participants. Constructivism views learning as a process of making sense of information and experiences. In other words, learning was most productive in a social context. The study was about collective learning within a social context and where teachers are learning from one another. Hence I think this theory was appropriate for this particular study.

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Burns, Menchaca, and Dimock (2001) identified six principles as important to constructivist learning theory (a) learners bring unique prior knowledge, experience, and beliefs to a learning situation (b) knowledge is constructed uniquely and individually, in multiple ways, through a variety of authentic tools, resources, experiences and context (c) learning is both an active and reflective process (d) learning is a developmental process of accommodation, assimilation, or rejection to construct new conceptual structures, meaningful representation, or new mental models (e) social interaction introduces multiple perspectives through reflections, collaboration, negotiation, shared meaning (f) learning is internally controlled and mediated by the learner. These six principles of constructivism are closely related to the concept and dimensions of professional learning communities. It is for these reasons that I have chosen constructivism theory for the study. Although the constructivism learning theory is fundamentally based on learners learning, it is also relevant to teachers' learning and the construction of knowledge that may assist them address their own short comings and find alternative ways of enhancing teaching.

2.4 The Landscape of Professional Learning Communities (PLCs)

The term Professional Learning Communities has been used over two decades now. It has been recently been popularised and used in schools and other contexts to describe several different arrangement and structures (Senge, 1990; Wenger, 1998; McLaughlin & Talbert, 2001; Hargreaves, 2003; Little, 2003; Brandt, 2004; Hord, 2004; Lieberman & Miller, 2004; Shulman, 2004; DuFour & Eaker, 2006; Ross & Gray, 2006). Some authors have characterised the concept of PLCs in terms of participants and purpose of engaging as a collective. Literature reviews have identified debates surrounding the concept of PLCs in most countries such as the US, Australia, Austria and South Africa. The most common debates were around the characteristics of the PLCs; the composition of the members that constitute a PLC and who are the beneficiaries of the PLC.

In the United States, there have been many voices which focus on the characteristics, the uses as well as the efficacies of the PLCs. Most practitioners agree with Hord's (1997) characteristics which were highlighted in Chapter One of this study. Others have argued that more research was needed in order to fully understand the nature of PLCs. Another group of practitioners has argued that these PLCs mainly consist of groups of teachers who analyse students' work together and use the insight gained to analyse the lessons (Brandt, 2004). Others proposed that a school can be a community on its own that shares a common vision and purpose (Martin-Kniep, 2008). On one hand there were those who believed that the PLCs

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encompassed people from different organisations who work on different activities and projects but shared space and time to support each other's work (Wenger, 1998). The literature reviews indicates that there are almost two main arguments about the composition of PLCs. One group of practitioners argue that PLCs were originally meant for teachers to facilitate their professional development and support. The other group argues that the PLCs were not individually specific; in fact, they were meant for everyone even the doctors as medical people, can form a PLC. Therefore, this concept should not be confined to teachers or education.

Although different characterisations of PLCs were evident in the US and other countries like Austria, Australia and South Africa, however, everyone seems to agree that it involves groups of people working together for a common goal. There are three arguments that have been raised in the US about the promotion of PLCs. One argument related to the PLCs' effect on students; a second one relates to the outcome they produce to teachers, and the third one focuses on, their effects and functions in relation to school improvement. In the US, there have been debates about who the members of the PLCs really are. Many people assumed that it was about teachers working together, but some authors in the US **(Martin-Kniep, 2008; Brandt, 2004; Shulman, 2004)** argue that even the principal in the district can form a PLC. These authors argue that most people confined the PLCs to groups of teachers whereas learning communities were groups of people who shared common goals in any sector. The argument was that PLCs were critical in terms of school improvement and change. Hence there has been a need for the promotion of PLCs in schools around the world with the aim of improving education **(Wenger, 1998).**

In Australia, literature reveals that there have been lots of debates and research projects that sought to promote the notion of learning communities; one of those research projects is discussed later on in this chapter. Most of the schools in Australia have engaged in Professional Learning Projects (Maloney & Konza, 2011). The aim of these PL projects was to research and debate about the role of PLCs in relation to school improvement. Early findings of these PL projects have indicated that most schools performed better when there was collaboration within the school, and that teachers acquired new knowledge and skills. There was evidence from the literature (Jianhua & Kedong, 2001; Gerlak & Heikkila, 2011) that the success of any organisation required collaboration and team work. Professional learning communities are about using the experience and expertise of practitioners as precious resources for individuals, social and organisational learning (Sergiovanni, 1994).

The indication from the literature was that PLCs could assist individual teachers who are challenged by the subject content that needs to be taught. This could be done by sharing ideas with other colleagues on that particular content. For example, Munro (2005) argues that PLCs enhance teacher practice and improved student learning. One of the reasons for doing a study that focuses on PLCs, was to find out from teachers their own understanding of this concept, and (if at all), they found this concept to be relevant for their daily practices of teaching. The literature reviewed was aimed at understanding, and then painting a picture of what was happening in other countries as well, pertaining to the concept of PLCs and to relate that to South African context. The discussion below deals with the landscape and the current debates relating to PLCs in the South African context.

South African education has embarked on reform initiatives that are somehow similar to that of the rest of the world. These changes tend to rest on the assumption that participation of educators can enhance the achievements of the desired transformation in education (Mosoge & van der Westhuizen, 1998). In South Africa, transformation has been outlined mainly in the South African Schools Act (No 84 of 1996) and the other policy documents like the Norms and Standard for Educators. Through this Act, schools are encouraged to involve all the stakeholders in terms of decision-making processes. Processes of shared decision-making and suitable structures where that can happen are related. The success within the system can be acquired by the devolution of authority and the sharing of leadership at school level (Mosoge & van der Westhuizen, 1998). The South African education system has gone through numerous transformation initiatives as highlighted above and one of those changes, were about curriculum changes. However, the burning issue has been the lack of skills and implementation of these changes. This has engendered the promulgation and introduction of Skill Development Act of 1998 by the South African Government. The aim of this Act was to make sure that employers in different sectors provide workers with opportunities to development themselves within the workforce.

Skills shortages were highlighted in the three large scale national studies on skills development issues associated with South Africa's Sustainable Development Pathway (SASDP) undertaken by the Department of Environmental Affairs (DEA, 2010), the Biodiversity sector (HSRC, 2010); and the Department of Science and Technology's Global Change Grand Challenge National Research Plan (DST, 2010). All these three studies on skills development pointed to the need to improve: knowledge and pedagogical content knowledge (capacity to teach); environmental and sustainable development content, as well

as, values and skills among South African teachers. These national skills studies for the environmental sector have all shown that teachers have inadequate environmental and sustainability knowledge to lay the foundation for further environmental learning and career path development for the youth in South Africa, or for the associated forms of citizenship development. As a result, the DBE has focused on teachers' professional development initiatives, of which one of those is the formation and promotion of the PLCs (DBE Strategic Planning Framework, 2011 – 2012).

As mentioned in the previous paragraph, one of the new concepts in the Strategic Planning Framework for Teacher Development is the establishment of professional learning communities. These are meant to support on-going interactions with teachers, and on-going professional learning and development. It is envisaged that through the piloting process, initial clusters of teachers will be involved in the programme which could constitute the foundation of professional learning communities. Teachers involved in these clusters will be oriented to using the online open learning resources that will be freely available. This will enable them to support other teachers to do the same, where possible, with the support of district curriculum staff. A key element of enabling the establishment and on-going functioning of such professional learning communities is the involvement of the subject advisory services at district level. This will be included in the piloting processes for 2012 and the structuring and functioning of the professional learning communities and their establishment was going to be the subject of monitoring and evaluation and research in 2012/13.

The concept of PLCs is a new phenomenon in South Africa that is getting prominence. However, in this study, I wanted to understand how this concept has been enacted by teachers in our circuit. In this study, I have adopted a definition of PLCs that is provided by Caspers (2004) which advocates the notion of teachers who share, identify, articulate and communicate to themselves, to one another and public at large. The DBE has emphasised the promotion of PLCs in South African schools in order to improve education. The learning communities' benefits are said to be focused on teachers enhancing their knowledge and skills. My personal view is that the schools need to promote the notion of PLCs with the aim of improving themselves. If all individuals in the school collaborate it could lead to shared vision, shared leadership, collective learning and shared accountability hence holistic school improvement.

2.5 Possible benefits of Professional Learning Communities in South African schools

One of the possible benefits of the PLCs is the adoption and embracing teacher leadership in schools. Teacher leadership is about teachers taking leadership roles in schools, both inside the classroom and outside **(Barth, 2001).** Most of the schools are faced with leadership challenges as it has been reported a number of times by the Department of Basic Education. Norms and Standards for Educators (2000) recognise the role of teacher as a leader. The formation, sustaining and the promotion of a PLC in a school encourages teachers to work as a team to improve learner performance and school results. Professional Learning Communities theoretically create an environment where teachers support one another and take accountability of how the school performs and functions.

The school vision and leadership is commonly owned by all school staff members in a PLC. Most of the education policies that were passed after 1994 emphasised the importance of shared leadership, collaborative teaching, collective learning, shared vision and accountability. For example, The South African Schools Act emphasises the importance of improving school leadership through involvement of all stakeholders. Personal Administration Management of 1995 emphasises the need to use a more participatory approach in how a school functions. Teacher leadership is more suited to collaborative learning. I therefore think that there are many benefits of Professional Learning Communities in South African Schools.

2.6 Some challenges of Professional Learning Communities

Some authors have identified a number of challenges of PLC. For example, DuFour and Eaker (2008) indicate firstly, that there is some doubt about the readiness of teachers as active members in the context of PLC. Secondly, how would a school know if they are operating as a PLC or something else that may not be beneficial to the school or learners? This study also intended to establish whether there were benefits or shortcomings of consciously knowing about whether a school is operating under as a PLC or not. The literature further reveals the vagueness of understanding PLC dimensions and the attributes that are associated with it. Could this be a result of teachers not knowing or understanding the concept of PLCs? If they are consciously aware, would that awareness change their perceptions of the PLCs concept and practice? I hope that this study would be able to respond or give explanation to all of these questions. One of the fundamental attributes of a PLC is that school leaders and teachers must understand the characteristics of the PLC process mentioned in this literature.

2.7 Empirical perspectives on Professional Learning Community

This section discusses two research projects that were conducted in South Africa and Australia respectively. I now discuss the research project entitled "Networks Brings Result for teachers".

- This research project was outlined and discussed by Barbara Dale Jones 05 April 2012 in Johannesburg, in South Africa.
- The main objective of the study was to investigate the role of Professional Learning Communities through the use of network for teachers and to establish the effectiveness of teacher networks, as well as how these teacher networks can be sustained.
- The methodology that was used was a case study. The participants were teachers who were asked questions pertaining to the effectiveness of teacher networks and to what extent it has helped them.
- The findings of the study indicated that teachers' network were very useful in sharing ideas with other educational practitioners through network for teachers. The findings suggested that most teachers relied heavily on the support and ideas that they got from other teachers, peers, educational practitioners and other educational experts.
- The implications of these findings to this particular study are that teachers learned a lot from each other and from one another; and therefore, this has impetus for the PLCs and the need to establish them. The findings also further revealed that PLCs could also be formed or promoted through the use of social networks, for example, the Twitter and Facebook where teachers could share ideas without being physical in a meeting with other teachers as normal happens in most of the rural schools where there are no computers with internet.

The aims and objectives of this research project were discussed during the seminar that was held at the University of Johannesburg in South Africa in April 2012. The seminar was attended by different educational practitioners who shared their experiences about existing projects in their respective institutions. It was highlighted that this seminar was the sixth and last in the first series of Teachers Upfront seminars, convened jointly by Wits University's School of Education, the University of Johannesburg's Education Faculty, the Bridge Education Network and the Mail & Guardian.

According to Venkat words, Professor of Numeracy at the University of Witwatersrand it was important to start with pilots, "we have no option but to start with pilots...we should start small and think medium term". She was referring to a Maths-support projects she leads that involves 10 primary schools. She indicated that the aim of the project was to create a platform where teachers can share ideas and interact with experts and peers through networking, especially Maths teachers so that they can improve their teaching. This was supported by Alexandria Cock, who teaches Maths at Parktown Girls High in Johannesburg; spoke about how valuable she found colleagues discussions of Maths teaching. She indicated that the experience prompted her and fellow teacher to set up a similar network involving teachers of all subjects at her school. The implications for this are that teachers do benefit through the sharing of ideas with other teachers which eventually improved their teaching.

The fundamental implications that emanated from these projects are imperative in terms of improving teaching and teacher networking. This indicates that there are various ways in which teachers can improve their teaching. For example, teacher networks, communicating through internet and use of cell phones. According to Venkat's "Maths Connect" project offered the lessons learned not only from establishing teacher networks, but also from sustaining teachers' interest and participation in them. She argued that some of their work looked at Maths content, some focused on teaching and some emphasised Mathematical leadership. Some practitioners, for example Robyn Clark emphasised the importance of Socio-media networks as it could serve similar purposes. She is a Maths teacher at Sekolo sa Borokgo School established in 1993 to fill the large equality gaps between rural, township and then Model-C Schools. Describing how these networks supported her, Clark said Twitter was her preferred medium: Math-chat allowed her to keep abreast of issues in Maths education and that gave her access to other teachers in South Africa. In other words, PLCs are not confined to school physical structure which is a place for teachers to meet and discuss pedagogical issues but can also be extended to social networks. Vause (2009) argue that PLCs can exist in any place and at any time, hence it is not confined in the school context like other practitioners are claiming.

Professor Karin Brodie from Wits University School of Education described a PLC as "a group working with a facilitator, learning together and sustaining the practice of learning and of understanding learners. Learners' needs inform what teachers need to do in order to improve teaching as well as their needs and the role of data is important in a PLC, including data from tests, learners' interviews, learners' work and classroom observations. She argued

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during the seminar held at University of Johannesburg in April 2012 that teachers needed to learn to analyse and interrogate the data and understand how learners data fitted with everything else they knew from research and experience. The participants who attended this seminar acknowledged that there was no quick fix when it came to educational issues. They acknowledge that everything takes time, careful planning and expertise. The most important thing that the educational practitioners agreed upon was that teachers need the support from all different stakeholders involved in education within the South African context.

Josef de Beer of the Department of Sciences and Technology Education at the University of Johannesburg shared lessons from the University's A–Team Project which draws science teachers into online and physical communities aimed at supporting their professional development. Teachers share new subject content, the latest scientific developments and local knowledge is shared, hailing mostly from under-resourced schools, the teachers attend workshops, write online reflections and can visit Science Laboratories working with cutting-edge information and technology, De Beer said. Most of the disadvantaged schools in South Africa have no Science Laboratories the implication from the De Beer argument is that the online communication and promotion of PLCs can bridge this gap because teachers can share knowledge and skills on how to solve problems.

It was highlighted in this seminar several times on how much it took to create and sustain teachers' networks. One of the difficulties that faced these practitioners was the infrastructure that was needed to set up this network and also the issues of making sure that it was accessible to the majority of the people. There was also an emphasis on how to sustain these teachers' networks so that they do not become a once-off quick intervention for the teachers. However the impact that these teachers' networks have made is huge and invaluable to teachers. The teachers were very happy with the interventions, for example some educators said "interacting with experts and one's peers in the field is invaluable.

This indicates the level of desperation that teachers have if they are challenged by the subject content that they have to teach. This seminar showed the role and the importance of the promotion of PLCs in all schools in South Africa. The research projects discussed above clearly indicate why PLCs are critically important in any education system which, in no doubt, requires teachers who are confident and knowledgeable. What follows below is the discussion of the second research project that was done in Australia. This research project was conducted by Maloney and Konza in 2011.

- This research project was conducted in the school called Berrivale in Australia. The title of the research project was "professional learning: becoming a community of professional learning or not".

- The main objective of this research was to establish the role of teacher learning through reflection in order to improve their teaching in early childhood education.

- The methodology that was used was a case study. The teachers were selected as the participants in the study. These were teachers of the Berrivale primary school where this study was conducted.

- The findings of the study were that when teachers worked together through the sharing of ideas, they can be able to formulate programmes that lead to better performance in primary schools.

- The implication that could be drawn from this study was that it was imperative for teachers to work with one another in order to improve their teaching which eventually could assist in designing learning programmes for learners.

This paper describes a school's participation in a project designed to support critical reflection of teachers' beliefs about best practice in Early Childhood Education. The aim of the paper was to examine, how the beliefs and practices intersected with shifting policies and trends in the broader Early Childhood field in Australia **(Maloney & Konza, 2011)**. The fundamental principles of this project was centred around teachers working together to improve their own teaching in relation to what are the best teaching practices in Early Childhood Education and also to be in line with changes in educational policies in Australia. According to Maloney and Konza (2011) this project was done through a partnership between University colleague and the school colleagues. The role of the University colleague was to build equitable, respectful relationships and collaboration for mutual benefit. It was through this relationship that the Professional Learning Project (PLP) reported in this case study was developed. The deputy school principal and two university researchers were the co-facilitators of the project that spanned one and a half years. The outcomes of this research projects were aimed at facilitating teachers' professional development in relation to Early Childhood Education in this particular primary school. This was further aimed at establishing the extent to which the findings of the research project could be used in formulating national policies and agendas; and the development of a shared view amongst staff of effective Early Childhood practice. The outcome for the school was to be a process that facilitated professional development for staff, and a policy statement outlining principles of practice and

guidelines for implementation at various ages and stages of Early Childhood Education. The background that informed this project was the researches that have been done previously by different authors concerning teachers working together in professional learning communities. These findings had indicated that teachers learned a lot from one another or through working in groups. Hence, the implication is that it is imperative for schools to formulate and promote professional learning communities with the aim of improving teachers' knowledge and learner performance.

This body of literature included (Hord, 1997; DuFour & Eaker, 1998; 2004; Tarnoczi, 2006) espouses that collaboration and teamwork practices within supportive learning communities have positive outcomes for teachers' professional learning. In reality, however, teachers in many schools still work in relative isolation. Even when collaboration is promoted as a significant feature in a school, it often centres on operational procedures such as examining curriculum, participating in staff meetings and contributing to decisions about areas such as student welfare, discipline, homework and supervision of children. Although these team planning activities are an important part of joint decision-making, group cohesion and the smooth running of a school, they do not necessarily lead to the kind of professional reflection and debate integral to professional learning communities (Tarnoczi, 2006). In most cases this type of collaboration endorses operational decisions, rather than facilitates educational inquiry.

This research project therefore was based on the importance of PLCs and emphasised collaboration. Collaboration is widely promoted as being critical to the development of schools as the PLCs (Leonard & Leonard, 2003). Whereas the phenomenon of professional learning communities has been endorsed extensively in the educational research literature on school improvement (Reynolds & Teddlie, 2000; Preedy, 2003) and accountability (Evers & Walberg, 2002), opportunities for teachers to interact either within or outside school have been mostly sporadic and random. Dadds (1998) suggests that the need for practitioners to work together becomes stronger when they strive to guard against conflicting government views of professional work. In planning the professional development sessions, the school executive supported the idea of like-minded colleagues joining forces. The outline of the findings of this research project are summarise below including the positive and the negative of the concept of PLCs.

The goal of the Professional Learning Project at Berrivale Primary School was to provide a forum for Early Childhood teachers to develop a shared vision of Early Childhood Education within a culture of collaboration, and for the discussions to be a springboard for further teacher action research. The degree to which the professional learning community was nurtured and became an effective support structure for teachers' professional learning is not entirely clear. For some teachers the process facilitated the exploration of individual perspectives, and was a springboard for further self-examination and reflection in the form of action research.

For others, participating in a team, collaborating and speaking out about contentious issues was problematic. Nevertheless, the ultimate goal of the project was met: an information booklet describing effective early childhood practice at Berrivale was developed and distributed to families. This study indicated the impact and the role of PLCs in Australia together with challenges that people of Australia faced pertaining to their education system. Wenger (1998) argues that the success of any institution or organisation or country for that matter, lies with the collective engagements that make up the institution or the country.

This report has identified various factors that may have influenced the teachers' level of engagement and contribution, and impacted on their capacity for self-examination and reflection. One factor is the personal and professional investment individual teachers are willing and able to make, based on their perceptions of the relevance of the professional learning task. Another factor is the value put on professional development both individually and in terms of the shared culture of the school. They have proposed that professional learning within a professional learning community has a better chance of succeeding if teachers contribute as equals to setting the agenda, bringing about change, and ultimately improving their own practice. The research project through its findings showed that there was a need of exploring further research on the concept of PLCs.

Through the literature reviewed it was clear that education systems around the world require a revamp and transformation. This revamp and transformation should be informed by the promotion of PLCs especially at the school levels and outside school levels, through the use of social networks and networking. Sergiovanni (1994), talks about PLC as a collection of individuals who share ideas and beliefs. The comfort of knowing that other teachers face classroom challenges similar to your own is only one of the basic supports that all teachers

need. This view emanated during the networks for teachers seminar in South Africa that has been discussed above. The implications are that teachers do need support from all the stakeholders in education and that interacting and sharing ideas amongst themselves or as colleagues is effective.

Most teachers have agreed in both research projects that working together assist them in improving teaching and broaden their knowledge base. Shulman (2004) argued that working together overcome the limitations of individual experience and understanding through sharing of multiple perspectives of peers. The implication is that schools who promote PLCs are likely to succeed in many schooling aspects. The school as an institution is likely to function in collaboration and participatory manner where all individuals take ownership of the school. The concept of collaboration which is fundamental in terms of how one unpack the concept of PLCs should not be limited to institutions but rather be broaden to cater for different manifestation of PLCs.

Schools that promote the notion of PLCs can lead to improved student learning by enhancing teachers' knowledge and skills. In other words, learning communities increase teachers' learning and that in turn translates into increased student learning. Some authors have argued that there is direct link between teacher quality and student learning (Byme, 1993; Darling-Hammond, 2003). It is common knowledge that teachers who are confident about the subject content that they have to teach, are likely to improve student performance. In essence the learning communities are beneficial in both students and teachers are like. The first argument is that learning communities increase teacher expertise that can lead to improving student outcome. The secondly argument relates to the value for teachers' learning and work. The third argument is that learning communities should be promoted so that they can provide support for the schools. According to Darling-Hammond (2003) what we need is a complete transformation of teaching and the organisational structure of schools into learning organisations where capacity can be cultivated from within and professional talent can be sought, recognised, articulated and disseminated.

The arguments raised above about the role of learning communities is critical in that the learning communities are fundamental in student learning, teachers teaching and school functionality. Learning communities have a lot to offer, for example, they offer the promise of new organisational cultures and broaden the context of schools. They provide a platform

for practitioners to share expertise and the creation of new knowledge. They also help in developing shared leadership that can result in a collective purpose and accountability. The role of learning communities is therefore not limited to expanding teachers' knowledge but rather improve holistic functioning of the school and education at large. Although the primary objective of this study is to investigate teachers' understanding of PLCs, it is imperative to note that teachers' knowledge lead to both student achievement and school improvement. It is essential therefore to argue that learning communities can lead to holistic school improvement and build capacity for most schools.

2.8 Conclusion

In this chapter I have attempted to outline the literature that is relevant for the study as well as, the conceptual framework that informs it. I have discussed the landscape of the concept of PLCs with the aim of indicating the importance of PLCs. The concept of PLCs has been explored through different definitions provided by various authors. This chapter has also looked at the possible benefit of PLCs as well as some challenges that the concept of PLCs is confronted with within the broader context of education. It is clear from the literature that most authors see a huge role that PLCs can play in improving education, not only in South Africa but, in the whole world. The literature indicates that schools are in need of innovative ideas in order to improve in terms of teaching and learning. Senge (2000) acknowledges the importance of PLC in schools and recognises schools as a meeting ground for learning.

The literature review has shed some light on the research questions and the relevance of this literature for the study and the context in which this study emanates. This chapter has also explored the conceptual framework which informs this study. The four theories that have been highlighted in this literature review indicate the importance of working as a group to improve education. These theories are fundamental in terms of analysing the concept of PLCs because these theories emphasise the importance of the role of individual working collaboratively, hence sharing leadership and accountability within the school context. This in turn, promotes team work and collective learning which eventually is likely to lead to improve teaching and learning.

CHAPTER THREE

RESEARCH METHODOLOGY AND DESIGN

3.1 Introduction

This chapter discusses the research design and methodology that was used to generate data and arrive at the findings of the study. This chapter discusses and defines the research design that was used in this study and also provides some justification for using such a research design. In addition to research design, this chapter discusses both methodology and methods that were used in generating data that would be used to address research questions. Cohen, Manion and Morrison (2000) distinguish between methods and methodology and define methods as a range of approaches that are used in educational research to gather data for interpretation or explanation of the study. These scholars define methodology as a means of helping to understand, in the broadest possible terms, not the products of scientific inquiry but the process itself. In this study, I have adopted this approach of distinguishing between the methodology and methods which are both discussed in this chapter. The main aim was to provide a distinction between the methodology and the instruments that were used to generate data or methods of generating data.

3.2. Research design

According to Punch (2009), the research design is the basic plan for a piece of research, and includes four main ideas. The first is the strategy, second is the conceptual framework, and third is the question of who or what will be studied and lastly the tools and procedures to be used for producing and analysing empirical materials. This was a qualitative study located within the interpretivist paradigm. Central to interpretivist paradigm, is the notion of understanding the subjective world of human experiences and to retain the integrity of the phenomenon being investigated; efforts are made to get inside the person and understand from within (Cohen, Manion & Morrison, 2000).

Since my study was about rural teachers' experiences and perspectives of PLCs, I thought it was important to get some insights into the thinking of participants and to understand them from within, that is, from their own perspectives. Terre Blanche and Durrheim (1999, p.6) argue that the interpretivist paradigm provides relevant information to the researcher in terms of "the subjective reasons and meanings that lie behind social action". The intepretivist paradigm provided me with the platform, as a researcher, to look at the issue of subjectivity

and the construction of meaning within the social action as highlighted above. According to Cohen, Manion and Morrison (2000) the interpretivist paradigm is characterised by a concern for the individual to understand the subjective world of the human experience. Interpretivist researchers seek to make sense of feelings, experiences, social situations or phenomenon as they occur in the real world, and therefore, want to study them in their natural settings (Terre Blanche & Durrheim, 1999). Since this study was also about how rural teachers enacted the concept of PLCs, I thought that interpretivist paradigm was relevant in understanding teachers' subjective meaning of the enactment of the PLC concept. I was interested in describing and understanding the meaning that South African rural teachers, in selected schools ascribed to the concept of PLCs. That is why I used interpretivist paradigm. According to Wellington (2000) cited in Cohen, Manion & Morrison (2000), the interpretivist researcher accepts that the observer makes a difference to the observed and that reality is human construct.

3.3 Methodology

It was highlighted earlier in this chapter that methodology focuses on the process of scientific enquiry rather than the product itself. This section discusses case study as a process that gives rise to scientific enquiry end product. The study adopted a case study methodology of two rural secondary schools. Cohen, Manion and Morrison (2011) maintain that a case study provides a unique example of real people in real situations, enabling readers to understand ideas clearly than by simply presenting them with abstract theories or principles. This study was about rural teachers' experiences and perspectives of PLCs within the school context. That is why the case study was appropriate as a methodology in this study. Kaplan (1973) views methodology through its aims and further argues that the aim of methodology is to describe and analyse methods, throwing light on their limitations, resources, techniques and procedures that are used to gather data. I thought therefore that a case study as a methodology was appropriate to look at the cases of these two secondary schools so as to understand their contexts.

3.3.1 Strengths of case study research

One of the strengths of case studies is that their insights may be directly interpreted and put into use for staff or individual's self-development while the disadvantage of case studies is that they may not be generalised (Cohen, Manion & Morrison, 2011). A good case study can offer a rich store of information about a phenomenon, and can provide readers with a three-

dimensional picture and illustrate the relationship, micro political issues and patterns of influence in a particular context (Bell, 1987) cited in (Cohen, Manion & Morrison, 2000). I argue that case studies can generate and provide understanding of a particular situation through thick descriptions. Consequently, this study adopted a case methodology due to these inherent strengths, in spite of their weaknesses. Some of the weaknesses are discussed below.

3.3.2 Weaknesses of case study research

One of the weaknesses of case studies are that generalisation cannot be made from as single case study Lindegger (1999) cited in (Cohen, Manion & Morrison, 2000). Merriam and Simpson (1984) state that there are limitations to case studies such as the danger of distortion and that sometimes it is not easy to cross-check information in all cases. Despite these weaknesses my personal views are that case studies deals with specific cases and provide a platform for understanding a particular phenomenon.

3.4 Sampling

3.4.1 School selected for the study

Purposive and convenient sampling methods were used in this study. The selection of the two secondary schools was convenient for me in the sense that both schools were in the same circuit as my school. These schools are located in the same community and neighbourhood. Both schools were no-fee schools and fall under the national nutrition programme of the DBE. The schools offered similar subjects in terms of streams (Science, Commerce and Humanities streams) and hence competed for same learners in the community.

3.4.2 Participants selected for the study

The sampling method of participants was both purposive and convenient. It was purposive because the sample was chosen for a specific purpose of understanding experiences and perspectives of rural teachers about PLCs. According to Ball (1990), purposive sampling is used in order to access knowledgeable people who have in-depth knowledge about particular issues, maybe by virtue of their professional role, access to networks, expertise or experience. Besides being purposive, the sampling method was also convenient in the sense that participants were easily accessible for me; they were geographically closer to me. For this study, I selected two science teachers and a Head of Department (HOD) in each school. According to Patton (1990), the logic and power of purposeful sampling lies in selecting information-rich cases for study in-depth. The number of participants in this study was

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determined by the nature of the study, a case study. For Cohen, Manion and Morrison (2000, p.102) "a sample size is determined by the style of the research and in qualitative research it is more likely that the sample size is small". Hence, I selected a small sample comprising two science teachers and a Head of Department (HOD) as participants in each school.

The selection of these teachers was based on the experience they had in teaching science subject. The selection of the HOD was based on the fact that they are responsible for monitoring and supervising teachers on the daily basis in the school. The inputs of the HOD were therefore important in providing additional insights on the teachers' experiences and perspectives of PLCs. I was looking for a teacher who has been teaching science subjects for more than five years. The study was about rural teachers' experiences and perspectives of the concept of PLCs. Hence, it was important that I looked for someone who was experienced and who could provide more insights in the teaching of science subjects.

3.4.3 Profiling participants

This section provides a brief profile of each participant in the study. This is done in order to ensure that readers get an understanding of their professional contexts.

3.4.3.1 Participant OLL-A for School-A

OLL-A was an African female, aged 41 years when the study was conducted. She held a Diploma in Education (Senior Phase) and Adult Basic Education and Training (ABET) certificate. She was at that time teaching Mathematics, Natural Sciences and Life Sciences in the General Education and Training (GET) and Further Education and Training (FET) Bands and had taught for more than 11 years.

3.4.3.2 Participant BGB-A for School-A

BGB-A was an African female, aged 37 when study was conducted. She held a Senior Primary Teachers Diploma (SPTD), Further Diploma in Education (FDE) and Bachelor of Education (BEd) Honours degree. She was at that time teaching Physical Sciences (FET) Phase and technology (GET) Phase and had taught for more than 11 years.

3.4.3.3 Participant MND-A-HOD for School-A

MND-A was an African female, aged 39 at the time of the study. She held a Senior Teachers' Diploma (STD), Advance Certificate in Education (ACE) and Bachelor of Education (BEd)

Honours degree. She was at that time teaching Life Sciences in the FET Phase and had taught for more than 15 years.

3.4.3.4 Participant SFS-B for School-B

SFS-B was an African man, aged 39 years at the time of the study. He held a Senior Teachers Diploma (STD), Further in Education Diploma (FED) and Bachelor of Education (BEd Honours) degree. He was at that time teaching Mathematics in the FET Phase and had been teaching for more than 17 years.

3.4.3.5 Participant SMS-B for School-B

SMS-B was an African man, aged 35 years at the time of the study. He held a Senior Professional Education Diploma (SPED) and Further Education Diploma (FED). He was at that time teaching Physical Sciences in the FET Phase and had been teaching for more than 15 years.

3.4.3.6 Participant SMS-B-HOD for School-B

SMS-B was an African man, aged 35 years at the time of the study. He held a Senior Professional Education Diploma (SPED) and Further Education Diploma (FED). He was at that time teaching Physical Sciences in the FET Phase and had been teaching for more than 15 years.

3.5 Accessing the research sites

According to Cohen, Manion and Morrison (2000), the first stage to research involves the gaining of official permission to undertake one's research in the target community. But for me, it was not difficult to access these two sites. Both schools are in the same vicinity with my school where I presently teach. Hence, almost all the schools in the circuit promote neighbourhood and networking through sharing of resources with the aim of exceling as a circuit. It was imperative to follow a required procedure in a correct and systematic way. For instance, I applied for Ethical clearance to the University's Ethics Committee. I also filled in and electronically submitted an application form to the Research office of the KwaZulu-Natal Department of Education, wherein I was seeking permission to conduct research. *Appendix 1 and appendix 2*, respectively, have been attached at the end of this report for the readers' attention.

I also wrote letters to the principals whose schools had been selected for participation in the study. The purpose was to seek permission to conduct the study and I delivered the letters myself so that I could be able provide clarity where it was needed (refer to *appendix 3*). I also explained to the principals how I intended to conduct the study. In addition, I needed to request teachers' permission to participate in the study as participants (*appendix 4*). I explained the duration of the study and the specific times of doing interviews and reassured the principals that I was not going to interfere with their normal teaching times. In the end the principals gave me the permission to do the study but indicated that it was up to the teachers to decide whether they wanted to participate or not as this was their democratic right to do so. Fortunately, all the teachers I requested were willing to participate.

3.6 Methods of data generation

I used different instruments to generate data which included individual semi-structured interviews, document review, observation and reflective journal. The individual semi-structured interviews are in-depth discussions between the interviewer and interviewee (Cohen, Manion & Morrison, 2011). Individual, semi-structured interviews are flexible tools and they provided me an opportunity to ask for clarity where the need arose. According to Cohen, Manion and Morrison (2011), the interview is a flexible tool for data collection enabling multi-sensory channels to be used, and these include verbal, non-verbal, spoken and heard. I think individual semi-structured interviews were important instruments to use to generate data. One of the most important aspects of interview is the issue of body language; it is essential for the researcher in terms of making sense of the interview process. According to Anderson and Arsenault (1998), semi-structured interviews add greater depth of understanding to issues that relate to the case at hand.

The document analysis is a useful instrument to produce data. The reason for document analysis was that it provided in depth knowledge of what teachers discussed or did when for instance they attended workshops or subject committee meetings. Document review was important as it provided insights of the information that was relevant to the study. According to Yin (1994) documents, in a case study research, are used to corroborate and supplement facts from other sources. Similarly; namely, in this study, I used document review to corroborate and supplement data generated through semi-structured interviews. Consequently, I chose to analyse the following documents: minutes of meetings, year

planners, circulars, agendas, reports, work schedules, emails and programmes of assessment. For instance, the year planner illustrated the planned meetings throughout the year for each subject committee in these schools. Yin (1994) argues that although documentation is an important source of information in case studies research, it has notable weaknesses. For instance, Yin (1994) maintains that those documents are written for specific purposes and audience other than case study research, and therefore, information might be distorted. In addition to semi-structured interviews, I used reflective journal to provide a detailed account of my interaction with teachers during the course of the study.

The purpose of the reflective journal was to supplement both the individual semi-structured interviews and document review. The reflective journal was not used by the participants but was used by me as a researcher to record daily activities as they unfolded during the course of the study. As part of the data supplementing technique was the direct observation of the study site. The distinctive feature of observation according to Cohen, Manion and Morrison (2007), is that it offers the investigator the opportunity to gather live data from the naturally occurring social situations.

3.7 Methods of recording the data

I used digital voice recorder (DVR) to record individual semi-structured interviews. According Rumble, Juntti, Bonnot and Millspaugh (2009), the DVR improves efficiency in the sense that unnecessary noise can be cancelled or muted. This assist in producing clear sounds and audio cleaned of any disturbing noise. The recorded data which was generated from individual semi-structured interviews was transcribed into a written script. This was done through listening to individual semi-structured interviews and these were transcribed word-by-word. In the transcriptions, I used a format of a dialogue. The DVR has the ability to transfer information recorded in it, to a computer in a matter of seconds (Rumble, Juntti, Bonnot & Millspaugh, 2009). The usefulness of the recorded interview was that it can be replayed now and again if may be something was missed. In addition to individual semi-structured interviews I perused and interrogated the documents that were at my disposal at the school and made copies of each document where it was necessary or make notes of content of the documents.

3.8 Data analysis methods

Since this study was qualitative in nature, I used thematic content analysis which is one of the techniques of analysing qualitative data. There is no single or correct way to analyse and

present qualitative data; how one does it should be guided by the principle of fitness for purpose. According to Cohen, Manion and Morrison (2000), qualitative data analysis involves organising, accounting for and explaining the data; in short, making sense of data in terms of the participants definitions of the situation, noting patterns, themes, categories and regularities. However, in this study I adopted Miles and Huberman (1994) suggested tactics of generating meaning from transcribed interview data that it involves counting frequencies of occurrence of ideas, themes or words. The analysis involved noticing patterns and themes which may stem from repeated themes and causes or explanations or constructs and clustering items into categories, types, behaviours and classifications. For Seidel's (1998) model of data analysis, qualitative data consists of three parts that is, noticing, collecting and thinking about interesting things. The themes that emerged were through noticing, collecting and thinking about the pattern of words that were used by teachers and coding of similar words.

3.9 Trustworthiness of the findings

The most practical way of achieving greater validity or credibility is to "minimise the amount of bias as much as possible" (Cohen, Manion & Morrison, 2000). After I had completed the transcriptions there were cases where I was not sure in terms of what the participant was trying to say. The questions for the interviews were designed in such a way that it would be easy for participants to understand. In addition, I would clarify the questions for participants during the interview to make sure that the participants understood the question. To enhance credibility of what I was finding, I checked with my participants, as to what they actual meant. That technique is called member-checking. As part of my validation of the data generated, I also organised the follow-up interview to clarify those cases and to minimise unnecessary assumptions from the data.

Assessing trustworthiness is the acid test of data analysis, findings and conclusion in qualitative research (Nieuwenhuis, 2010). To further ensure trustworthiness, I made sure that I proof-read the transcriptions several times and in cases where I was not sure of the meaning embedded in the text, I took the transcript to the relevant participants to seek clarity and verify the accuracy. To ensure trustworthiness in this study, I adopted some elements of Guba and Lincoln's model (1985) and this model uses four criteria, namely credibility, transferability, dependability and conformability. Credibility refers to the ability of the researcher to produce findings that are convincing and believable. To make this study credible, I used different methods of generating data and these were interviews, document

reviews and observation technique. Through observation technique I observed teachers, for instance when they attended meetings and workshops.

Transferability is achieved through producing detailed and rich descriptions of the contexts. These give readers detailed accounts of structures of meaning which develop in specific contexts. These understandings can then be transferred to new contexts in other studies to provide a framework with which to reflect on arrangement of meaning and action that occurs in these new contexts. Dependability refers to the degree to which the reader can be convinced that the findings did indeed occur as the researcher say it did. In this study dependability was achieved through rich and detailed descriptions of the context of the study and shows how certain actions develop in each context.

3.10 Limitations of the study

As it was highlighted in this chapter, that case studies cannot be generalised, and so is this study. It is therefore important that each case study is described comprehensively and in great details so that people who read this report can understand the context of the study fully. I think there was somehow an issue of a language barrier since most participants were IsiZulu speakers, hence were not fluent in English language. To counter the issue of language barrier, I had to simplify questions as much as I could and I used follow-up questions frequently. Furthermore, I used member checking techniques to seek clarity on certain points to which I might have ascribed my subjective meaning after reading the transcripts. During the course of this study I observed and noticed that the success of PLCs requires a lot of individual contribution hence teamwork. The positive individual contributions and commitments are likely to lead to school improvement, however there were instances where individual teachers did not attend meetings for various reasons. This could have a negative effect on the success of PLCs; this is what I could also gather through the interaction with teachers during the course of this study.

3.11 Ethical considerations

Ethical considerations are important in research, and one of these ethical considerations is about a requirement for researchers to be ethically cleared. To this end, I applied for ethical clearance from the University's Ethics Committee. Simultaneously, I filled-in and submitted an application form to the Research office of the KZNDoE in which I asked for permission to do the study. I gave them a detailed explanation of what the study was all about. I also sought for permission from principals of schools to conduct the study among teachers and HODs. I

did the same thing with them, that is, explaining what the study was all about. When I approached school principals, I had received an approval letter from the KZNDoE, and I showed it to them, to indicate that the KZNDoE had already granted me permission. Getting permission from school principals was not sufficient. I also negotiated with individual participants. I visited the participants and spoke at length about what the study entailed. This interaction was done before the commencement of the study in order to give participants enough time to consider whether to take part or not. Diener and Crandall (1978) cited in Cohen, Manion and Morrison (2007) argue that informed consent is the bedrock of ethical procedure. Informed consent was discussed together with the issues of confidentiality of the interview. I gave them assurances about a number of key issues, that is, the principle of voluntary participation and that they had a right to withdraw from the study at any time should they wish to do so; that anonymity was guaranteed and that everything we discuss would remain between us.

3.12 Conclusion

The main aim of this chapter was to present a discussion about the research design and methodology. This chapter also discussed the methods that were used to generate data during the research process. The main focus of this chapter was to demonstrate the relevance of the research design and methodology to this particular study. In addition, I provided justification for the different data generating methods that were used in this study. The next chapter focuses on presentation and discussion of the research data.

CHAPTER FOUR

DATA PRESENTATION AND DISCUSSION

4.1 Introduction

This chapter presents and discusses the data that was generated through individual semi-structured interviews. The data that is presented and discussed in this chapter was generated from two secondary schools are, case studies for this research. The profiles of these two secondary schools are discussed in this chapter. In addition to individual semi-structured interviews, other official documents kept by teachers in their files or at school were also reviewed. During the course of this study, I was always observant of the situation around me, and therefore, I kept a reflective journal to record daily activities pertinent to the study. Hence both observation of the school culture and reflective journal were used as additional data generating instruments.

Since semi-structured interviews and document review methods were used as primary data generating methods, a reflective journal and observation of the day-to-day activities were used as complementary sources of data generating instruments. Both observation technique and the reflective journal were used to complement the data that was generated through individual semi-structured interviews and a document review methods. The data that is presented and discussed in this chapter is aimed at providing answers to the research questions as mentioned in Chapter One. The first section of this chapter deals with the context of the two sites, that is, the school profiles and biographical details of participants. The second section focuses on the themes that emerged from the data. The last section looks at the challenges facing Professional Learning Communities (PLC).

4.2 Context of the case study schools

This section presents profiles of both sites which formed part of this study. It is imperative to begin data presentation by describing each case study site. Cohen, Manion and Morrison (2000) emphasise the importance of context in which phenomenon is studied. The description of the site familiarises the readers with the context where the data was generated. In order to understand the data, it was always important to understand the context in which the data was generated. It serves to provide a broader picture about the nature of the data. Therefore the data was generated from two Secondary schools which were located in the in the rural community in Vulindlela, outside Pietermaritzburg. These secondary schools in this study I

referred to them as School-A and School-B. I have labelled the following research methods or instruments as individual semi-structured interviews (SI), document review (DR), informal observation (IO) and reflective journal (RJ). I used the following codes refer to the teachers School-A as BGB-A, OLL-A and HOD-A and for School-B as: TSF-B, SMS-B and HOD-B. The letter/s at the end of the teachers' codes represent/s the school; that is, A for School-A and B for School-B

4.2.1 The description of context for School-A

This was a Section 21 school, situated in a deep rural area that was, like in many deep rural communities characterised by isolation, under-developed and poverty. Section 21 schools were those schools that had been given authority to self-manage their finances, unlike their Section 20 counterpart. The DBE assesses each school and then decide whether a school can be given a Section 21 status or not. The school was approximately 20 kilometres away from the local town. Learner enrolment for the current year (2012) stood at 1020. Learner enrolment did not match the floor space that the school had and, as a result, all the classrooms were overcrowded. The school served learners from local community, as well as, learners who come from as far as 25 kilometres away from the school. The school belonged to the No-Fee Schools category, and as such, it also enjoyed the benefits of a national schools' nutrition programme. This is indicative of the level of poverty in the local community in which the school was located. The school initially used to have six classes and small school hall which was also used as classrooms most of the time. But three years ago the school was upgraded. At the time of the study, the school had four special classrooms, administration block and a media centre. In addition, School-A had administration clerk and cleaner, both permanently employed by the DBE. The school also had a security guard but was paid by the school governing body.

The SMT consisted of the school principal, 2 deputy principals (a male and a female) and four HODs (2 females and 2 males). The total number of educators was 32 including SMT, of which 15 were males and 17 were females. The school starts at 7h45 and finishes at 14h40. From 7h45 to 08h00 morning prayers were held in each classroom since there was no school assembly during the week days. I was told that such a decision was meant to improve contact time. The school assembly took place only on Fridays or when there was something urgent that necessitated the school assembly. There was a 40 minutes break between 11h00 to 11h40. The school now has a computer room with 25 computers which was built by DBE under schools infrastructure initiative. The computer room was at that time, being used by

both the teachers and the learners for different activities. For instance, learners are taught basic computer skills and teachers used it to compile their mark lists and do other things as well as they deem appropriate.

4.2.2 The description of context for School-B

This was a Section 20 school, situated in a deep rural area that was (like in many deep rural communities) characterised by isolation, under-developed and poverty. School-B was located in the same vicinity as School-A, and as such, the level of poverty in the surrounding community was similar because both schools were servicing the same community. Section 20 schools are those schools that have been found not to be ready to self-manage their finances. For instance, for procurement purposes, they have to place an order to the Department of Procurement section of the DBE, whereas Section 21 schools are able to buy anything without waiting for the Department of Procurement section of the DBE to order for them if they need something. For instance, if they need to buy textbooks, Section 20 school has to place an order in time for the textbooks to be bought by Department of Procurement section of the DBE on their behalf and then to be delivered to them. The section 20 schools are regarded by DBE as lacking capacity to manage their own finances.

The school was approximately 25 kilometres away from the local town. Learner enrolment for the current year (2012) stood at 485. For the past two years the number of learners enrolling in the school has declined. According to the teachers who were participants in the study, the reason for decline was that the matriculation results have not been good for the past three years especially in Science subjects. Hence the school has embarked on partnership with other stakeholders such as parents and SGB and the school has emphasised the need for forming partnerships with neighbouring schools and formation of teachers groups through subjects committees.

School-B served only learners from the local community. The school was declared a 'No Fee school', and therefore, it enjoyed the benefits of the national school nutrition programme. This school has 12 classrooms, with two Grade 8 classes, two Grade 9 classes, two Grade 10 classes, three Grade 11 classes and three Grade 12 classes. The school had a small administration block comprising the principal's office, store room and administration clerk office. The school had a security guard that is paid by the school governing body. The school had big room that the school used for the SMT meetings; it was similar to a board room. Unlike School-A, this school did not have a computer room or a media centre.

The SMT consisted of the school principal, 1 deputy principal (a male) and 2 HODs (one male and one female); however there was a vacant post of a third HOD which was still to be occupied. The total number of educators was 17 including SMT. There were 7 males and 10 females. The school started at 7h45 and finished at 14h30. From 7h45 to 08h00 morning assemblies were held every day. The morning assembly was used for praying and also for important announcements. There was a 40 minutes break between 11h00 to 11h40. There were a number of empty classes as a result of decline in enrolment as it was highlighted early in this chapter. In the past, the school used to have enrolment of close to 900 learners. It may be surmised here that under-performance in terms of learners' outcomes has crept into the school.

4.3 Selected participants for the study

The selection of participants was informed by the purposive sampling, and as a researcher, I identified teachers whom I thought were involved in PLCs in their respective schools. According to Ball (1990), purposive sampling is used in order to access knowledgeable people that are those who have in-depth knowledge about particular issues, maybe by virtue of their professional role, access to networks, expertise or experience. For this study I selected two science teachers and a Head of Department (HOD) in each school. This was done through the first meeting that I had with all the science teachers in both schools. The purpose of the meeting was to briefly explain the purpose of the study and also to identify experienced teachers who could be possible participants. It was in this meeting that I identify and selected the two teachers and an HOD in each school to be participants in this study. According to Patton (1990), the logic and power of purposeful sampling lies in selecting information-rich cases for study in-depth. The number of participants in this study was determined by the nature of the study, a case study. According to Cohen, Manion and Morrison (2000), "a sample size is determined by the style of the research and in qualitative research it is more likely that the sample size is small". Hence, I selected two science teachers and a Head of Department (HOD) as participants in each school.

My selection was also informed by teachers' experience in the teaching of science subjects and also by their involvement in PLCs that was embedded in the Subject Committees and Subject Clusters in the schools and in the circuits. It was teachers who were involved in groups of subjects and these groups were termed PLCs in these respective schools and circuits. In order to provide broader perspectives of the concept of PLCs, I also selected HODs because they monitored and supervised teachers on the daily basis in their respective

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schools. The inputs of the HODs were therefore important in providing additional insights of teachers' understanding of PLCs as well the perspectives of HODs of this concept. The teachers who were selected for this study were knowledgeable in the teaching of Science subjects.

After profiling schools, I have provided a brief profile of the participants as a detailed discussion of the participants is presented in the methodology chapter. The table below illustrates the biographical details of participants to provide additional information. The biographical details of participants are meant to paint a picture about the context of the people from which the data has been generated.

Code of participant	Qualification	Status of employment	Teaching experience	Gender	Age
OLL–A	M+4	Permanent	11	Female	31 – 40
BGB–A	M+4	Permanent	11	Female	31 – 40
MND–A-HOD	M+4	Permanent	13	Female	31 – 40
SMS–B	M+4	Permanent	15	Male	31 – 40
TSF–B	M+4	Permanent	17	Male	31 – 40
SMS–B-HOD	M+4	Permanent	15	Male	31 – 40

Table 1: Biographical details of participants

The table above illustrated that all participants in this study had minimum qualification of M+4, which indicates that they were sufficiently qualified in terms of policy requirement. These qualifications were equivalent to a four year degree or a three year diploma and a teachers' professional diploma. All the participants above when they started teaching had a three year diploma from Teachers' Colleges of Education. But the data indicated that they continued with further studies. The table above also shows that there was gender balance as there were three females and three males selected. The table above showed that all participants fall within one category of age group meaning that participants were not too old or too young. The assumptions that are made by most people is that being young indicates of lack of experience and being old is equivalent to being experienced. But I think that the data is revealing that participants were not too young and not too old.

4.4 Themes emerging from the data analysis

Miles and Huberman (1994) talk about noticing patterns and themes as important in generating meaning from transcribed and interview data. Through the analysis of interview transcriptions and notes taken from document analysis, the following themes emerged: conceptualisation of PLCs, collective learning, the benefit of PLCs in teaching of science

subjects, improved learner outcomes, as well as, teachers and the relationship between PLCs and teaching of science. The discussion of these themes is linked to the literature that was reviewed.

4.4.1 The conceptualisation of PLCs

The data revealed that the conceptualisation of PLCs emanated from the groups that teachers' formed in their respective schools and circuits. DuFour, Eaker and DuFour (2005) talk about the groups of educators committed to working collaboratively in on-going process of collective enquiry and action research. The data revealed that there were three groups of teachers. Two of the three groups, functioned at school level and another one at the circuit level. As part of the data analysis of this study, these three groups were focused upon in order to elicit information regarding the manner in which the teachers and HODs in both schools conceptualised PLCs. In addition to conceptualisation of PLCs, the data further demonstrates how teachers enacted the concept of PLCs and why they enacted the PLCs concept the way they did. Through the data, it was evident that there were these groups in both sites and all participants agreed that there were various groupings (SI). Although different terms were used to refer to these groups, each school had different label for the groups. For example, OLL-A said that *"The groups at school level, we call them Subject Committees and there are also groups in the circuit and we call them Subject Clusters"*

The data generated from School-B was in congruent with the above assertion with regards to the terms that were used to refer to these groups. SMS-B also referred to these groups as *"Subject Committees in the school and Subject Clusters in circuit"*. However, the data further suggests that there were some differences in relation to the terms that were used to refer to these groups in both sites. The different conceptualisation of the terms used also differed at certain instance between teachers and HODs. This could have been an indication to a larger extent of the differences in perspectives of the teachers and the HODs in relation to conceptualisation of PLCs. Although the different terms were used to refer to these groups but the fundamental principle of the functions of the groups were common. For instance, BGB-A provided a broader perspective of the terms that were used for each group as she explained:

> *I will start with the circuit groups; we call them Subject Clusters where the schools from different wards may be four or five schools, come together to have discussions*

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about the subject they teach. Inside the school there are two categories of groups, we have a Science Departmental Committee as well as Subject Committees **(BGB-A).**

It is evident from the above extract that the HOD talked about a different term that was associated with them as the Head of Department, that is, Science Departmental Committee. The Science Departmental Committee consisted of all the teachers who teach science subjects and the HOD by virtue of his or her position, manages and leads this committee. The HOD from School-A was adamant that the committee she headed was the most important one as it was the overall committee under which all other committees fall. In this regard, this is what she had to say:

At school we have a Science Departmental Committee that is made of all the teachers in the Science Department, then we have Subject Committees which fall under the Science Departmental Committee and at the Cluster level we have Subject Clusters **(MND-A-HOD).**

This was also corroborated by the data generated from the HOD from School-B who said:

We have a Science Departmental Committee that accommodates all the educators in the Sciences; this committee is a mother body for all Science subjects committees. Then all Science subjects form their own committees and at the circuit level we have subject clusters **(SMS-B -HOD).**

This was supported by the minutes of the meetings which were kept by these committees which reflected the names of all the teachers who taught Science subjects **(DR, minutes for School-A and School-B)**. The implications that one could draw from the data was that the teachers promoted their own groups or committees that they led and the HODs also promoted their own committees. Such attitudes have implications for teamwork and collaboration within the school and within committees.

The data also generated demonstrated that there were differences in emphasis in terms of conceptualisation of these groups by both the teachers and the HODs. For instance, the teachers referred to those that were at school level as Subject Committees. However, when I talked to the HODs, they referred to those groups within the school as Science Departmental Committee while those at the circuit level were referred to as Subject Clusters. Science Departmental Committees in both sites were led by the HODs and Subject Committees at school level were led by the teachers. That may be the reason why the teachers frequently

used the terms that were associated with their subjects that they taught as opposed to the terms that were associated with the departments that the HODs led. The data did not indicate any tensions that may have been associated with the ways in which teachers and HODs used the terms to describe their communities respectively. It may be noted though that the issue of differentiated identities were at play in this context. Wenger (1991) cited in Lieberman and Miller (2008), noted that communities of practice contribute to construction of identities. It could be argued that teachers and HODs within a PLC constructed their own identities in relation to the role that they played in the PLCs.

According to Martin-Kniep (2008), the groups, as a whole, is driven by the same purpose, that is, to improve everyone's learning in the schools. The data indicates that teachers in these groups had scheduled meetings in which they discussed issues related to their subjects throughout the year. As a result, each committee planned its own meetings for the whole year. For examples, the HODs as leaders of the Science Departmental Committees in their schools, together with teachers in their own departments, compiled a year plan for the meetings. Teachers too, in their Subject Committees, compiled their own year plans for meetings. At circuit level, there were also planned meetings for Subject Clusters. In the final analysis, these meetings were about the same clientele, teachers of Science and Mathematics. Competing demands and priorities could present some challenges, particularly, when it comes to overlaps.

The data also showed that there were different identities that teachers and HODs held regarding community of practice. Teachers on one hand constructed their own identities in the Subject Communities in which they were members. But when teachers attended Science Department meetings, their identities shifted as they associated with another group or committee. In essence, it could be argued that teachers and HODs changed identities more often in these groups of community of practice. The data also revealed that it was imperative that each one of these groups to had its own plan for the whole year. Although there were planned meetings for these committees but there are indications in the data that sometimes emergencies could arise for a special meeting to be convened. It was the committee that knew its needs hence, the meetings were not limited to the year planner but could be extended should the need arise. This was also supported by BGB-A that the meetings were convened as follow:

> *Meetings for Subject Clusters at the level of the circuit are organised by the Subject Advisors, there is one meeting per term and at the school the Science departmental*

meetings are arranged by the HOD and the teachers in that department, there are two meetings per term. Whereas the subject committee meetings are planned by the teachers in the subject committee, there are two or three meeting per term even four **(BGB-A)**.

The data from TFS-B shows that the frequency of meetings were convened, on the main following an annual schedule, but also that flexibility was sought in order to meet the needs of the community of learning professional. This is captured here-below:

In most cases they meet twice in a term because they have to do the moderation outside the school (at circuit level) that is moderation for the cluster, and also set the common papers if they decide to have a common paper for the cluster. So they meet twice when setting and also meet when they have moderated the scripts for learners and also inside the school, as a school we have planned that the departments in the school should meet weekly so that they discuss the issues of the departments, well it happens that they meet may be twice in a month but what we are trying is that it would be good if they meet every week so that they tackle the problems as early as possible **(SFS-B)**.

The data from the HODs in both schools also indicate that although there were differences in terms of the numbers of meetings for each committee, however, such differences were minimal. This was supported by what I observed and noted on my reflective journal that there were planned meetings reflected on the school year plan for internal school committees including subject committees. For instance, the HOD from School-A, mentioned that *"Here at school we meet twice per term and at the circuit level we meet once per term".* This assessment of the situation was supported by the HOD from School-B in term of the frequency of the meetings both at the school level and at the recruit level. This was what he had to say:

Subject committees meet twice per term and subject clusters meet only once per term which means it is three times a year, we meet at the end of each term that is first term, second term and third term **(SMS-B-HOD)**.

The data also highlighted that sometimes there were venues that were needed for convening these meetings. The Science Departmental meetings and the Subject Committee meetings were held within the school premises. However, Subject Cluster meetings were held at a

central venue that was deemed to be easily accessible to all the teachers in the circuit. The HOD from School-B agreed with this view stated that:

The Science Departmental Committee and Subject Committees meet at the school and Subject Clusters they meet at different venues but we usually meet in one of the central venues in the circuit so that it is easy for everyone to come **(SMS-B-HOD)**.

It was clear from the data that the school committees meet at the school and the circuit committees at the central venues within the circuit. This was supported by my own observation in both schools; I observed that teachers would have subject committee meetings during the course of the day within the school premises. I also noticed that sometimes teachers would leave school early to attend cluster meetings where they meet other subject teachers from different schools within the same circuit. According to OLL-A the meetings used to takes place as follow: *"as the Subject Clusters we meet in one of the school in the circuit and for internal meetings we meet at the school"*. According to Pella (2011) it is important for group of teachers to meet regularly to increase their own learning and the learning of their own students. The main focus of the data that has been presented above was to indicate how teachers and HODs conceptualised the concept of PLCs.

4.4.2 Collective learning

This presents a discussion about collective learning in terms of what it is and how it was practised in the study sites. Gerlak and Heikkila (2011) describe collective learning as involving both (1) a "collective process," which may include acquiring new knowledge through diverse actions (e.g. trial and error) assessing information and disseminating new knowledge or opportunities across individuals in a collective, and (2) " collective products" that emerge from the process, such as new shared ideas, strategies, rules or policies. Collective learning encompasses collaboration through the sharing of ideas and teachers learning from one another through collective engagement (Warschauer, 1997). Collaborative learning promotes the teachers' professional development and growth. The data suggests that teachers, through different groups and committees that they were involved in, were able to share ideas and acquire new knowledge. For instance, stated that:

Teachers as professionals in most cases share ideas about a number of things such as teaching strategies, teaching methods, solving problems and in the process of interacting as a group acquire skills that lead to self-development and self-empowerment **(OLL-A).**

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The views expressed in this extract are in line with those of Gerlak and Heikkila (2011), who view collective learning as a process that involves the sharing of ideas and acquiring new knowledge that is transferred across individuals within a group. I also noted on my reflective journal and through observation that in these meetings teachers discuss various issues pertaining to their subjects. These issues include format of the question papers, time allocation and topics to be covered in each grade.

The data further indicated that teachers worked in collaboration to improve their teaching strategies and solve problems that they faced. Therefore collaboration is very important in terms of how the school function as an organisation or for any other institution for that matter. It could be argued that teachers need support in order to improve their teaching and also improve student outcomes. That is why the data reveals that teachers appreciated the support that they got from other teachers. Therefore it could be argued that based on the data generated in this study that it revealed that PLCs assisted teachers to improve their teaching through collective learning. A teacher from School-A had this to say:

Teachers share ideas about subject content that they teach in their respective subjects, do team teaching, discuss problem that they face as teachers, and how to address them. For example is about how to teach a particular topic or chapter and discuss different teaching strategies **(BGB-A).**

The issue of peer support forms part of collaborative learning and some scholars agree that groups are structured to encourage people to help and support their peers in the group rather than to compete with each other (Johnson, 1991). The data also reveal that collaboration manifested itself through the community of practice that teachers formed in their own schools and outside school. They used that platform to share ideas about their school work through engaging in community of practice and through teachers work. This was based on their belief that when they interacted as colleagues and shared ideas, it was going to lead to individual professional development. A teacher from School-B voiced his views like this:

Teachers in these committees teach you how to teach a particular topic or chapter, and we discuss different strategies of solving problems in our respective schools, promote team teaching and collaborative teaching **(SFS-B).**

This extract points to the fact that teachers did not only share ideas about the subject content but also discussed how to solve problems in their respective schools. Therefore the PLCs

transcended the boundaries by not just helping teachers improve their teaching but also contribute to the overall school improvement.

It appears from the data that professional self-development can be the ultimate result of collaborative learning and teamwork which PLC had provided a platform for its development. The data has shown that the notion of PLCs provided teachers an opportunity for the teachers to have a platform where they could interact with each other as professionals. Such interactions emphasised teamwork and collaboration which eventually could lead to self-development. Emphasising this point, a teacher from School-B explained:

The committees provided a platform for teachers to discuss teaching strategies, new curriculum changes, subject content problems and learners' performance **(SMS-B).** .

It is evident from the data that teachers were always faced with new changes that were being implemented in the education system and as a result, teachers felt heavily overloaded by the new education policies that were being introduced or new curriculum changes. It is also evident that teachers were able to overcome such challenges through, amongst others, collective learning.

Central to collective learning is the issue of collegiality. According to Hargreaves (1994), there is a body of evidence that demonstrates that teachers work most effectively when they are supported by other teachers and work collegially. It could be argued that the success of any organisation or institution is based on the contribution of everyone in the team. The data has shown that the PLCs were not only about teachers sharing ideas, strategies and solving problems but it was also about shared leadership through distributed leadership. An HOD from School-A made the following comment:

Teachers as professionals' take positions of leadership in these committees which in turn make my work as an HOD much easier since these teachers assume leadership position in their respective committees. She also talks about self-empowerment and self-development which emanate from these committees **(MND-A-HOD).**

The data has also revealed the importance of leadership in different groups within the school. This study was informed by the theory of distributed leadership due to its potential to allow and provide opportunities for others to assume leadership roles. The data indicated that teachers' leadership was important in functioning of community of practice. In the community of practice teacher leadership manifested itself formally or informally in the sense

that some teachers take leadership role that lead to the effectiveness of the group. The leadership in a group can emanate in many different forms if the opportunity presents itself. In other words, it can be viewed as an emergent property of a group or network of individuals in which group members pool their expertise. According to Gronn (2002), distributed leadership is about allowing and providing opportunities for other stakeholders who are not connected with the formal leadership. Grant (2005) argues that teacher leadership implies a form of leadership beyond headship or formal position.

In the schools, principals, by virtue of their positions, hold most forms of leadership positions. However, this position usually obscures the fact that teachers are also managers and leaders in their own classroom environment whether it is formal or informal. There are two sets of groups that teachers form for the purpose of sharing ideas. One group is found in the school, normally referred to as Subject Committee. This group is made up of teachers who teach the same subject in a particular school. The schools provide teachers with an opportunity to form these groups within various departments internal to the schools. The emergence of the formation of these groups requires leadership which has as its focus, improvement of school result. It is essential that the schools transcend the boundaries beyond the formal leadership positions to promote team work and shared responsibility. To ensure that time on task is respected, teaching time was not compromised when meetings were scheduled. Teachers used to hold their meetings during free periods or during break times in order to avoid disrupting classes or taking teaching time. In this regard, an educator from School-A commented that "*at school we meet in one of the classes, especially after school or during free periods because we do not want to disrupt classes.*

It was the responsibility of each Subject Committee to plan for the year in terms of meetings, length of meetings, frequency of meetings and the subject content to be discussed. In essence, each Subject Committee teachers elected a chairperson and a secretary for a particular term of office ranging from one year to three. The Subject Committee therefore required some form of teacher leadership which complied with basic tenets of distributed leadership. The term of office for the office bearers was reviewed each year in accordance with subject allocation of the school. This is related to the fluid and changing nature of subject teachers each year, mostly as a result of the performance of the previous year. Distributed leadership is viewed as leadership where the leadership activities are widely shared within and between the members in the organisation (Harris, 2002).

The data further revealed that teachers were elected to leadership position, for instance, in the beginning of each year subject advisor would convene a meeting for each subject cluster to elect a subject cluster co-ordinator. The co-ordinator was responsible for convening meeting throughout the year in consultation with the Subject Advisor. This is another form of distributed leadership because it is Subject Advisors who are supposed to convening these meeting throughout the year. Sometimes Subject Advisors are unable to attend all the meetings because of time factor and the numbers of school they service in each district, hence distribute leadership to cluster co-ordinators.

Harris and Muijs (2005) see teacher leadership as leadership exercised by teachers regardless of position or designation. Teachers need to be encouraged to take leadership position whether in the classroom or outside classrooms. There is a growing body of evidence within the school improvement field that points towards the importance for capacity building as a means of sustaining improvement (Fullan, 2001). At the core of the capacity-building model, it has been argued, is "distributed leadership along social cohesion and trust" (Hopkins & Jackson, 2002, p. 95). Implicit within this model of leadership are the leadership practices of teachers, either as informal leaders or in a formal leadership role as a Head of Department, Subject co-ordinator or Teacher mentor (Harris & Muijs, 2003).

One might argue that distribution of leadership lead to school improvement and shared accountability. As Leithwood and Riehl (2003, p. 3) note, "research suggests that leaders can help other teachers to embrace goals, to understand the changes that are needed to strengthen teaching and learning and work towards improvement". The data also revealed that teacher leadership is important, for instance, MND-A-HOD states that "*as an HOD, teachers as professionals takes a position of leadership in these committees which in turn makes my work my work as an HOD much easier since these teachers assume leadership position in their respective committees*". It is imperative for schools to create an environment that provides everyone in the institution with an opportunity to lead. Therefore, PLCs in schools are fundamental in terms of promoting teacher leadership and school improvement. It is imperative for schools to promote distribution of leadership as I have highlighted in this chapter the role of groups of teachers which manifest themselves as PLCs in schools.

4.4.3 Benefits of PLCs in teaching of Sciences

The data revealed that teachers through the sharing of ideas in different groups and committees learn from one another. Their perceptions were that through sharing ideas,

learning about different strategies that other teachers have used in their own classrooms, benefited of benefit to them. For example, a teacher from School-A, stated that:

Teachers share teaching strategies, teaching methods and how to solve problems in their schools, and this is achieved in the process of interacting as a group **(OLL-A)**.

The indications from the data are that teaching is a process that encompasses different teaching strategies, teaching techniques and teaching methods. The data tells us that some teachers were able to learn different teaching strategies or methods from other teachers and were able to use those teaching strategy or method in their own classrooms.

Similar sentiments were expressed a teacher from School-B who maintained that:

Teachers share ideas about subject knowledge and about how they teach their learners, they also do team teaching, for example how to teach a particular topic or chapter or section and discuss different teaching strategies **(BGB-A)**.

While talking about strategies and methods, I must hasten to say that, their perceptions of these two terms did not make any distinctions between them. This became evident during our interviews where teachers talked about these concepts interchangeably. It was when I probed further for clarity purposes that they made attempts to make distinction between the two. For instance, a teacher from School-A described the distinction this was:

There are many teaching methods or strategies that we do not apply in our classes, sometimes you teach with only one teaching strategy or method, only find that learners do not understand it and do no participate actively in your lesson. It important to find out from other teachers what they do in their classes, you can do this through observation of another teacher teaching and learn from him or her **(OLL-A)**.

The statement above suggests that teachers were able to learn from one another through practice learning. The implications from the data could be that teachers could learn from observing other teachers teaching in practice and themselves becoming better teachers in the process. It is therefore crucial for the teachers to interact with one another and improve their knowledge of teaching through contribution from other teachers. For example, a teacher from School-A indicated that:

There are different methods to assess and teach the learners sometimes we discuss about assessing learners individually, sometimes by grouping them they work together and get information from each other rather than getting it from the teacher **(BGB-A).**

The data further revealed that one of the benefits of PLCs is that self-development and self-empowerment. The implication that could be drawn from the data is that self-development emanated from the interactions that teachers are involved at. Once the teachers have been developed by other teachers, they become self-confident and empowered to teach effectively, with more knowledge acquired through the help of other teachers. Self-development involved a set of activities and tasks that an individual engage to learn new things. As one teacher put it:

By developing each other we mean, we equip one another with skills. We share new information through given feedback if someone has attended a workshop **(MND-A).**

4.4.4 Improved learner outcomes and teacher outcomes

There are two major issues that the data indicates. The first has to do with what teachers wanted to achieve. For instance, if a teacher used to experience difficulties in teaching a particular section and through interactions with colleagues in the PLC, that teacher gets the skills or techniques he or she wanted, he or she has achieved the outcome. That is but one part of the story. The second part is that, the broader goal is to enhance the quality of teaching and thus improved learner outcomes. This is the main issue that PLCs aimed at achieving in the first place. Clearly both elements of this theme were realised through the PLCs process. To support this view, this is what one of the participants said:

As teachers we help one another to improve our own teaching and that help us to teach better which eventually lead to our learners passing at the end of the year **(OLL-A).**

The literature has also indicated that when teaching improves the learner outcomes also improve. According to Hord (2009), the effect of PLCs are always positive; when educators work together towards a shared purpose, which is aimed improved learner outcomes, the improved student learning result. Hence, the data revealed that there was a correlation between teachers' outcomes and learners' outcomes in the sense that when teaching improved it also improved the performance of learners. Teachers' knowledge of the subject that he or

she teaches is important in terms of learner performance. When teachers were challenged by the content that they had to teach, it led to learners' poor results.

These are not the only factors that contribute to a change (either positively or negatively), of learner outcomes. There are also environmental factors which should always be taken into cognisance of. Despite all that, the data has also shown that teachers were always engaging each other at different groups of community of practice. It should be noted that PLCs have been credited for improving and learning through collective learning by teachers. The data has indicated that the community of practice contributed to teachers to improve their teaching holistically. Clearly, for the participants in this study, these groups were very helpful. This is what one of them had to say:

> *These groups are important to us because there is no which is an island, you learn from other people and people also learn from you, you are not only there to gain but also to share ideas with them* **(BGB-A)** .

This was also confirmed by the report that I reviewed which had been written by the Science Department HOD for School-A. The report indicated that Subject Committees' members discussed the importance of linking subject content of GET Phase to that of the FET Phase. The logic was that learners should be taught in the GET Phase such that when they reach the GET Phase, they must have been exposed to the required subject content in these phases so that eventually, they do not struggle to pass at Grade 12. What was needed was for teachers to improve teaching strategies and methods as well as the subject knowledge or content. In addition, teachers were to use team teaching, solve problems, enhance networking and support for one another. The data indicates that these were fundamental aspects of innovations that School-A intended to use in improving teaching and learning **(DR, 2012)**.

While I was at School-A, I also witnessed various meetings; one meeting was the Science Department Committee meetings and various Subject Committee meetings. What was evident in these meeting was that everything that was discussed was fundamentally based on how to improve teaching and learning. I think that this pointed to the fact that most schools practiced PLCs in order to improve teaching and learning. However, there was less emphasis on the overall school improvement which might emanate from PLC. The literature also revealed that PLCs could lead to overall school improvement not only teaching and learning but also management and leadership of the school (DuFour & Eaker, 1998; Senge, 2000; Wald &

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Castleberry, 2000). For example, the PLCs tend to lead to the adoption and embracing of teacher leadership in schools where they have started.

4.4.5 Relationship between PLC and the teaching of Science

The data has shown that the teaching of science subjects stood to benefit from the existence and functioning of the PLCs. This was mainly due to the fact that there had been a lot of difficulties that individual science teachers faced. For example, most schools did not have Science Laboratories, apparatus and necessary equipment. So, when teachers exchanged ideas and expertise in terms of how to improvise wherever there were shortages of resources that was an opportunity to arrive at a solution. Commenting on this matter, a teacher from School-A, said:

> *If we have to do practicals and we do not have enough equipment to do those practicals, we come out with a solution how to improvise with some equipment to do those practicals. Because other school do not have Science Laboratories with full equipment so you have to improvise as a teacher and to get some ideas from other teachers how they improvised to do those practicals* (OLL-A).

The data has also revealed that most of science teachers depended on each other in order to deal with difficulties of teaching science subjects and as result relied heavily on the community of practice for support. These teachers were even able to exchange ideas about teaching a particular topic. In support of this claim, a teacher from School-A, had this to say:

> *If I have a problem with a particular topic, I have to ask other teachers how they tackled that topic by that you are being developed in you teaching skills rather assuming that you know everything, because you cannot do everything in your own you have to get some ideas from other teachers, especially when you are teaching Sciences it is not easy* (OLL-A).

This indicated that science teachers in particular relied on collaboration and collegiality, and that they emphasised collective learning to counteract the difficulties that faced in the teaching of sciences. The data has also indicated that some teachers experienced difficulties in teaching certain topics or chapters in the curriculum. Consequently, assistance was sought from other Science subject teachers. This situation described above was supported by a teacher from School-B, who explained as follows:

Although you might understand most of the things about your subject but there are topics or chapters that may pose some challenges for you, hence you can ask other teachers to help you teach that particular topic or chapter (SFS-B).

The implications from the data was that science teachers were engaged in collaborative teaching, where a Science teacher was able to teach for another teacher in his or her presence, so that he or she could observe how a particular topic can be taught. Actually, when this study was conducted, I was able to observe in School-B, a Physical Science teacher teaching Agricultural Sciences for another teacher. Then I asked the Physical Sciences teachers the reason behind that and the response was that the Agricultural Sciences curriculum had Chemistry section which that Agricultural Sciences teacher was unable to teach.

4.5 Challenges facing PLCs

The data revealed that there were some challenges facing PLCs. Firstly, it was revealed that there were some meetings of teachers which took place during school teaching times. This is despite assurances made by various participants in this study that teaching time was not compromised (refer section 4.4.2 above). This concern was raised by a participant from School-B who maintained that:

Most of these groups meet during the teaching hours which are kind of a problem for me because the learners are left behind when they meet in those groups (SFS-B).

The rural context sometimes presented a challenge as it was difficult to meet at the time that suited everybody. Rural areas are characterised by long distances that are travelled between institutions and transport is typically not readily available. The issue of costs also comes in when planning to hold meetings outside the school and outside schools hours. These were challenges that indicated the schools that want to form or promote PLCs should be aware of and guard against if there were to be successful in their endeavours.

4.6 Conclusion

This chapter has presented and discussed the data with regards to the rural teachers' understanding of PLCs. The data has indicated that teachers in these two secondary schools relied heavily on community of practice to improve teaching and learning. They were engaged in collaboration in order to share ideas about Science subjects. The data has also revealed that the promotion of PLCs could lead to the overall school improvement and

therefore should not be confined to improvement of teaching and learning as it was assumed. The next chapter presents the summary of the findings and makes recommendations.

CHAPTER FIVE

ANALYSIS, FINDINGS AND RECOMMENDATIONS

5.1 Introduction

The main focus of this study was to investigate teachers' experiences and perspectives of the concept of PLC. The previous chapter has presented and discussed the data analysis and this chapter provides the summary of the findings. The findings are informed by the research questions that this study was trying to respond to.

5.2 Summary of finding.

To arrive at the findings drawing from the data presented in Chapter Four, this study is using the research questions to summarise the findings.

5.3 Research questions restated

The findings are presented and summarised under each research questions that were posed in Chapter One. As part of presenting the findings, the extent to which each research question has been addressed is discussed

5.3.1 What are the perspectives and experiences of rural teachers regarding the relationship between PLCs and the teaching of science subjects in Vulindlela Circuit?

This study has shown that teachers in these two secondary schools formed communities of practice. It is through these communities of practice that teachers were able to share ideas about the subjects that they teach. As a result, teachers were able to interact with one another with the aim of improving teaching in their respective schools. The findings indicated that teachers held PLC in high esteem such that they relied on the support that they got from each other and one another in order to improve their teaching. This was confirmed indicated by BGB-A from School-A, who said "*You learn from other people and people also learn from you, you are not only there to gain but also to share ideas with them in order to improve teaching*". The findings revealed that science teachers were collaborating with the aim of helping each other improve learning and acquire new knowledge that would make them better teachers. Opfer and Pedder (2011) suggest that if student learning is to be improved, then professional learning of teachers also need to be improved.

This statement was also supported by OLL-A who stated that " *Teachers as professionals in most cases share ideas about a number of things such as teaching strategies, teaching methods and solving problems*". The perception that was depicted by the findings indicated that teachers' experiences and perspectives were that PLCs was imperative in the teaching of science subjects. The findings demonstrated that the teachers from these two secondary schools were in agreement about the importance of teachers engaging with each other or one another in community of practice. This was alluded to by SFS-B the teacher from School-B who said "*Whenever there is a difficult topic or chapter that I have to teach I always ask another teacher to teach it for me hence learn from her or him*". This teacher argued that to know that there was moral support from colleagues made huge difference in term of teaching.

These teachers were able to solve problems that they had in relation to teaching through sharing of ideas. In both schools it has now become a priority that they would reinforce the functioning of community of practice in order to improve the teaching of science subjects. The findings that are summarised above were based on teachers' experiences and perspectives of PLCs and teaching of science. It was also the aim of this study to provide both teachers perspectives and Head of Departments (HOD). I shall now present the summary of the findings in relation to the experiences and perspectives of HOD.

The findings revealed that the HOD shared the similar experiences and perspectives to those of teachers pertaining PLCs. It revealed that the HOD viewed PLCs as essential in terms of teachers' development and as a strategy that could be used to improve teachers' knowledge and thus to improve their teaching. MND-A-HOD indicated that "*When we interact as a group we develop each other and we equip one another with skills*". The findings revealed that the HOD appreciated the collaboration that emanated from the community of practice.

It also promoted team work among teachers which was deemed good for the HODs to manage the teachers who understood the importance of collaboration. This was supported by the SMS-A-HOD, who said "*The working together of teachers is fundamental important in terms of improving teaching*". The findings also revealed that it was imperative for science teachers to be involved in community of practice in order to face the challenges of teaching their subjects as a collective than individuals. This was stated by Hargreaves (1994) that teachers work effectively when they are supported by other teachers and work collegiality.

5.3.2 How is PLCs concept enacted by rural teachers?

The findings revealed that the concept PLCs was enacted through Subject Committees and Subject Clusters that teachers formed in their respective schools and outside schools. The study revealed that these groups can be termed PLCs as they were made of professionals who wanted to improve teaching. The findings illustrated that enactment of PLCs was through the concepts of collective learning and collegiality. SMS-B also referred to these groups as: *"Subject Committees in the school and Subject Clusters in circuit"*. The findings revealed that teachers learn a lot from one another through the community of practice. The findings indicated teachers learn much when they engaged as a collective and share ideas as a group. This was supported by BGB-A who indicated that *"Teachers in Subject Committees and Subject Clusters deal with all challenging things that they are faced with on their daily lives as teachers"*. This statement demonstrates the concept of collective learning and collegiality amongst rural teachers. It should also be noted that the rural teachers in most cases work in schools that are far from the cities where they could easily access information in a number of ways such as print media and internet. Therefore, the concept of working together in community of practice becomes even more crucial for rural school teachers in terms of sharing whatever resources they have in the areas where their respective schools are located. This is also supported by Coleman, Gallagher and Job (2012) that teaching is thinking profession that requires different techniques and methods in order to improve learner performance.

5.3.3 Why do the rural teachers enact the concept of PLCs the way they do?

The findings demonstrated that teachers were involved in community of practice in order to share ideas and acquire new knowledge and skills required for effective teaching. It was through collective learning that teachers were able to acquire new knowledge and skills. According to Gerlak and Heikkila (2011) collective process may include acquiring new knowledge or information through diverse actions. For instance, SFS-B indicated that *"Experience tells him that in a group he got a lot of ideas from different teachers as result he became confident in teaching difficult topics"*. The findings demonstrated that teachers learned different skills from each other or one another when they were interacting in community of practice.

This was also confirmed by OLL-A that *"We are able to share ideas about teaching techniques and different strategies hence acquire new skills"*. The fundamental principle on

which these communities of practice was based, was mainly, collaborative learning. The findings demonstrated that the new knowledge and skills that teachers gained were obtained from one another, and that it assisted them to improve teaching. For instance, a teacher from School-B said that "*A teacher gets developed through interacting with other, gain more insight on the subject matter as a result become a better teacher*". This finding pointed to the importance of collective learning of teachers so that they could improve their teaching through collective engagement.

A teacher from School-B indicated that "*Working in a group helps you get the understanding from other educators of a particular topic or chapter*". The findings also revealed that teachers were working through collegiality to improve their teaching and also improve learners' outcomes in the process. According to Hopkins and Jackson (2002), collegiality relationships and collective engagement practices are at the core of building the capacity for school improvement. The findings revealed that these two schools functioned well as a unit because of collegiality that existed within the school. The different committees that they operated within contributed to the team spirit and taking responsibility of the ownership of the school. The findings demonstrated that collegiality was important in providing support for teachers in community of practice; hence collegiate is an integral part of the effectiveness of PLCs. As the recent literature suggests that an effective professional community has the capacity to promote and sustain the learning of all professional in the school community with the collective purpose of enhancing pupil learning (Siguroardottir, 2010).

The study revealed that teachers were leaders in community of practice and that it was fundamental for teachers to take leadership roles in these groups in order to make sure that they functioned effectively. The study also revealed that teachers took different leadership positions, that is, formal and informal leadership. According to Leithwood *et al* (1999), teachers exercise informal leadership by sharing their expertise, volunteering for new projects and bringing new ideas to the school and helping their colleagues to carry out their classroom duties. The study revealed that in PLCs teachers were leaders who assumed leadership positions by virtue of being in community of practice.

For instance, SMS-B indicated that "*It is teachers who lead Subject Committees and Subject Clusters*". As a result, teachers assumed formal leadership position where a principal or HOD delegated a particular teacher to lead a group of teachers or committee of teachers. Gronn (2000) describes distributed leadership as an emergent property of a group or network of individual in which group members pool their expertise together. The study further revealed

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that teachers were very co-operative with the School Management Team (SMT), which might have been influenced by the different roles of leadership that teachers had played in community of practice.

The findings indicated that teachers exercised democratic principles in PLCs; this was drawn from the manner in which teachers elected their leaders. The study revealed that teachers had leaders that they elected to lead them in these groups and the election of these leaders required teachers to vote for the leaders of their choice. This was highlighted a teacher from School-B who said that *"Teachers elect their own leaders in both Subject Committees and Subject Clusters"*. That indicated that teachers in PLCs practiced democratic principles of electing their leaders. Norms and Standards for Educators (2000) emphasised that teachers need to play several roles, both within and beyond the classroom. Nowadays teachers are expected to be leaders, managers, administrators and show pastoral care. For Cherry (2010) a PLC involves participative leadership which could emerge at any time where there are groups of people within a learning environment. The findings also confirmed that through PLCs teachers practiced a democratic style of leadership hence moving away from autocratic type of leadership.

Having talked about the benefits of professional learning communities' concept, the study did not come up with the negatives. Perhaps, this is due mainly to the fact that all participants had positive experiences of working collaboratively within the schools and with other teachers in the neighbouring schools. My view is that the study did not come up with anything new. No ideas were shared about how their collective practices could be improved for the benefit of the learners. Perhaps, that could be a major weakness of the study in that participants have not expressed views about how their practices can be made better. Perhaps our conversations did not sufficiently push them to that direction.

5.4 Recommendations

The overall view from all the participants in the study was that the PLC concept is good and that it assisted to collaboratively learn from one another. In both schools, PLC concept had been enacted by establishing Subject Committees and Subject Clusters. They strongly believed that through collaborative learning, the PLCs would assist them acquire new knowledge and skills that are required for effective teaching.

There is one recommendation that can be drawn from the findings. There is a serious engagement among members in the PLC regarding how their operations could be improved.

Members of these communities need to find ways of sustaining this concept and the capacity to expand their networking with outside world. For example, they could establish their own financial base that could enable them to invite outside expert on the field to address them about new ideas and experiences that could unfamiliar to them.

5.5 Conclusion

The study has shed light on how teachers enacted the concept of PLCs and the manner in which they enacted this concept. Although this study cannot be generalised as it is the case with case studies but I think it has highlighted fundamental issues that are imperative to South African education as we are moving forward. I must highlight that this study has not come up with new knowledge. Instead, the study has confirmed what is raised in the literature about how professionals can benefit from learning from one another through the PLC.

This study has also shown that there is a need for a shift of focus in terms of how schools function, moving away from centralised to decentralised functioning where all stakeholders are active participants in the functioning of the school. In this study, schools are encouraged to engage in collective engagement. This study has indicated that if teachers are active participants in group activities, they became more co-operative and understanding of the decisions that were taken by the school management. The findings further revealed that this has led to the collective responsibility and accountability of what transpired in the school. In conclusion I think it is imperative for the Department of Basic Education to promote the formation of PLCs in order to improve schools.

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APPENDIX 1 REQUEST FOR PERMISSION TO CONDUCT RESEARCH

P.O. Box 1867

Pietermaritzburg

3200

20 July 2012

Attention: The Superintendent- General (Dr N. Sishi)

Department of Education

Province of KwaZulu-Natal

Private Bag X 9137

Pietermaritzburg

3201

Dear Sir

I am presently a Masters Student in Education Leadership and Management Policy at University of KwaZulu Natal, Pietermaritzburg. I am currently engaged in Master of Education study and preparing for field work for this study. **The study aims to explore the role Professional Learning Communities (PLC's) and how teachers enact the concept of PLCs?** The study will commence as soon as the permission is granted for the study to be done.

I therefore kindly request your permission to do a research study with three (3) teachers in the Science Department of each two secondary schools that I will be conducting research in. It should be noted that this is not an evaluation of competence of teachers/educators and neither is a commission of enquiry. The identities of all who participate in this study will be protected in accordance with the code of ethics as stipulated by the University of KwaZulu-Natal. I undertake to uphold the autonomy of all participants and they will be free to withdraw from the research at any time without negative or undesirable consequences to themselves. In this regard, participants will be asked to complete a consent form. Furthermore, in the interests of participants, feedback will be given to them during and at the end of the project.

Application form for Permission to Conduct Research in KwaZulu Natal Department of Education Institution has been filled in and attached together with this letter.

For more details as follows:

Supervisor

Dr TT Bhengu

School Education, Edgewood Campus

Tel. 031-260 3534

Cell. 0839475321

My Details are as follows:

Mr SG Zwane

Umthoqotho Secondary, Pietermaritzburg

My contact number is 0826457348

Thanking you in advance

Yours Faithfully

_____

Skholiwe G Zwane

APPENDIX 2   **PERMISSION TO BE A PARTICIPANT IN THE STUDY**

P.O. Box 1867

Pietermaritzburg

3200

20 July 2012

The Educator

I am presently a Masters Student in Education Leadership and Management Policy at University of KwaZulu Natal, Pietermaritzburg. I am currently engaged in Master of Education study and preparing for field work for this study. The study aims to explore the role Professional Learning Communities (PLC's) and how teachers enact the concept of PLC's? The study will commence as soon as the permission is granted for the study to be done.

I therefore kindly request you to be a participant in the study. It should be noted that this is not an evaluation of competence of you as a/an teacher/educator and neither is a commission of enquiry. The identities of all who participate in this study will be protected in accordance with the code of ethics as stipulated by the University of KwaZulu-Natal. I undertake to uphold the autonomy of all participants and they will be free to withdraw from the research at any time without negative or undesirable consequences to themselves. In this regard, participants will be asked to complete a consent form. Furthermore, in the interests of participants, feedback will be given to them during and at the end of the project.

For more details as follows:

Supervisor

Dr TT Bhengu

School Education, Edgewood Campus

Tel. 031-260 3534

Cell. 0839475321

My Details are as follows:

Mr SG Zwane

Umthoqotho Secondary, Pietermaritzburg

My contact number is 0826457348

Yours Faithfully

_____

Skholiwe G Zwane

..........................**SIGN AND RETURN**...

Consent Form

....

Declaration

I .... (**Full name of participant**) hereby confirm that I understand the contents of this document and the nature of this research project. I am willing to participate in this research project. I understand that I reserve the right to withdraw from this project at any time.

Signature of Participant   Date

....

PERMISSION TO CONDUCT THE STUDY

P.O. Box 1867

Pietermaritzburg

3200

20 July 2012

The Principal

_____

I am presently a Masters Student in Education Leadership and Management Policy at University of KwaZulu Natal, Pietermaritzburg. I am currently engaged in Master of Education study and preparing for field work for this study. The study aims to explore the role Professional Learning Communities (PLC's) and how teachers enact the concept of PLC's? The study will commence as soon as the permission is granted for the study to be done.

I therefore kindly request your permission to do a research study with three (3) teachers in the Science Department in your school. It should be noted that this is not an evaluation of competence of your teachers/educators and neither is a commission of enquiry. The identities of all who participate in this study will be protected in accordance with the code of ethics as stipulated by the University of KwaZulu-Natal. I undertake to uphold the autonomy of all participants and they will be free to withdraw from the research at any time without negative or undesirable consequences to themselves. In this regard, participants will be asked to complete a consent form. Furthermore, in the interests of participants, feedback will be given to them during and at the end of the project.

For more details as follows:

Supervisor

Dr TT Bhengu

School Education, Edgewood Campus

Tel. 031-260 3534

Cell. 0839475321

My Details are as follows:

Mr SG Zwane

Umthoqotho Secondary, Pietermaritzburg

My contact number is 0826457348

Yours Faithfully

_____

Skholiwe G Zwane

.................SIGN AND RETURN.....................

Consent Form

....

Declaration

I .... **(Full name of principal)** hereby confirm that I understand the contents of this document and the nature of this research project. I am willing for my school to be a research school in this project. I allow the researcher to conduct the study in my school.

Signature of Principal   Date

....

INDIVIDUAL SEMI-STRUCTURED INTERVIEW GUIDE FOR HOD

Introduction

I will first introduce myself and thank the participants for agreeing to participate in the individual interview. The semi-structured interviews are in-depth interviews between the interviewer and interviewee (Cohen, Manion & Morrison, 2011). I will emphasise that there are no right or wrong answers but rather various view points and I am interested in negative comments as positives ones.

Professional Learning Communities

- Are there any groups in the school or circuit or community where teachers share ideas about their school work? YES/NO
    - If the answer is YES:
    - **Follow-up questions**: What term do they use to describe the nature of the group? Who are the members of that group? How often does it meet? Where does it meet e.g. after school, during the week; on weekends, or over school holidays etc.
- If you have participated in such groups, what are your experiences of working within the group? **Probes**: Do members discuss issues relating to their subject content? If they do, please elaborate! If they do not discuss subject related issues, what else do they discuss? Do you find the group useful? If you do in what way is it useful?
- What do you think are the strong points of such groups where professional meet and discuss issues affecting them? **Probes**: Do they have any role to play in education? What role (if any) do you think they can play?

I am still holding the promise of ethical issues I mentioned at the beginning that **confidentiality** and **anonymity** is guaranteed.

Thank you for your time and support!!

<u>INDIVIDUAL SEMI-STRUCTURED INTERVIEW GUIDE FOR TEACHERS</u>

Introduction

I will first introduce myself and thank the participants for agreeing to participate in the individual interview. The semi-structured interviews are in-depth interviews between the interviewer and interviewee (Cohen, Manion & Morrison, 2011). I will emphasise that there are no right or wrong answers but rather various view points and I am interested in negative comments as positives ones.

Professional Learning Communities

- Are there any groups in the school or circuit or community where teachers share ideas about their school work? YES/NO
    - If the answer is YES:
    - **Follow-up questions**: What term do they use to describe the nature of the group? Who are the members of that group? How often does it meet? Where does it meet e.g. after school, during the week; on weekends, or over school holidays etc.
- If you have participated in such groups, what are your experiences of working within the group? **Probes**: Do members discuss issues relating to their subject content? If they do, please elaborate! If they do not discuss subject related issues, what else do they discuss? Do you find the group useful? If you do in what way is it useful?
- What do you think are the strong points of such groups where professional meet and discuss issues affecting them? **Probes**: Do they have any role to play in education? What role (if any) do you think they can play?

I am still holding the promise of ethical issues I mentioned at the beginning that **confidentiality** and **anonymity** is guaranteed.

Thank you for your time and support!!

DOCUMENT REVIEW

Introduction

The document analysis is a useful instrument to produce data. The reason for document analysis is that it provide in depth knowledge of what teachers discuss or do when for instance attend a workshop or subject committee meeting.

DATA GENERATING DOCUMENTS

Which documents do I need to review?	What information do I need	Why do I need that information?
Letters	To know who write letters and the content of letters	Does it relate to subject content?
Emails	To know who sends emails and the email content	Does it relate to subject content?
Memoranda	Content information	To know whether it is related to the subject content or not.
Agenda	Items on the agenda	Whether items are related to the subject content.
Minutes	Content of minutes	To know if minutes discuss anything related to subject content.
Reports	Who write reports and the content of the reports	To know what position a person who writes reports hold and how report content is related to subject content.
Diaries	Future planned engagements e.g. dates of meetings	To determine the frequency of interaction or meetings.
Notes	Subject content	To know if notes are about subject content.

I am still holding the promise of ethical issues I mentioned at the beginning that **confidentiality** and **anonymity** is guaranteed.

Thank you for your time and support!!

APPENDIX 7

A. *BIOGRAPHICAL INFORMATION*

1. Gender

Male		Female	

2. Age

21 - 30		31 - 40		41 - 50		51+	

3. Formal Qualification

M+3		M+4		M+5 and above	

4. Nature of employment

Permanent		Temporary		Other and specify	

5. Years of teaching experience

6. What subjects are you presently teaching?

7. Years of experience in teaching the subject/s above

B. *SCHOOL INFORMATION*

8. Learner enrolment of your school

9. Number of educators, including SMT members in your school

10. Location of your school

Rural		Urban	

11. School fees

Yes		No	