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CLUSTER TEACHING AS AN ARENA FOR CONTINUING TEACHER PROFESSIONAL DEVELOPMENT. A CASE STUDY

BY

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399659

Submitted in partial fulfillment of the requirements of the degree of Master of Education

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DECLARATION

I declare that this research report is my own work completed under the supervision and guidance of my supervisor, Francine de Clercq. It is being submitted for the degree of Master of Education, at the University of the Witwatersrand. It has not been submitted before for any degree or examination in any other university.

……..... 28 June, 2011

Rachel Memory Mnyamula Phiri

LIST OF ABBREVIATIONS

CASS – Continuous assessment

CI – Curriculum implementer

CL – Cluster leader

FET – Further Education and Training

FGDs – Focus group discussions

HOD – Head of Department

IQMS – Integrated Quality Management System

JICA - Japan International Co-operation Agency

MDE – Mpumalanga Department of Education

MSSI – Mpumalanga Secondary Science Initiative

OBE – Outcomes based education

PD – Professional development

UP – University of Pretoria

ABSTRACT

Internationally, governments have recognized the significance of continuing teacher professional development in their attempts to reform their educational systems. However, not many have the resources and capacity to support teachers in this endeavor (Nelson & Slavit, 2008). Teachers' initiatives at their own professional development therefore become important steps towards realizing the goal of continuing teacher professional development and reforming the education sector. Using a case study approach, the study aimed to explore the use of cluster teaching as a form of teacher professional development in one cluster in Mpumalanga. It focuses on teachers' experiences of cluster teaching. Interviews and observations provided most of the data for this case study and analysis was ongoing during the data collection process. The views of participants and what I observed is presented before the analysis and interpretation is done.

The argument developed in this study is that every form of teacher professional development is best suited for a particular purpose with particular kinds of teachers and hence, the need for as many forms as possible to meet the different purposes that PD has. Cluster teaching as a form of PD serves the purposes of helping teachers improve on their subject content and pedagogical knowledge and to have a positive impact on their attitudes and culture while at the same time helping to improve the performance of learners. When teacher-initiated, it acts as an effective form of teacher professional development and accountability and covers up for the lack of district support and poor resources in some schools. Such cluster teaching therefore becomes a productive way of improving teachers' professional practices in their own contexts.

TABLE OF CONTENTS

ABSTRACT 5
TABLE OF CONTENTS 6
INTRODUCTION 8
1.1 Background 8
1.2 Problem Statement 11
1.3 Aims of the study 12
1.4 Research Questions 12
1.5 Rationale 12
CHAPTER 2 14
LITERATURE REVIEW 14
2.1 Teacher Professional Development 14
2.1.1 Different Forms of Teacher Professional Development 15
2.1.2 Strengths and Weaknesses of Different PD Forms 16
2.1.3 Characteristics of effective PD 17
2.2 Teacher change 23
2.3 Educational Change 26
2.4 School Cluster System 29
2.5 Cluster Teaching 32
2.6 Teacher Learning Communities 33
2.7 Theoretical Framework 35
CHAPTER 3 37
RESEARCH METHODOLOGY 37
3.1 Research Design 37
3.2 Sampling 38
3.3 Data Collection Instruments 39
3.4 Validity and Reliability 41
3.5 Data Analysis 42
3.6 Limitations of the Study 42
3.7 Ethical Issues 43
CHAPTER 4 45
DATA PRESENTATION 45
4.1 Origin and Purpose of School Clusters in Mpumalanga 45
4.2 Profile of Participants 48
4.3 Teachers' Attitudes and Experiences Regarding Professional Development 49

4.4 Characteristics of Cluster Teaching as PD 53
4.4.1 Purposes and skills/competencies developed through cluster teaching 53
4.4.2 Organization of cluster teaching 53
4.4.3 Role and effectiveness of the district and the CIs 54
4.4.4 Role and effectiveness of cluster leader 57
4.4.5 Role and effectiveness of teachers 59
4.4.6 Importance of team work 60
4.4.7 Teacher learning from cluster teaching 62
4.4.8 Impact of cluster teaching on learners 69
CHAPTER 5 73
DISCUSSION AND INTERPRETATION OF FINDINGS 73
5.1 Nature and Form of Teacher Professional Development 73
5.2 Clustering and Teacher Development 75
5.3 Cluster Teaching and Teacher Learning 78
5.4 Cluster Teaching and the New Curriculum 81
5.5 Cluster Teaching as a Professional Learning Community 82
5.6 Cluster Teaching and Learners' Learning 86
5.7 Conditions for Effective Clustering and Teacher Development 88
5.7.1 Commitment 89
5.7.2 Trust and Collegiality 89
5.7.3 Leadership 90
CHAPTER 6 93
CONCLUSION AND RECOMMENDATIONS 93
REFERENCES 97
APPENDICES 102
APPENDIX A: INTERVIEW GUIDES AND CONSENT FORMS 102
APPENDIX B: ETHICS CLEARANCE AND REGIONAL PERMISSION LETTER 105
APPENDIX C: FORMS TO BE FILLED IN CLUSTER MEETINGS 108
Appendix E: Example of an agenda for cluster meeting provided in the policy 112

List of Tables

Table 1: Profile of Participants 48
Table 2: Top 3 best performing Circuits in Mpumalanga 69

CHAPTER 1

INTRODUCTION

1.1 Background

Teacher professional development has become an urgent priority for most governments in need of improving their education system. The South African educational landscape has undergone dramatic educational changes in the past decade, impacting heavily on the roles and work of teachers in the classroom. Villegas-Reimers (2003) states that educational reforms and teacher professional development share a symbiotic relationship and must go hand in hand for either or both to work well. Thus, according to her, reforms without teacher development or vice versa are a recipe for disaster, and South Africa has learnt this in a hard way.

South Africa underwent a complete overhaul of its education system, appearing to render useless most of what teachers knew and demanding new types of skills, values, knowledge levels and beliefs. It was a major departure from what used to be and it meant teachers had to relearn almost everything. It is no wonder that teachers' professional development is today one of South Africa's major education goals for the success of its educational reforms. As Borko (2004) argues, the changes in classroom practices demanded by the reform vision ultimately rely on teachers.

The South African department of education realized the centrality of teacher learning in achieving the desired change in education when it envisions a teacher as a lifelong learner to play its multiple roles (Jansen, 2001). It is therefore undisputable that teachers have to do a great deal of learning to change their beliefs and values about teaching and learning, acquire new skills and knowledge in pedagogy and content, as well as change their views about learners to achieve the intents of the new education reforms. Guskey (2002) contends that schools can be no better than the teachers and administrators working within them. This emphasizes the importance of teacher learning and professional development in both the attainment of reform goals and the improvement of teaching and learning.

South Africa presents an especially challenging case with its widely unequal school system. For the majority of poor schools, teachers are the best resource learners have towards a better

education (McNeil, 2004). Thus, teacher professional development holds an important key for such learners. Many measures and structures are in place to provide teachers with professional development but these are seldom utilised. For instance, the Sector Education and Training Authorities for Education, Training and Development Practices (ETDP SETA) were specifically set up to assist with better delivery of education, training and development of teachers; so was the Education Labour Relations Council's (ELRC) 2000, resolution 1 which makes provisions for 80 hours of teacher professional development in a year (Ryan, 2007) and the ELRC Integrated Quality management resolution 1 of 2003. However, there is also a dearth of capacities to support teachers in learning their new roles and practices which make the ETDP SETAs and ELRC resolutions in many schools all but white elephants. The little professional development that teachers receive is conducted in a way that makes it, at best, a small gain for teachers but, at worst, greater confusion for teachers as they come out of these activities with more questions than answers.

Many teachers misunderstood and misinterpreted what they were supposed to do in this new educational dispensation (Harley & Wedekind, 2004). The 2000 curriculum review committee also indicated that there was very little effective training to induct teachers into the thinking of the new education system and identified insufficient teacher induction and training as one of the reasons for poor implementation of the curriculum (Chisholm, 2000). Besides, academics and researchers alike have commented on the levels of complexity of the reforms undertaken in South Africa, and that they are above and beyond the average level of teacher competencies (Jansen, 2001).

Little (2001, cited in Villegas-Reimers, 2003) analyzes the professional development provided to US teachers and this could be applied to what happens in South Africa. She argues that officials conceive of professional development as a process of inspiration and goal setting with already set goals and objectives of change, and that professional development activities are mainly used to motivate teachers to strive to meet them. However, these activities rarely help teachers in terms of what and how they are supposed to do it, leaving them at the very same level of knowledge and competences as they had before undergoing this professional development. Professional development programs are more often used to get out of school and not really for enriching teachers' professional lives, forcing teachers to look for anything that can help them cope in their classrooms.

It is also important to recognise the fact that over the years, educational change in South Africa has been marred by teacher-bashing, in which educational ills are attributed to some problems with the teacher. Yet, maintaining a positive stance during a change process is crucial to improvement, and such improvement is only possible if people (teachers in this case) are motivated, individually and collectively, to put in the effort necessary to get results (Levin & Fullan, 2008). This view is rooted in the fact that teacher-bashing demotivates teachers as they feel attacked from the outset, thus pushing them to go on the defensive. When things get to this point, it is very difficult to engage with teachers for any meaningful improvement. This, then, precludes a crucial condition for authentic improvement, as Danielson & Hotchschild (1998, cited in Levin & Fullan, 2008:293) points out: "changing practices across many schools will only happen when teachers…see the need and commit to making the effort to improve their daily practice".

Publicizing more successful initiatives makes teachers start thinking about new ways of improving their own practice. Hence, instead of just being overwhelmed by the feeling of hopelessness and helplessness, they begin to find ways in which they too can improve their situation. This then opens up a whole new area of possibilities that teachers can use to improve their practice. This, however, is not to say that all criticisms of teachers are unwelcome, but rather that teachers should be given constructive criticisms which point to the problem and suggest ways and means of solving or alleviating that problem in an amicable way.

It is against this background of the failure by education departments to provide meaningful support to teachers that I became motivated to conduct a study on teachers' initiatives, in response to the new educational reforms, at improving themselves and their learners' learning experiences and results. To cope with different issues that the new education system brought about, provinces introduced the school clustering system. Education districts throughout the country have used school clusters, usually based on subjects taught (Jita, et al, 2008). These clusters serve different purposes but are often used as administrative tools to help district officials pass down directives more efficiently, without having to visit every school. Thus more than an administrative tool, school clusters can also be an educational tool to empower teachers and enable them to work with and benefit from each other.

Yet, school clusters are rather unpopular amongst South African teachers. They have mainly resulted in a structural change to the daily routine without altering teachers' classroom

practices or they have increased the burdens the new education system has put on teachers (Nelson & Slavit, 2008). In contrast to this common view, a group of teachers from a region in Mpumalanga found a productive use for these clusters when they realized their potential to meet their needs. They began what became known as cluster teaching. Cluster teaching or teaching together is a variant of school clusters, and represents an interesting form of teachers' initiative at improving themselves and their students' learning experiences.

In this cluster teaching, teachers from different schools come in a cluster to discuss their understanding and knowledge of different topics in their subject areas. They then divide the topics of the subject area amongst themselves, asking individuals to choose topics they are good at. Then, these teachers bring their learners in one place/centre and divide them into several mixed classes. This happens only with grade twelve learners either during holidays, weekends or other special arrangements during the week. Teachers not teaching at a particular time attend other teachers' lessons and benefit from new modeling practices by other more experienced teachers who are known to be effective because they have continuously produced good learners' results in these subject areas. Thus, the program ends up providing a new form of teacher-initiated professional development for teachers whereby they and their learners learn with and from each other.

1.2 Problem Statement

Continuing professional development of teachers is regarded as an essential prerequisite for improved teaching and learning in South African schools. This does not come as a surprise considering the fact the country has just revamped its education system and many research studies continue to reveal teacher incompetence or lack of content and pedagogic knowledge as the root cause of poor school performance in the country (Fleisch, 2007; Hoadley, 2007).
In order to raise education standards, there is a need for teachers to learn continuously and develop the desired beliefs, attitudes, skills and values required. The new education system envisions teachers who are professional and proactive in identifying their areas of development needs. However, the dominant forms of continuing teacher professional development, such as fragmented department-driven workshops, seminars and university courses, have been criticized as ineffective in improving instructional quality (Schwille & Dembele, 2007). With the ushering in of a very different curriculum system, there is a dearth of system support capacities to help teachers who are also being pressurized by bureaucratic

demands which do not create conducive conditions for teachers to engage in professional development (PD) activities; a realization that department-driven TD has been shown often not to be as effective as teacher-driven TD.

It is therefore necessary to look for other forms of teacher-driven professional development, such as cluster teaching which could manage to contribute towards improved instructional quality hence learner achievement.

1.3 Aims of the study

The purpose of this study is to:

- Assess the perceptions of teachers about the contribution of cluster teaching to their knowledge and competences, and to improve their subject teaching.
- Explore the factors which assist and hinder the use of cluster teaching as a form of continuing teacher professional development;

1.4 Research Questions

Looking at teachers' initiatives at professional development through cluster teaching, the central question of the study is to examine the experience of teachers who engage with this initiative. The study has four sub-questions:

1. Why do teachers participate in such a cluster teaching program?
2. What kind of knowledge and competences do they learn?
3. How do teachers negotiate and experience their participation into this program?
4. How has the program contributed towards individual teacher learning and improved practice?

1.5 Rationale

Because of the continued poor school performance, there is more focus nowadays on teachers' weaknesses than on positive teachers' attempts and initiatives at improving themselves. Teachers do not believe there are alternative ways for teachers to improve themselves and are discouraged by not hearing what others are doing to improve themselves.

Research is therefore needed to highlight the few teachers' initiatives which work and show how bureaucratic measures can be adapted and changed to enhance both teachers' and learners' learning experiences.

This study assumes that cluster teaching has the potential of filling this gap as teachers can learn practical competences, with their learners in similar classroom contexts and by observing other teachers teach their subjects. They can learn how other teachers deal with particular topics, how they introduce and link them, deal with certain problems and reach out to their learners to make them engage with and learn from these issues. By looking at learners' engagement with different lessons, the observing teachers are able to identify concrete ways in which they can capture learners' attention to enhance their learning experiences.

The study therefore hopes to contribute towards an understanding of a TD form which has not been researched much in South Africa, namely teacher-driven and teacher-initiated continuing teacher professional development. It hopes to provide useful suggestions to teachers who are interested to learn from working with other teachers in their subject and observe how they teach similar topics.

Another reason for undertaking this study is that I have personally been part of such a cluster teaching program as a teacher for a year, having also gone through many traditional ineffective district-organised teacher development programmes (workshops & seminars, in particular). Having experienced the differences between these programs, I am interested in this particular study to understand what teachers think about cluster teaching in relation to their learning and their learners' learning.

CHAPTER 2
LITERATURE REVIEW

This chapter reviews the relevant literature on teacher development. It draws upon local and international literature on various forms, aims and modes of delivery of teacher development in the hope of drawing a conceptual framework for this study. It begins by reviewing the literature on teacher professional development as it is the central issue and then the literature on teacher and educational change. Teacher professional development is essentially about change as it is about changing teaching practice or some of its aspects. The literature on school cluster system is then reviewed to understand it in the light of sub-themes.

2.1 Teacher Professional Development

Wideen *et al* (1996:188) consider teacher development as involving "change and improvement in one's practice over a period of time". They also argue that central to this concept of teacher development is the notion that changing one's teaching is a learning process which involves, in part, building upon and changing prior beliefs and actions about teaching. In other words, Wideen *et al*. (1996) imply that teacher development is a process of changing teachers' culture. Cochran-Smith & Lytle (2001, cited in Villegas-Reimers, 2003) concur that professional development is a process of culture-building and not mere skills training which is affected by the coherence of the school programme. This is a useful point in that school programmes, such as timing of classes, teaching and learning processes and so on, should be aligned to teachers' professional development activities/programmes. It also means that what teachers are doing in their professional development has to have a bearing on what is happening in their schools.

In the same vein, Fullan (1991) states that change is about re-culturing. Thus, to achieve the vision in change efforts requires changes in the school culture as well as in individual teacher's conceptions of their practice and of themselves as learners. Sarason (1971) accurately locates the problem of education change in not understanding the culture of the school. If schools are to change, teachers have to change and this means the culture of the school has to change. Fullan (2008) rightly observes that the problem of change is a process of redoing and rethinking. Teacher development then entails the creation of school cultures

where discussions of educational issues occur regularly and schools become not only workplaces but also learning places. Teacher development is therefore about the building of desired school cultures.

2.1.1 Different Forms of Teacher Professional Development

Substantial international literature on teacher professional development (PD) has existed for several decades. During these decades, teacher development has been conceptualized differently and has evolved with time and different needs. This evolution has been evident in various facets of the field such as terminology, concepts, central features, practices and impact of teacher development. However, a closer inspection of this literature reveals that educationists' views and practices regarding teacher development have not changed significantly.

In their outline of the trajectory of this field, Wideen *et al* (1996) state that teacher development ideas were originally based on a stage theory. Using this theory, experts sought to identify concerns, problems, or tasks common to teachers at various stages of their career to provide the knowledge appropriate to each stage. The underlying assumption was that, by recognizing and understanding stages through which teachers pass, outside experts would be able to know better the type of knowledge most beneficial at a certain period in a teacher's development (Wideen *et al*, 1996). According to this view, teachers were mere recipients of the knowledge produced by outside experts, and their development depended on doing as you were told. This was a teacher-proof response to problems experienced by teachers that would solve these.

A different view developed at the same time, partly as a response to the first view, which was based on a more interpretive approach. Being popularised with the work of Stenhouse (1984) according to Wideen *et al* (1996:188), who argue that "the way to a better school lies in increasing the number of teachers who were not continually frustrated by the system". This view argues for a more teacher-centered approach, focusing on the dilemmas and meanings surrounding the changes that teachers find important (Wideen *et al*, 1996). According to this view, experts work with teachers to construct the needed knowledge, thereby demystifying the notion that knowledge is the preserve of experts only. This view of teacher development has spread widely and has been adapted and improved upon to suit various contemporary

educational contexts. This has led to different forms of teacher development occurring at different periods of time, reflecting the thinking and needs of the time, with the notion that teachers should work with other professionals for their PD.

What remains consistent in the developments in this field is the idea that PD involves experts. The constant changes that teachers make, when meeting the changing needs of learners in the classroom or when trying out ideas heard from other teachers, are rarely recognized. Little research has been published on teacher-initiated development activities, where teachers learn with and from each other rather than from experts. With a few exceptions, the literature seems to argue that someone outside the classroom is needed to assist in deciding what changes or improvements teachers need to make as well as how those changes are to be made.

Another critical area, often overlooked in the literature on PD, is the suitability of different forms of professional development for particular purposes.

2.1.2 Strengths and Weaknesses of Different PD Forms

Literature indicates that teachers' professional development comes in many forms (Keay, 2007) and can broadly be categorised into two: district or university-based, including workshops, seminars, short courses, lesson studies, district or university- initiated communities of practice and teacher research groups; and school-based and/or teacher-initiated which involve mentoring, coaching, teacher initiated professional communities like cluster teaching (Desimone *et al*, 2002; Garet *et al*, 2001; William, 2007/8). Many researchers (Lieberman, 1995; Schwille & Dembele, 2007; Villegas-Reimers, 2003) have criticised most traditional forms of teacher development (usually district and/or university based) such as workshops, seminars and courses for providing ineffective models of passive learning, being *ad-hoc,* fragmented, and far removed from classroom situations that they have little effect on practice. In the same vein, most school-based forms of PD are lauded for being close to the classroom, giving teachers autonomy and enhancing collaboration amongst teachers (Desimone *et al* 2002; Garet *et al*, 2001; Lieberman, 1995; Villegas-Reimers, 2003). As stated earlier, however, every form of development is good at serving a particular purpose and not all others.

There is not much written in the research literature as to which form is more suitable and effective for achieving what purpose. Different forms of professional development have different targets or teacher competences or knowledge areas for which they are effective. For instance, if the aim is to model a different classroom practice, then workshops are an inappropriate form of development whereas school-based or cluster-based professional development is better. Thus, each form of PD fits a specific purpose and it is the purpose and context in which it is to be carried out which influences the sort of PD necessary to reach it.

Workshops and seminars are particularly suited to dissemination of information about a particular aspect; they are effective at inducting teachers into and motivating them to carry out a particular practice or change. However, these do not help teachers understand the 'how' part of what they are supposed to do and this is best achieved through coaching, mentoring, lesson studies and professional communities of practice. Similarly, certain content knowledge is best learnt through short courses, especially where one lacks the theoretical background of the particular knowledge. District-initiated PD is good for advocacy and standardisation whereas teacher-initiated PD is better at responding to the real need of individual teachers. These are rough categories of what these forms are best suited for and it is up to practitioners to decide the precise fit-for-purpose form of PD, considering the teacher needs and the context in which it would take place.

2.1.3 Characteristics of effective PD

Recent PD literature focuses on what makes professional development effective, providing lists of effective characteristics such as collaborative, close to the classroom, and teacher centred PD (Darling-Hammond & McLaughlin, 1995; Dembele, 2005; Desimone *et al* 2002; Garet *et al*, 2001; Schwille & Dembele, 2007; Villegas-Reimers, 2003). A number of scholars have identified two main sets of characteristics that contribute to improvements in teacher practices and learner achievements, namely core and structural features (Desimone *et al*, 2002; Garet *et al*, 2001; and Schwille & Dembele, 2007). Core features include opportunities for active learning, coherence of the programme, and content focus. Structural features include duration, form/type of development programme and collective participation. It is not difficult to notice that core and structural features are interrelated. In the discussion that follows, these features flow easily into each other and no clear distinction between them is always possible.

Proximity to the classroom

Informed scholarship on teacher professional development suggests that this project should be conducted in, or close to, the classroom of participating teachers, that is, it should be school-based (Dembele 2005; Wideen, 1987), or classroom-based (Thiessen, 1992). Drawing extensively from the Japanese concept of lesson study, Dembele (2005:189) argues that the most effective place to improve teaching is in the context of a classroom lesson. Teachers have to learn as they are doing, that is in practice within their classroom context. Dembele (2005) further states that reconstructing one's practice is hard in that it requires changes in deep-rooted ideas and beliefs that form the basis of one's practice, hence the need for an on-site development so that the desired practices can be extensively practiced and the results can be seen in the actual classroom setting.

This position is justified using Guskey's theory of attitude and perceptual change in teachers, which stipulates that changes in attitudes and beliefs come after changes in behaviours (Schwille & Dembele, 2007). That is, first a teacher experiences a new practice which then changes his/her views. New attitudes that teachers are supposed to develop in order to change their practice are attained when they practice. This gives teachers an opportunity to modify the new practice they are learning so that it fits their context and becomes their own. In considering teacher behaviours, Wideen (1987:9) points out that teachers' behaviours are a product of a set of norms, such as teacher collegiality and standards determined at school level (school culture), hence any attempt that a teacher makes to change his/her behaviour can occur only if the norms of the school change. This is tantamount to emphasize the importance of having on-site teacher development as it allows teachers to see how they can change the school norms to accommodate new behaviours.

Duration

The training should not be episodic, but should take place over an extended period of time in order to have an impact. This is in recognition of the fact that changing attitudes and beliefs cannot happen overnight or within a short period of training time. Teachers need to have time to learn and reinforce the new behaviour with evidence from their practice. In addition, teacher development activities have to be collaborative, that is, they should be a team rather than individual effort (Dembele, 2005:187). Teachers should work with each other, either teaching the same subject, teaching the same grade or just from the same school.

Collaborative

As stipulated above, changing school norms to support new behaviour is difficult on an individual basis; it requires all members involved to work together. Teachers would benefit from sharing ideas and thinking about problems they would likely face and ways in which they can deal/address them. This emphasises the importance of creating networks, either teacher-to-teacher or school-to-school networks. As Corcoran (1995) rightly observes, working with colleagues increases the likelihood of teachers critically examining the new standards being proposed by a development programme, which then creates opportunities for them to develop, master and reflect on such approaches. The debates that would ensue from this critical examination of the proposed approaches offer teachers intellectual, social and emotional engagement with ideas and colleagues. In her argument for traditional professional communities, Little (2001) suggests that resources for the improvement of teaching are created through interaction among teachers and others as they work with teaching and learning artifacts in the context of daily practice. Other scholars, such as Desimone, et al (2002), also recognize the need for teachers to intellectually engage with development programmes and to experience results if they are to take the programme seriously and use it to change their practice.

Collaborative work on teacher professional development activities is also beneficial from a social and emotional perspective. No matter how small change is, it is a highly emotional venture as it represents a substantive departure from teachers' prior experiences, established beliefs and current practices, thereby taking them into a world of uncertainties (Levin & Fullan, 2008; Little, 1993). Thus, in interacting with others, these emotions get addressed as teachers share their fears and expectations, something which is, in a way, comforting. As Levin & Fullan (2008) contend, if emotions are left unaddressed, no change effort can succeed. Working with colleagues addresses these issues and also builds the capacity to sustain the new approaches learnt in the development programme as teachers will be reflecting on it. The opportunities to explore, question and debate issues will help them integrate new ideas into their repertoires and classroom practices.

Focus and coverage

Teacher development that contributes towards improved practices has to focus on a small specific area. In talking about education change in general, Levin & Fullan (2008) argue that, for change to be realized, it is necessary to set few ambitious but achievable goals that are

clearly articulated on a specific area. This perspective in thinking can also be used in relation to teacher development. Teacher development programmes should not aim at changing everything at once, as this presses teachers to change on many fronts at the same time, a tendency that leads to teacher burnout as the process becomes so overwhelming that they are tempted to give up (Little, 1993:130). To be effective, a teacher development programme has to give teachers a chance to absorb the changes they have learnt and those associated with the entire spectrum of that specific area. For example, if teachers are learning new methods of teaching, they also have to learn the content knowledge and how they can present it, the materials and examples to be used to reach out to their learners, as well as the ways in which they can assess learning in their learners.

Further effective teacher development programmes are those grounded in knowledge of teaching and learning, that is, teacher development should be considered in the same way as student learning as learning patterns of both adults and children are similar (Corcoran, 1995; Desimone *et al*, 2002; Garet *et al*, 2001; Guskey, 2003, and Wideen, 1987). Just as when teaching children we aim at building onto what they already have or have learnt, so should teacher development do the same. It has to be coherent and incremental. Teacher development programmes that focus on specific areas at a time and build on those areas in subsequent trainings are therefore more likely to lead to improved practices as they build continuity and coherence (Garet *et al*. 2001). This continuity and coherence is necessary for teachers as these help them organize their thoughts and follow the programme through.

Focusing on a small aspect in teacher development is not meant to ignore other areas but rather to be able to explore more about the aspect and all other areas that affect and /or are affected by it, such that the other areas are dealt with as they relate to the specific focus. Thus, teacher development should begin at a specific point and then radiate outwards like a bicycle wheel (the hub and spokes of a bicycle wheel). This gives teachers a chance to see the interrelatedness and complexity of things and how their actions in one area might affect the bigger whole.

Respect for teachers

It has been rightly argued that teacher development which contributes towards improved practice demonstrates respect for teachers as professionals and adult learners (Corcoran, 1995; Dembele & Schwille, 2006; Schwille & Dembele, 2007). This view holds that teachers should be given autonomy to determine what they need to learn as well as how they learn it.

Oakes & Rodgers (2007) provide a useful analogy that can be borrowed in looking at the relationship between teachers being developed and experts designing the development programmes. These scholars state that experts should look at themselves as shoe makers: no matter how good they may be, it is the one wearing the shoe who will know where it pinches. Thus, experts should allow and help teachers to be involved in their own professional development and decide and get what they want most.

In addition, effective development programmes should support teachers and/or school initiatives as this usually points to what the school or teachers want most (Corcoran, 1995; Little, 1993). Supporting such initiatives is a way of showing respect for teachers' knowledge as well as building trust. People rarely listen to those that undermine and belittle them. It is this respect and trust that would be the basis for authentic engagement with the development programme by teachers. Thus, by providing teachers with support and mediated guidance on what they are doing for themselves, experts can earn teachers' trust while at the same time helping teachers become clear as to what they want and be fully involved in their professional development. Dembele's observation concludes well on this point:

> Knowledge of demonstrably effective instructional practices is a necessary but insufficient condition for improving instructional practice. Without teachers who are able and ready to adopt and adapt such practices, successful quality improvement in education will remain an impossible dream (2005: 168).

It is important that teachers should be able and willing to adopt and adapt new practices and the only way they can do this is if they feel respected and take part in deciding which new practices they should adopt and adapt. However, the decision of the practices to adopt and adapt is dependent on the availability of a wide array of practices from which they should be able to choose from. If teachers are not given a variety of practices and there is nothing to choose from, this impresses on teachers the idea that there is only one right way of doing things, and it elevates the practice given. This makes it hard to change when experts decide to test another one.

These characteristics of effective PD are helpful in stressing the centrality of those being professionally developed and the context in which the development is taking place, in addressing how PD should be done and to a certain extent what it should cover and how.

Purpose of PD

However, these characteristics leave out the crux of the matter: the purpose. What is central to the effectiveness of professional development and is often taken for granted is the issue of what needs to be achieved? It is only when this is answered that we can deal with the follow up question of: how do we get there? A clear idea of what has to be achieved influences the means by which it has to be achieved.

Indeed, PD can be used for different purposes, such as improving teacher content and/or pedagogic knowledge, giving teachers an understanding of the government's new educational policies, modelling new practices, disseminating proven best practices, working collectively etc. (Avalos, 1998). The difficulty is to ensure that the particular form of professional development chosen is the most suitable for that purpose in that context and with those teachers. This means that forms of teacher development that have been criticised for being ineffective (Desimone *et al*, 2002; Lieberman, 1995; Schwille & Dembele, 2007) are not necessarily all ineffective as some may have been wrongly chosen to achieve a purpose for which they were not suitable. Too often, there is a misfit between the purpose and form of professional development because of the wrong identification of the form of professional development needed for that purpose. Thus, the choice of PD in a particular context is often not appropriate, especially in the case of the South African education departments since 1994 (Du Toit & Sguazzin, 2000; Onwu & Mogari, 2004).

Even though Avalos (1998) points to what accrues from various forms of professional development, it does not mean that those will automatically occur, a point which is often missed by criticisms of various PD forms. In South Africa, teachers have mainly experienced or being exposed to the more traditional forms of professional development such as workshops, conferences, short courses (Keay, 2007; Onwu & Mogari, 2004). However, as discussed above, no single form is able to deliver all that is expected. The more PD forms are available, the better the chances of reaching different targets or teacher PD needs. In addition, the availability of more forms of PD helps in deciding which form is suitable for which purpose and in making some alterations to make the chosen PD form suitable for a particular purpose. It needs to be mentioned here that, because not all PD forms can be adapted to suit any particular purpose, there is a great advantage in having many forms.

2.2 Teacher change

Teacher professional development is essentially about changing different aspects of teachers such as their attitudes, knowledge, values, beliefs, practice and many more. In reviewing the literature on teacher professional development, Desimone *et al* (2002) note that several studies find a direct relationship between certain aspects of professional development and teacher change. In particular, that the intensity and duration of PD is related to the degree of teacher change. Teacher change is therefore directly linked to the issue of professional development and deserves some discussion. People's perceptions of how teachers change affect the way they look at teachers' professional development and decide on the appropriate type of professional development. Much of the literature on teacher change revolves around the question of why innovations are not implemented by teachers as their developers anticipated. McLaughlin (1987), in Richardson, (1990) presents an historical overview of this literature, suggesting that the initial disappointment with the seemingly lack of success of various implementation experiments led to the diagnosis that teachers were resistant to change.

Richardson (1990) also reviews the literature on teacher change that provided explanations to teachers' resistance to change and she identifies two main perspectives. The first perspective considers teachers as generally less rational, conceptually simplistic and unable to use objective measures in assessing student growth. The second perspective which developed later on is more sympathetic to teachers, focusing on organizational and personal factors as hindrances to implementation of reform efforts. That is both organizational structures of schools and teachers' personal factors, such as their beliefs, values and attitudes, work together to hamper proper implementation.

Some scholars have argued that the structure of the organization more than the nature of the individual teacher determines teachers' engagement, commitment and willingness to change or learn, or lack thereof (Richardson, 1990). In this respect, Fullan (1991) argues that introducing changes without changing the structures/features that supported what the change is altering is responsible for the failure of the change effort. Dembele (2005) makes the interesting point that a focus on organizational structures as inhibitors of change have resulted in the production in teachers of a particular image of school/education and anything

that substantially deviates from this image is then resisted (Dembele, 2005). From this, one gets the impression that organizational structures help create certain images of school and education in teachers that are not easily changed. Thus, even though structures can be changed, these images will take time to change and therefore slow down or at times nullifying the process of change that the change in structures intended. What this perspective ignores is the fact that structures alone cannot explain the failure of implementation of educational changes.

Some researchers focus then on the beliefs, knowledge, attitudes, and perceptions of teachers as a group as factors that inhibit or promote their adoption (or non-adoption) of new practices. Citing Doyle & Ponder (1977), Richardson (1990: 11) supports the argument that teachers are oriented toward the concrete and practical, and are thus more or less receptive toward change on the basis of three ethically related considerations: practicality (does it allow for classroom contingencies?), situation (does it fit my classroom situation?) and cost. Guskey (2002) supports this practical orientation of teacher change, arguing that teachers' beliefs about how students learn and what they ought to learn have the greatest impact on what teachers do in the classroom and whether they change it or not.

In the end, organisational structures and teacher's personal factors should not be looked at as contradictions but rather as different facets of the same thing. One of the main issues seems to be what motivates teachers to embark on change.

Guskey (2002) developed a model of change that shades more light on teacher change, emphasising the importance of experience in change and learning per se. As the saying goes, experience is the best teacher. According to this model, significant change in teachers' attitudes and beliefs occurs primarily after they gain evidence of improvements in student learning (Guskey, 2002:383). Thus, change is above all an experientially-based learning process for teachers. Schlager & Fusco (2003: 207) arrive at the same conclusion and posit that much of what a teacher needs to know and know how to do is learned in the context of daily practice. The implications of this model is that whoever wants teachers to change has to let them experiment with and try out ideas, in addition to presenting them with changes that have been proven successful. The more successful teachers' experiences are, the more motivated they will become to continue with the programme and the more likely they are to change. Teacher change is therefore practice-based and dependent on the level of success the practice produces. This model draws partly from common-sense knowledge: if you have

failed in so many attempts at doing something, you eventually give up and conclude that you cannot do it or it is impossible.

Guskey's model of teacher change shows that behaviours change before beliefs and attitudes, and that a change in behaviours does not necessarily translate into a change in beliefs or attitudes. As the model argues, it is only when the experiences are positive that behavioural changes lead to changes in beliefs and attitudes. In simple terms, practice changes beliefs and attitudes and not vice-versa, and beliefs and attitudes do not easily change unless experience proves them wrong. Philosophers help to understand why this is the case. White (2002) states that beliefs are maps by which we steer, they help us navigate our world. Beliefs, therefore, govern the way we respond to situations. If they were to change easily, we would end up losing our bearings. White (2002) further states that our beliefs are bound by the sophistication of the conceptual networks we have so far acquired. This conceptual network is built by our day-to-day life experiences. Unless this conceptual network changes, beliefs will remain much the same. Stated differently, if our experiences disprove a particular belief, we will drop it and replace it with a new one that experiences support.

White's (2002) argument supports Guskey's model. Since beliefs guide our behaviour and reactions in and to different situations, they are prerequisites for knowing and understanding, and they therefore are difficult to change. The fear of having to lose everything we know and the unwelcome prospect of re-learning make beliefs more difficult to change. Using a wide range of literature in support of this, Dembele (2005) argues that the images and beliefs of teachers influence what they are able to learn. It is imperative then that beliefs are first analyzed to develop new visions to support teacher learning and a particular change effort. Teacher change, therefore, comes with a reassessment of beliefs and attitudes.

From this discussion, it is clear that both organizational and personal factors can constrain or permit teachers to change. Change is both an individual and organizational process. Individuals require a theoretical understanding of their organization (school) to implement change while at the same time having an understanding of the values, beliefs, knowledge and skills espoused by the change efforts in relation to their own. It is not a question of one or the other but rather the need to find an optimum mix. Thus, the change literature has moved from viewing teachers as recalcitrant and resistant to change to examining the structures of the organization and personal attributes of teachers that affect whether or not they implement

changes or reforms. In other words, teachers are no longer being considered as only one of the variables to be changed but are being recognised as the most significant change agents.

Unfortunately, this shift in the focus of the change literature has not resulted in a change in people's views on how teachers learn. Lieberman (1995) makes the interesting observation that "what everyone appears to want for students...is for some reason denied to teachers when they are learners" (p.591). People want learners to learn by doing, by discovering for themselves, by learning from each other, and so on, but, when it comes to teacher learning, they want to tell them what to do and how to do it. It seems as everyone knows what teachers lack and need save the teachers themselves. Richardson (1990) notes that teacher change, research-based or otherwise, is defined as teachers doing something that others suggest they do. Thus, the change is valorised and deemed good or appropriate, and resistance to it is viewed as bad or inappropriate, a point that Jansen (2001) had long noted in the South African educational scene.

Finally, the reforms themselves have to be questioned, something that even the recent works on change (Fullan, 1991; Levin & Fullan, 2008) fails to do even though it is more sensitive to teachers' norms and beliefs. Little wonder that, after decades of advocacy, scholars found that professional development has generally failed to improve teaching because it is usually implemented in ways that violate some of the key conditions for teacher learning (by not involving teachers themselves) (Newmann *et al*, 2000).

2.3 Educational Change

Professional development and teacher change are critical and should be contextualised within the broader notion of educational change. Educational change alters the way things are done and what is known as PD and teacher change become prerequisites for attaining the proposed goals of change. Teachers need to change their practice and everything relating to it so that they are able to take in the new practice. PD is the way to achieve that change. It is therefore necessary to look at educational change as regards teacher professional development and teacher change.

Change in education appears to be the preserve of experts or those that have been commissioned by outsiders whereas the role of teachers is to implement these changes. With

education change, professional development becomes a means of motivating teachers to strive to meet those changes (Villegas-Reimers, 2003). In this perspective, change is linear: someone formulates the change and others implement it simply and straight forwardly.

Yet, Hoban (2002) argues about the complexity of change and that is why change cannot be addressed using one perspective since doing so would consider one aspect only at the expense of the other. Formulation and implementation of change overlaps and change in one area usually requires change in other areas. For instance, to understand and implement child-centred learning, one would require changing the structures of the school to allow for learner autonomy in learning as well as changing the beliefs and attitudes of teachers about teaching and learning, and the assessment of learning. However, if the focus is just on one of these, the change is likely to fail as its multidimensionality is not fully captured, leading to its failure to produce its benefits/desired results. Often, this multidimensional nature of change is not captured, leading to most of the change failures.

It should be borne in mind, however, that "the beginning of all eventual successes is unavoidably bumpy" (Levin & Fullan, 2008: 294). The mere fact that there is a well articulated policy does not mean that its translation into practice will be smooth. There are many compromises and even misconceptions that develop, as intent is being translated into practice in different contexts, as this requires the close cooperation of all interested parties to negotiate the translation, misconceptions so as to build deeper understanding of what is being implemented. This is what makes reforms go through what Fullan (2008) calls 'the implementation dip'. Unfortunately, most reformers have a tendency to think that their approach is self-evident to any reasonable person (Levin & Fullan, 2008). This is often responsible for implementation failures, as teachers lack clear knowledge of what it is they have to know and do to implement particular educational change reforms.

Often, teachers bear the whole blame and yet policy makers and other educational stakeholders are responsible for this, as they design these changes without involving the teachers and, worse, fail to communicate continuously with teachers on what they asked them to do and implement. As Levin & Fullan (2008) argue, the nature of human interaction requires constant efforts to communicate and never more so than when some significant change from the status quo is being attempted. The type of communication being advocated is not a mono-directional bureaucratic issuing of commands/directives that are often made,

but one in which all parties involved share views and get in some sort of 'thinking together' (Senge, 1990). That is, one involving mutual exchange of ideas.

It is a truism to say that schools can be no better than the teachers and administrators who work within them (Guskey, 2002). In this sense, educational change is often about teacher change. However, current reform efforts in education ask teachers to make ambitious and complex changes (Little, 1993). South African educational reforms present an extreme case as these completely depart from what used to be. For instance, the curriculum reform change moves from rote learning to child-centred learning. Such changes require more than being shown how to implement new practices; they require teachers to reinvent their practices so that teaching and learning are interdependent, not separate functions. The success of this agenda ultimately depends on teachers' success in accomplishing the difficult tasks of learning new skills and on assuming new perspectives from visions of new practice as well as unlearning old practices and beliefs about learners and instruction which have dominated their professional lives to date (Darling-Hammond & McLaughlin, 1995).

Considering the enormous demands that some change efforts put on teachers, it is not difficult to agree with Fullan (1991; 2008) who argues that change is a highly emotional issue. To properly implement a reform, he argues, people have to understand and identify with it, personally first, otherwise the change efforts will remain superficial. He further argues that, at the early stages of change, feelings are more influential than thoughts, hence if left unattended these will paralyse the change efforts. Professional development, therefore, gives teachers a forum for expressing, sharing and addressing their emotions so that they can begin to engage with the change authentically.

Villegas-Reimers (2003), in a review of the international literature on teacher professional development, highlights the symbiotic nature of teacher professional development and educational reform, arguing that these must go hand-in-hand, for either or both of them to work. According to this view, educational reforms without teacher development or vice-versa are a recipe for disaster. Change reform efforts are like a baby that needs nurturing to survive and cannot be left to people, who have no idea of what it is, what it requires of them, and/or who are not motivated by it. Teacher professional development bridges this gap as it provides teachers with information about the changes in a way that motivates them to give it a try. Teacher development informs teachers what the changes are about, their benefits to them, their learners and the education system as a whole, how they can maximise the benefits and

minimise the problems, how they can sustain them to reap their full benefits, what they need to change and have to benefit from it, and how they can adapt them to suit their context but without losing their essence. Professional development therefore builds teachers' capacity to engage productively reform efforts and the ones to follow.

Conversely, professional development without broader changes does not work. Educational changes provide incentives for teacher changes, and are like signposts to the direction teachers need to go. Educational changes therefore make teacher development purposeful.

To sum up, the important thread running through the literature on professional development, teacher change and educational change, as discussed above, is school culture. Professional development performs a mediatory role in the transition from an old culture that has to be changed to the desired new one that is to be adopted. As the discussion has shown, this process of leaving the old and taking up the new is not easy. Actors need to access many new things such as values, beliefs and competences while the context makes the process rather overwhelming. This points to the significance of the mediatory process.

With this understanding of the role of PD in teacher change and educational change it becomes necessary to revisit the school cluster system mentioned in the introduction because this study is interested in cluster teaching or a specific form of the school cluster system. It is therefore important to present literature on school clusters to obtain an understanding of what it is and its purposes.

2.4 School Cluster System

A school cluster is traditionally understood as a grouping of schools put together to satisfy specific subject teaching, learning and assessment needs; it is an integral part of the continuous assessment (CASS) process (MDE policy, undated, p.1). This is the understanding behind the school cluster under study in Mpumalanga. The three main issues that school clusters in Mpumalanga deal with are: better teaching, learning and assessment. Better teaching refers to a clearer understanding of the subject matter as well as methodology (pedagogy), where as better learning involves issues such as external conditions, availability of resources, individual factors and a few others. Better assessment is about better tools to

measure the outcomes of the school system. Because these three aspects dominate the agenda of clusters in this province, the latter have mainly a pedagogical purpose.

This idea of school clusters is not new as many countries have used school clusters for the same purpose. For instance, in analysing the Namibian school cluster system, Aipinge (2007) states that their aim is to "improve the quality of education in Namibian schools by enabling the sharing of resources, experience and expertise among clusters and facilitating school administration by pooling resources from several schools to be shared equally" (p. ii). More than an administrative tool, school clusters are therefore an educational tool to empower teachers and enable them to work with and benefit from one another.

Internationally, clusters are mostly seen as a way to improve the use of scarce resources and upgrade education quality. They originated from an attempt to address scarcity problems faced by teachers and schools in rural areas (Giordano, 2008). However, the model is also used now in the urban areas. Clusters maintain their original pedagogical and administrative objectives, but the number of tasks they have been assigned has tended to increase over the years (Bray, 1987; Giordano, 2008).

A brief review of cluster objectives in different localities is in order as many of these are applicable to the objectives set by the MDE. The most important objectives are the pedagogical ones. This often occurs through the sharing of resources. It is argued that through clusters individual schools gain access to more facilities and staff (Bray, 1987; Ribchester & Edwards, 1998). Schools with a lack of certain resources are able to meet the educational needs which require those resources. Thus, it plays an important role in reducing inequalities between institutions and utilising scarce resources. However, Ribchester & Edwards (1998) warn that clustering is not that simple as it can involve feelings of loss of autonomy for individual schools which are expected to share their resources. It is thus a sensitive issue that needs careful negotiation because it can lead to the destruction of those very resources and staff demoralisation.

School clusters may improve education quality by representing a form of teacher development in that it provides a context within which teachers come together to understand their practices (Giordano, 2008; Jita *et al*, 2009). It creates a special community concerned with what teachers face on a daily basis; it is therefore about helping teachers timely and experientially. But, this special community of likeminded people does not just happen. It requires dedication and effort.

Clusters are also helpful in curriculum development and for understanding better some of the educational innovations introduced in schools (Bray, 1987; Giordano, 2008). Clusters provide a platform where teachers come together to discuss such innovations and improve their understanding. Finally, teachers are able to plan their lessons and assessments together thereby helping each other get a better understanding of what they are supposed to do.

Many countries make clusters a formal administrative unit in the hierarchy between districts and schools to accomplish a set of objectives (Bray, 1987). Clusters simplify the work for district officials as they work through cluster leaders (CLs) instead of dealing with individual schools. This is beneficial to poor areas where there is a shortage of district officials working with schools. CLs have delegated authority to make certain decisions on particular issues which ensures that things are done timeously as schools do not have to wait for district officials to make a decision. In addition, CLs know their schools better than district officials; hence they are more effective in making certain decisions and in planning as they are more familiar with the context (Giordano, 2008). However, this can lead to abuse by district officials, especially those who are not well qualified and those who are lazy. Delegating can be used as a scapegoat for those officials who end up not visiting and supporting their teachers. It is important to note here that the mere presence of the cluster structure does not guarantee the realisation of the set objectives (Jita *et al*, 2009). Thus, clusters are mere tools of accomplishing the set objectives and, as with all tools, they need the skills and dedication of those using them to be effective. Thus, the first pre-condition for effective school clusters is the effectiveness of those involved in working with clusters.

Another condition for effective clusters is that they constitute another structure that has to blend in with the culture of the various schools. As Sarason (1971) argues, culture is the most pervasive element of institutions, and therefore influences how particular changes are carried out. New innovations that ignore the culture of the institutions are likely to fail or be incorporated into the way things have always been done, thereby not achieving their desired effects. The change goals cannot be achieved independently of changes in other sectors. Clusters therefore can only be effective if there is already a culture of collaboration among teachers and schools or where the existing culture of schools has been altered to accommodate the values espoused by clusters – namely, the values of working together and sharing of resources.

2.5 Cluster Teaching

Cluster teaching is a form of school cluster whereby teachers and their learners of the same subject from different schools within a cluster come together to teach and learn. Teachers bring their learners to one centre mixing them up and then dividing them into classes where each teacher goes to teach a particular topic in the subject. It is a form of professional development that widens the choice of school-based PD forms available. This is a voluntary practice initiated by teachers with similar PD needs and is rarely used or promoted by education departments. By bringing teachers from different schools and opening up classrooms to each other (Mitchell & Sackney (2000) in Shain, 2001), cluster teaching enables teachers to learn from one another's strength. It aims at two different professional development and pedagogical purposes: the improvement of teacher content knowledge and the modeling of better teacher practices.

Lieberman (2009) draws upon Lortie's (1975) work to identify the constraints preventing US teachers from changing their practices. Lortie (1975) identifies three sociological norms of the teaching profession: individualism, conservatism and presentism. Individualism is perpetuated by the cellular nature of schools whereby teachers are isolated in their classrooms. Conservatism takes the form of teachers teaching as they were taught, relying on familiar routines and roles. Presentism has to do with the shortsightedness of teaching, with teachers having to meet short-term goals for immediate rewards (Lieberman, 2009: 84). These norms are not peculiar to US education only and they also work in many other education contexts, including the South African one. For most people, teaching is still a personal and private activity, usually based on how one experienced it as a learner, and the way to learn is through one's own practice. This makes it hard for teachers to open up their classrooms to colleagues.

Structures like cluster teaching, which ensures that it is enabling to have ones' teaching observed by others, intervene to break the isolation of the practice, make learning a collaborative venture by relying on the skills and expertise of all members involved. Cluster teaching can therefore facilitate change in teacher practices by observing how others do things and by being spurred to try out new ways of teaching and doing things.

Teacher development relies too often on district-initiated workshops, conferences and the like (Onwu & Mogari, 2004) and rarely consisted of observing and/or modeling good practices. This can usually be done with mentors or expert teachers which teachers observe or through professional communities working in various ways. Cluster teaching is one of these ways. While the mentor system is difficult and costly to put in place, professional communities and cluster teaching can be an important alternative (William, 2007/8).

2.6 Teacher Learning Communities

Teacher learning communities (TLCs) are social groupings of teachers who come together with the aim of enhancing learners' achievement through solving together various problems and challenges of teaching and learning by gaining new information, reconsidering previous knowledge and beliefs, and building on other colleagues' ideas and experiences (McLaughlin & Talbert, 2006; Mitchell & Sackney, 2000 (in Shain, 2001)). Thus, the concept of teacher learning communities consists of teachers' practices going through cultural changes as well as technical changes. McLaughlin & Talbert (2006) argue that cultural changes do not often come with the changes experts bring in but rather through teachers' thinking about what they need to learn and how to learn it in order to change particular situations or circumstances.

In their attempt to understand how to support teacher collaborative inquiry, Nelson & Slavit (2008) argue that reculturing can only occur if teachers feel empowered to see beyond their immediate contexts and have the confidence and ability to influence, and not just be influenced by, the various forces that shape their immediate work and development. These arguments make it clear that teachers need to be active in changing their circumstances and school culture; otherwise the changes that come from the outside will only result in structural changes. Yet, both structural and cultural changes are needed, as the ones without the others are incomplete.

Thus, central to this concept of teacher learning communities, as conceived by McLaughlin & Talbert (2006) and Mitchell & Sackney (2000), is the idea that professional development is initiated and controlled by teachers. This means that teachers are acknowledged to be not just receivers of information or implementers of teaching methods and curriculum but also translators and interpreters of subject matter, inventors of teaching strategies, and generators of knowledge, curriculum and instruction. Teacher learning communities serve interrelated

functions that ensure cultural change and contribute uniquely to teachers' knowledge base, professionalism, and ability to act on what is learnt (McLaughlin & Talbert, 2006 and Mitchell & Sackney, 2000 (in Shain, 2001)).

Teacher learning communities de-privatize practice, moving it into the public space of all the teachers in that group. Thus, when teachers talk about specific aspects of their subject, they gain confidence in their teaching, and those that they are less confident watch other colleagues teach during cluster teaching. These teachers open their classrooms for observation but also expose their vulnerabilities (Lieberman, 2009). In this sense, their practices move out of the private domain into the public domain of their community. Not being in the private domain, these can be freely discussed. Teacher learning communities provide teachers with an opportunity to emulate what teachers admire in others' practices since they are allowed to observe how it is done more effectively or note the need to change something they see someone else doing that has a negative impact on learners.

Wenger & Snyder (1999) also argue that people in communities of practice share their experiences and knowledge in free-flowing, creative ways that foster new approaches to problems. Since people do not hold back in sharing their experiences and knowledge with others, problems become arenas for new learning. This facilitates learning with ease as one works with real as opposed to hypothesized problems. As they engage with these problems members of the community do what Senge (1990) terms thinking and learning together. Considering the high costs of other forms of teacher professional development, communities of practice are an area that needs further exploration in South African education context.

Communities of practice are broad and have many functions and purposes. As Wenger & Snyder (1999) point out, they can "drive strategy, generate new lines of business, solve problems, promote the spread of best practices, develop people's professional skills and help companies recruit and retain talent" (p. 140). Not all of these are applicable to education, and teacher professional development in particular, hence the need to concentrate on the particular community of practice that is directly related to education. Teacher learning communities refers to a community of teachers who help each other develop professionally. In this knowledge-information age, teacher learning communities become even more important in helping teachers keep up with developments in their field (Wilson & Berne, 1999). Lave (1993) suggests that learning is increasingly a process of becoming a member of a sustained community of practice which motivates and helps individuals to become

knowledgeable and skillful. This is an important part of learning. She further posits that learning is neither wholly subjective nor fully encompassed in social interaction, but that the two are equally important. This means that teachers in individual classrooms are at a disadvantage in bringing about change in their practice as they lack the social dimensions of learning. It is when the individual and the social come together that meaningful learning takes place.

McLaughlin & Talbert (2006) conclude that there are three main functions of teacher learning communities within schools. They build and manage knowledge; they create shared language and standards for practice and learner outcomes; and they sustain aspects of school culture that is vital to continued, consistent norms and instructional practice (p.5). Mitchell & Sackney (2000, in Shain, 2001) summarize these as building capacity at a personal, inter-personal and organizational level. It is this capacity-building and creation of a collaborative culture that makes this form of professional development meaningful.

Thus, professional communities, and therefore cluster teaching, require certain conditions to be effective and sustainable: teacher professionalism, collaborative school culture and teachers' willingness to learn and change. It is this that the study is interested in exploring and identifying.

2.7 Theoretical Framework

The literature review has pointed to important insights to inform this research study. William (2007/8:39) quotes Fuller's argument that "it is generally easier to get people to act their way into a new way of thinking than it is to get them to think their way into a new way of acting". Harley & Wedekind (2004) and Jansen (2001) argue that most South African teachers claim to implement the Outcomes Based Education (OBE) curriculum while they are not. Because of the poor departmental training, most teachers do not know what OBE is and what it means, how they can implement it; this is why they superficially change and do what they are told, as well as 'act their way into new thinking' (to use Fuller's words).

The literature review shows that the common forms of PD, such as workshops, seminars and short courses, focus mainly on generic off-site development for all teachers. Even though they aim at changing what teachers do in classrooms, they do not address teachers' individual most pressing needs (William, 2007/8). This is why this study proposes to examine a form of

teacher learning communities, slightly adapted to the South African and Mpumulanga context. Teacher learning communities are a form of PD initiated by teachers themselves. They attempt to meet these pressing individual needs to change teachers' day-to-day classroom practices. This is why it brings together teachers with similar professional needs who feel the need to improve their classroom practices in a way that allows them to learn with and from each other with a focus on their practices. The study attempts to understand what made these Mpumalanga teachers start this programme, what kind of professional needs this programme addressed and how these teachers negotiated participation and interacted in this programme.

The literature review indicates that teacher learning communities are a form of community of practice whereby people with similar interests come together to share their practices and, in so doing, help each other to further their understanding of their profession and solve their day to day professional problems (Wenger & Snyder, 1999).

It is against this background that this study will test the arguments around the meaning, characteristics and conditions behind teacher learning communities as a guiding theroretical framework for this study. Firstly, teacher learning communities give teachers an opportunity to think about their practice, deficiencies and what they can do to improve it. Teachers decide the form and purpose of the PD they need and why they need it. This concept provides an entry point from which to study a teacher-initiated PD in the form of cluster teaching as practiced in some areas of Mpumalanga, and points to the kind of issues which have to be examined. Secondly, teacher learning communities emphasize the important role of school culture in teacher PD. A full understanding of this point is useful to examine how cluster teaching came to be operationalised in the Malelane cluster and how it sustained itself.

CHAPTER 3
RESEARCH METHODOLOGY

This chapter describes the research design and methodology that was used, who participated in the research and how the data was collected and analyzed.

3.1 Research Design

This is a qualitative study. Qualitative research is interested in exploring and describing phenomena of interest. Its samples are small; sometimes only few individuals or a single setting is used (McMillan & Schumacher 1993). More specifically, the study was conducted as a case study research within the qualitative research paradigm, on teacher-initiated professional development. As Merriam (2001:27) notes: "A qualitative case study is an intensive, holistic description and analysis of a single instance, phenomenon, or social unit". A qualitative case study is therefore tedious to conduct but provides a complete picture of the case being studied. This is why this study had to select different aspects of cluster teaching to focus on, such as its origins, purpose, nature, organization and benefits in order to provide a comprehensive understanding of cluster teaching and deduce its potential and limitations as a form of teacher professional development.

As Merriam (2001) observes, the decision to focus on qualitative case studies stems from the fact that this chosen design is interested in insights, discovery, and interpretation rather than hypothesis-testing and generalizations. It is not the aim of this study to generalize the benefits of cluster teaching as conducted in the Malelane circuit but rather to gain insights on how it is conducted and its benefits and limitations to see if it can be used as a form of teacher professional development and how.

As Cohen *et al* (2007:254) argue, "case studies strive to portray what it is like to be in a particular situation, to catch the close up reality and thick description of participants' lived experiences of, thoughts about and feelings for a situation". Thus, the study attempted to look into the 'lived experiences' of teachers, thoughts and feelings about cluster teaching. In particular, the study aimed at finding out by way of interpretative analysis, how teachers view cluster teaching and teacher professional development, and their experiences of professional development. This emphasizes the complex interplay of the context in which the case is

taking place, and the experiences, thoughts and feelings of the participants. In order to gain an understanding of cluster teaching, it was therefore decided that an exploratory case study was appropriate to provide an in-depth understanding of cluster teaching and explore its features, challenges and experiences to provide some explanations. Cases speak for themselves in a language that readers can easily understand (Cohen *et al*, 2007). Furthermore, a case study was chosen because it purports to see things from the perspective of the participants, to present how participants experience and understand the case and it has the advantage of working from participants' perspectives.

3.2 Sampling

Case studies focus on a few people or cases for detailed and rich data and provide an in-depth understanding of this particular case. According to Merriam (2001), a case can be seen as an entity around which there are boundaries. One can fence in what one wants to study and leave out other things relating to the case. In order to obtain the required information, particular settings, persons or events are deliberately selected as the case to be studied. In so doing the researcher is able to uncover the interaction of significant factors characteristic of the phenomena. The study cluster teaching of one subject was done to understand its special features before claims could be made about cluster teaching as a form of teacher professional development. Merriam (2001) further states that the boundedness of the case is determined by the limit to the number of people involved or amount of time for observation; if there is no limit then the phenomenon does not qualify as a case as it is not bounded enough. This is why the study will use purposive sampling in selecting the case and people to study.

Purposive sampling, according to Cohen *et al*, (2007:116), is often a feature of qualitative research whereby the researcher handpicks the cases to be included in the sample based on their possession of particular sought characteristics. It depends on the researcher's judgment to include and leave out certain cases. In this regard, one subject cluster, where cluster teaching has taken place for a while, was chosen. The selection of the cluster was based on a provincial education department's and my knowledge of effective cluster teaching. The selection of the specific case in that area depended on the subject that was in session at the time of the study being conducted, as cluster teaching takes place one subject at a time.

In a case study, sampling takes place at two levels: the selection of a case to study, and the selection of people within the case to participate in the study (Merriam, 2001). Purposeful

sampling was used to select the participants to the study. All teachers (7) of a particular subject participating in cluster teaching and the subject specialist of that subject in the cluster were approached for and participated in the study. Thus, the study selected 8 participants based on their special experience or knowledge of cluster teaching. Since they were the ones who experienced it, they were in a good position to explain what cluster teaching is all about and what it feels to take part in it. All participating teachers, in spite-of their years of experience in cluster teaching, were involved for the purpose of gaining an understanding of how different teachers view cluster teaching, in terms of what it does or does not do for them.

3.3 Data Collection Instruments

Merriam (2001) states that case studies do not claim any particular method of data collection or analysis. The selection of methods to use depends on the research question and purpose of the study. Maxwell (1996) emphasizes the coherence of one's research, in that research methods should be a means of answering the questions asked in the research study. The research issues and questions in this case are related to what needs to be understood in terms of the research question.

A characteristic of all forms of qualitative research is that the researcher is the primary instrument for data collection and data analysis (Merriam, 2002). Since understanding is the goal of this research, the human instrument, which is able to be immediately responsive and adaptive, would seem to be an ideal means of collecting and analyzing data. This emphasises the central role that the researcher plays in data collection and analysis as the instruments used rely heavily on the skill and orientation of the researcher.

Most of the data for this study came from interviews with the curriculum implementer (CI), cluster leader and teachers, a small focus group discussion. I also did some observations and document analysis. The study used semi-structured interviews as these are designed with some open-ended questions asked as guide in the process. However, this guide was not followed to the letter, as it is just a guide used with some flexibility. The researcher followed the line of argument presented by the participants to develop a better understanding of how they look at the various issues. This allows an understanding of individual participants' views.

Interviews are a naturally powerful way of collecting data in that they accord participants the opportunity to make explicit their perspective (Cohen *et al*, 2007). Participants can provide answers at length, explaining every detail they want the researcher to capture while at the same time enabling the researcher to ask for clarifications and probe further. Since interviews are such a powerful tool for data collection, questions to elucidate the desired information have to be thoughtfully and creatively formulated as well as informed by a conceptual framework which guides the issues being researched. This means that research issues have to focus on participants' conceptions and experiences of cluster teaching, its benefits, its challenges as well as impact as a form of professional development.

However, in interviews, participants are also prone to giving answers that they think the researcher wants to hear (McMillan & Schumacher 1993), hence they have to be used with other methods of data collection to ensure the reliability of data collected. Despite this, semi-structured interviews allow for more in-depth explorations of understandings and meanings.

It was initially intended to conduct focus group discussions (FGDs) with all teachers together to get the group's views as well as validate individual views and gain further clarity where possible. However, it was not possible to hold FGDs with all teachers as many indicated that they were too busy. As a result I only had a focus group discussion with three teachers.

Data was also collected through observation of the planning and teaching process. According to Cohen *et al* (2007: 396) "the distinctive feature of observation as a research process is that it offers an investigator the opportunity to gather 'live' data from naturally occurring social situations". This provides more information on what people do, as often what people say they do and what they actually do are not the same. It therefore provides a reality check. Observations further help researchers to discover things that participants might not freely talk about in interviews, and take a fresh look at everyday behavior which could be taken for granted or ignored (Cohen *et al*, 2007). With this understanding, observations were done on what happens during planning of cluster teaching, how teaching topics are assigned to individual teachers, what happens when one teacher is teaching, what happens after teaching, and how teachers relate to each other. These helped me to stay focused.

During data collection and in particular with the interview of the Curriculum Implementer (CI), it became clear that the cluster policy and other provincial documents on clusters had to be examined. Document analysis was conducted to gain an understanding of the origins and purposes of the school cluster system. A review of official documents provided a vital

starting point into understanding the programme. It provided comprehensive and historical information that people working with the programme might not know. It is also a quick and cheap form of information as it already exists and prevents biases by the researcher. It also gives an idea of how the programme operates and this without interrupting participants' routines (Cohen *et al*, 2007; Maxwell, 1996).

However, this has also the disadvantages of the information being incomplete and not flexible as the data is restricted to what should exist and not how things stand now. A clear view of what one is looking for is also needed to select what is relevant and irrelevant information (Cohen *et al*, 2007). Despite these shortcomings, document analysis provided a fresh outlook on school clusters and helped on what was going on in the clusters.

In all data collection spanned a period of two months, starting in early August but was interrupted by the mid August strike and it resumed in September, ending early in October. In fact the strike interrupted my interview with the CI as striking teachers came to close the district office and I had to do a second interview with the CI.

3.4 Validity and Reliability

While reliability is concerned with the accuracy of the measuring instrument or procedure, validity is concerned with the study's success at measuring what the researcher sets out to measure (Cohen *et al*, 2007). In ensuring reliability, the study used four data collection instruments to validate as well as check the extent of complementarity of these data sets. The study was conducted as an exploratory case study, which means its findings are meant to provide an understanding of this particular case (cluster teaching as a form of PD) and not be generalised unless it is to similar cases.

To further strengthen the reliability of the collected data, participants were allowed to verify and proofread transcripts and notes taken during data collection to ensure that there was no misunderstanding or misinterpretation of views between the participants and the researcher.

To maximize the validity of the data collection, a pilot study was conducted in the Ehlanzeni region where I concentrated on gaining an understanding of school clusters and interview schedules. This paves way for a more valid questionnaire for this study on cluster teaching.

3.5 Data Analysis

Qualitative data analysis involves organizing, accounting for and explaining the data, that is, making sense of the data using participants' definitions of the situation, noting patterns, themes, categories and regularities (Cohen *et al,* 2007:461). Organization and analysis of data was ongoing starting at the beginning of data collection process. This was necessary in that it enabled me capture participants' definitions of the situation and seek clarity where possible. Thus, it enabled me to capture what Cronbach (1975) cited in Merriam (2001) has termed interpretation in context.

Since descriptive exploratory case studies let the data emerge and speak for itself, a chronological narrative analysis of the data was first attempted where relationships that connect statements and events within a context were recognized and brought together in a coherent whole (Maxwell, 1996). In this, frequency of something is not an issue but the importance attached to it is. Where possible responses to informal interviews were coded into categories based on themes that were emerging from the data in relation to the research question and literature review. As Braun & Clarke (2006) argue, data are not coded in an epistemological vacuum; hence researchers cannot free themselves from their theoretical and epistemological commitments.

Then, themes that emerged from the data provided me with frames to work with and questions to ask, helping me select the literature to use in interpreting it. This inductive data analysis accorded me the opportunity to provide a more in-depth analysis of aspects of the data that formed patterns and trends and were considered important and relevant to the study. I did not use all data collected, as some were outside my area of interest. The interpretation of the data then followed to make meaning of the themes emerging, in terms of the study's theoretical framework and other relevant literature.

3.6 Limitations of the Study

The study was conducted within certain limitations and has to be read with those limitations in mind. The first limitation to this study is in terms of the available literature on teacher development, school clusters and cluster teaching. There is an overrepresentation of cases,

models, and experiences from European countries, Canada, USA, and Australia but little written and researched on African countries and South Africa in particular.

Time constraint is another limitation to this study as it was conducted within a short period of time and in conjunction with other studies. Data collection time was greatly shortened due to the fact that I had to be attending classes at the same time that I was collecting data. This led me to concentrate on one subject and since cluster teaching runs for about a week or two at a time it made data collection more cumbersome and costly.

Another limitation has to do with organising participants in the research. Initially, the research intended to have a focus group discussion with all teachers. However, I had problems bringing teachers together for a focus group discussion as most of them indicated that they were too busy; a fact that could not be denied considering that it was close to the grade 12 matric examinations. I only managed to hold focus group discussions with three teachers. This greatly undermined the data from focus group discussion as it was devoid of the views of the majority. Data collection was further hampered by the strike that took place from August. Some teachers and district officials that I was working with were threatened by union representatives and other teachers that I had to call it quits until the end of the strike.

Lastly, financial constraints exist, as the researcher had to travel to different schools where cluster meetings were taking place as well as to the schools where cluster teaching was taking place for the period of the study. It was difficult to talk to teachers during cluster teaching and therefore appointments had to be made at the times that suited them. As a result numerous trips were made between Johannesburg and Mpumalanga to meet up with these teachers.

3.7 Ethical Issues

The researcher gained permission from the Mpumalanga Department of Education Ehlanzeni region to have access to the schools. With the letters written by the District official to grant access to the schools, it was a matter of negotiating with individual teachers and making appointments. Before carrying out this study permission was sought from the University of the Witwatersrand's ethics committee (see appendix B for the ethics clearance letter and regional permission letter).

The study ensured anonymity of the participants as no information that would lead to their identity has been used in the final write up of the report. There was a dilemma however on the need to ensure total anonymity and the need to mention the name of the circuit to gain an understanding of certain issues. As such the circuit name has been revealed but the names of participants, their schools, and the subject they teach have not been disclosed to ensure anonymity and confidentiality. In addition, participation in the study was voluntary and the participants were told what the study was all about. An information letter and a consent form were given to the participants in which they had to indicate whether they would participate or not (see appendices A). All participants were assured that data collected was for the purpose of the partial fulfilment of the Master's Degree, reassuring them that the information provided would not be used for any other purpose other than the one stated.

CHAPTER 4

DATA PRESENTATION

This chapter starts with an introduction around the development and functioning of the school cluster of the case study and the profile of the participants. It then presents data using respondents' interviews and a focus group discussion, as well as from observations and documents analysed. Four main categories were identified to present findings on teachers' views and experiences of cluster teaching as a form of teacher professional development. Categories or themes that emerged from the data and are now used for the purpose of data presentation are as follows:

- PD in general, looking at how teachers learn different skills and competencies as well as different PD forms that teachers in the cluster have experienced
- Origins, purpose and nature of school clusters
- PD of cluster teaching, looking at characteristics such as its organization, purpose & targeted skills/knowledge, form of teacher learning that it supports, and reasons for teachers' interest in learning and or improving with cluster teaching
- Impact of cluster teaching on learners.

The chapter shows that participants find cluster teaching rather important for the role it plays in improving the learners' performance. It also shows the faith teachers have in cluster teaching and its value in bringing them together to solve their everyday problems as well as a means of sharing resources, knowledge, ideas and skills.

4.1 Origin and Purpose of School Clusters in Mpumalanga

School clusters in Mpumalanga are an initiative of the Japanese International Co-operation Agency (JICA)), in collaboration with the Mpumalanga Department of Education (MDE), and University of Pretoria (UP) (Interview with the CI, 20/08/10). This initiative which started in 2006 is modelled on the Japanese *jyugyo kenkyu* (lesson study) which aims at exploring the use and efficacy of a school based teacher in-service education, which focus on teacher collaboration (Jita *et al*, 2008). It was born out of an intervention in science and mathematics known as the Mpumalanga Secondary Science Initiative (MSSI), conceived by

MDE, supported financially and technically by JICA, and also academically by UP (MDE, undated). Thus, it initially begun in these two subjects and later spread to all other subject areas and is now formalised as a compulsory element of teaching in the province. Clusters maintained the original purpose of the Japanese lesson study, teacher professional development, but as the cluster policy indicates in its stipulation that assessment is an important aspect of clusters, also included assessment as its purposes.

Most of Mpumalanga is rural and comprises the former Transvaal and KaNgwane homeland. Historically, these two were under two different education departments which were racially distinct with important differences in their resources. The majority of schools are in rural areas. There is only one school in the Malelane circuit which is in the urban area with much better resources and a smaller pupil-teacher ratio. The rest are in typical rural areas with basic minimum resources. Most schools do not even have a functional laboratory for learning sciences.

Compounding this geographical disadvantage are the structural legacies of the past, a formidable legacy to reckon with in South Africa. During apartheid, race was used to define political and socio-economic rights and privileges in every sector of life, with the African population (blacks) being the least considered and most disadvantaged. In education, African education received the least priority in terms of quantity and quality of resources for teaching and learning, while whites' education topped the log (Jita *et al*, 2008). This means that huge historical disparities developed in resource endowments among schools, with those serving African learners having the least of them all. This historical legacy has yet to be rectified, and the majority of schools serving the black population are still lacking in basic resources for teaching and learning.

The schools in this study consist fully of black teachers and learners, and they do not have enough teaching and learning resources. Compounding this historical legacy is the fact that the major economic activity in the area is farming, thus having a larger population, and parents of these schools' learners, working as farm labourers. Parents speak mostly Swazi and are usually illiterate and do not speak fluent English. On the whole, their contribution towards school infrastructure and resources is limited since their economic base is rather poor, hence the schools remain poor, and with limited teaching and learning resources.

There are 15 circuits in the Ehlanzeni region, one of the southern educational regions in Mpumalanga, and some circuits have clusters for high schools. The research was conducted

in the Malelane cluster of the Ehlanzeni Region. There are eight public secondary schools in this cluster as well as one private school which work together with the public schools. Cluster teaching is done mainly with grade 12 learners, which means one grade twelve teacher per participating school. Cluster teaching is a well established programme in the Malelane cluster, though it is not done in all subject areas rigorously. In the subject where the research was conducted, not all teachers participated in cluster teaching. The researcher interacted with only seven teachers in seven schools. The better off school (in terms of resource endowment) did not participate in cluster teaching, as participation was on a voluntary basis and it declined.

The district demarcates clusters on the basis of schools' geographic proximity. These clusters are organised by subject and phase and bring together teachers with similar interests, teaching the same subject in the same phase (Interview with the CI, 20/08/10). Teachers in a cluster chose a school to meet for cluster meetings, on the basis of the availability of suitable space for such meetings (usually the school library or laboratory) and proximity to public transport routes (Interview with the cluster leader, 23/09/10). Cluster meetings take place once every month in the afternoons (after school) or at weekends (MDE, undated-policy). These clusters are run by cluster leaders which are elected on a yearly basis. The policy documents the criteria for electing cluster leaders to be strength in the subject judged by learner results for the previous year and leadership skills usually judged out of the position held at the school, which is either a senior teacher or a Head of Department (HoD) for the subject (MDE, undated).

The 'normal' cluster meetings are about preparations for moderations of continuous assessment (CASS). In these meetings, teachers discuss the tasks to give their learners and how to document them properly. The Curriculum Implementer (CI), also known as subject specialist or advisor in other provinces, shows the cluster leader how this documentation is to be done for each moderation (one per quarter/term). S/he also communicates with the cluster leader pertaining to other documents required to be in teachers' portfolios. The cluster leader then shows and demonstrates how these should be done to other teachers and makes sure that teachers have the necessary documents in their files (Interviews with the CI, 20/08/10 and with cluster leader, 23/09/10). There is also a workshop for teachers that takes place at least once a year where they are taught a particular topic determined by the province or by the district (Interview with the CI, 20/08/10). The CI explained that at the district level:

the choice of topics to discuss is done through consultation between the teacher and the CI where as at the provincial level it is the main area of provincial need, usually determined by learner results on matric.

In such cases, it is the CI or other people from the district or the province who teach these topics. Sometimes, the province (or district) solicits individuals or organizations to do that. These inductions into topics take place after school hours or over the weekend and are patronised by more than one cluster. However, with cluster teaching, teachers meet to make preparations 2 to 3 times a month, in addition to the normal monthly cluster meeting.

4.2 Profile of Participants

Table 1: Profile of Participants

Participant	Age range	Qualifications	Teaching experience
Teacher A	40+	Teaching diploma, ACE	10 years
Teacher B	20+	BEd	4 years
Teacher C	40+	ACE, BEd(Hons)	19 years
Teacher D	30+	BA	3 years
Teacher E	30+	BEd	6 years
Teacher F	50+	Teaching diploma, ACE pending	21 years
Cluster leader	40+	BEd	12 years

As the table above shows, teachers, especially the older ones, are upgrading themselves from a teaching diploma to ACE and even to a BEd honours level. According to the PTL/MSSI team (2002), historically the quality of most black teachers in schools is very poor. In the past, very few black people would succeed in mathematics and science in schools since their

education was designed to get them merely able to read and write for manual work (Jita *et al*, 2008). As a result, there are very few black teachers for these subjects who really qualify, and the majority of those teaching the subjects lack in both subject knowledge and pedagogical content knowledge. However, it is not only in mathematics and sciences that black teachers are lacking. As the PTL/MSSI team notes: "Colleges of education in the former Bantustans admitted students who obtained a pass below the standards required for acceptance into tertiary institutions and these colleges have been churning out inappropriately qualified teachers. It seems the initial training received is often very weak" (PTL/MSSI Team, 2002:4).

The table above is however only showing the profile of seven participants instead of eight as stated in the methodology section that the study had eight participants. This is so because the profile of the CI was a sensitive issue that he decided not to reveal. Since participation was voluntary and participants had the right not to answer any question they were not comfortable with, I had no other way to access the details of the CI.

4.3 Teachers' Attitudes and Experiences Regarding Professional Development

Before understanding these teachers' experiences of cluster teaching, it was felt appropriate to make them comment on their experience of professional development in general. Teachers have different needs and expectations from PD. From the CI's perspective, PD is important to teachers as it mainly helps in developing a positive attitude towards teaching, because most of them are demoralised. It also assists teachers to acquire more content and/or pedagogical knowledge and skills. Most teachers stated that PD should develop them whereas a few could not elaborate on what 'getting developed' meant more precisely. Some said that it was about gaining in the specific subject areas what they lacked while, for others, it was to change their thinking about education in general and teaching in particular. The change in thinking or what could be called 'change in a mentality' came mainly from older teachers (approaching their 50's, see table 1 on profile of teachers). This may be attributed to what education and teaching was about when they were students and when they started teaching in the apartheid era. With the demise of the apartheid and its values, a change in mentality and attitude was required for teachers to be made more professional, understand the current education system and its reforms.

Thus, PD is perceived as serving different purposes by different teachers. However, these different skills, competences and attitudes can only be learnt in different ways through different forms of PD which are appropriate for certain kinds of PD needs. The CI and teachers had different definitions of PD which could be a reflection of what they have been exposed to. Most of them defined PD in terms of activities which include workshops and short courses.

The cluster leader identified three forms of PD:

1. *School-based PD where teachers capacitate one another on issues that affect them*
2. *District-based PD where the district help through funds within clusters on issues and provide workshops to capacitate teachers*
3. *Individual-based PD where an individual registers for a course* (Interviewed on 23/09/10)

The understanding of these categories, especially the first two, reveals that PD is associated with the new 2003 appraisal policy of the Integrated Quality Management System (IQMS). Teacher F's understanding of PD is as follows:

> *HoD or immediate senior has to do a class visit to see if am doing ok in terms of lesson preparation, presentation, and following all the criteria. They have to assess areas of need and then talk about it* (Interviewed on 30/09/10).

Of importance here is that doing fine is defined in terms of doing things by the book and not necessarily in terms of what works for oneself, as the assessment is done by others and then discussed with teachers. Teachers agreed that class visits by colleagues, a stipulation in the appraisal system for teachers known as integrated quality management system (IQMS), is part and parcel of PD and is a form of school-based PD. According to teacher F, class visits usually take place in September when they are supposed to submit their PD plans to the district. However, this does not happen every year as they often just fill the forms and submit without any class visits. Sometimes, the school organises workshops led by the principal, deputy or HoDs in areas that teachers indicated they need development in. These workshops cover aspects of a new policy (such as assessment, discipline), or managerial tasks (such as record keeping where the particular aspect is photocopied and distributed to teachers to keep in their PD files. The teaching in these settings is mainly about reading to teachers with scanty explanations (Interviews with teacher B- 29/09/10 -, E - 30/09/10 - & D - 01/10/10).

The district does not often provide workshops on areas/issues which teachers included in their IQMS forms.

The CI (Interview, 17/09/10) indicated that there are also content enrichment workshops that take place every year. These are based on the analysis of learner's matric performance where teachers are provided with an item-by-item analysis of the learners' matric examination performance to identify which areas their learners struggle most with. He further stated that this is a good indication of areas in which teachers are lacking, and should therefore constitute the focus of content enrichment workshops for the year. The CI finds reading materials on such topics and gives them to the cluster leader, who is expected to distribute, read and explain them to fellow teachers. All teachers agreed that they get this exam analysis but denied that there were content enrichment workshops that follow it. The only support they get from their CI regarding the analysis report is the extra reading materials but without the CI explaining to them what the materials are talking about.

Teachers acknowledged that such workshops are the form of PD that they experience most frequently. One teacher stated that, whenever the district introduces something new, there is a new workshop to introduce teachers to that particular new aspect and encourage them to implement and adopt it (Interview with teacher C, 01/10/10).

Teachers and their cluster leader mentioned that there is at least one content workshop every year. The problems, according to them, are that workshops are scarce, of short duration (2 to 3 hours during the week or 4 to 5 hours over the weekend) and not sufficient to train teachers. In addition, facilitators do not know enough to help them understand the concepts being presented. As teacher A lamented:

> *...usually the facilitators do not understand the things they are presenting themselves, they just read for us what is written in their manual. When you try to ask them a question to explain what they are saying they just confuse you further and they also confuse themselves. Some who are honest enough tell us that they are not conversant enough with the material themselves* (Interviewed on 28/09/10).

Thus, on the whole, teachers argue that these workshops leave a lot to be desired as they are sporadic, too short and poorly presented by poorly prepared facilitators.

What is worrying, is that, even though these participating teachers upgraded themselves, they do not often do so in their teaching subject, but rather in education management and leadership and other courses, not related to teaching (Interviews with teachers, A -28/09/10-,

C -01/10/10-, D -01/10/10 - & F -30/09/10). The CI mentioned that, because there is a lack of good content courses for practicing teachers in higher institutions, teachers register for any course available to get a higher degree or certificate and this does not help them in their school work. According to the CI, teachers have learnt to accumulate credentials to go up the salary scale and this surge for credentials was not helpful in what they are doing at school. The CI complained about applied courses (such as courses in HIV/AIDS, sports management) as they end up demoralising teachers who could not use them to improve their teaching. Also, in some cases, teachers are leaving teaching to look for other jobs related to the courses they have done (Interview with the CI, 17/09/10). Thus, for the cluster leader (23/09/10), serious PD activities included:

> *anything in line with what teachers are doing in class that would help in doing that better.*

Thus, the views of the different respondents on PD and what happens in practice are slightly conflicting. However, it was agreed that the courses that teachers enrol in do not help them teach their subjects better or deal with things with little relevance to what teachers are doing in their classrooms. PD does not often add value to the work of teachers in schools and does not impact on teachers' classroom practices. Despite not answering their immediate concerns, the courses followed by teachers have other weaknesses, especially those conducted by correspondence. As teacher D (01/10/10) indicated:

> *there is an information gap in most of the courses that the teachers register for. The courses are done by correspondence which makes it more difficult to get help when you are not able to understand the reading materials, so you just do it to get the papers (certificate). Many teachers just 'claim' so that they are able to pass the exams. When you look at the work of those people doing the same course as yours but are based at the institution, you cannot identify anything, it is like you have not done anything at all.*

Thus, correspondence university courses that teachers enrol for, do not give them enough knowledge or tools to develop critical thinking. This is partly due to the fact that most teachers cannot benefit from such courses because they learn the way they always have, that is, through rote learning.

Thus, the background of the apartheid legacy of a poor teacher education and development for black teachers has to be borne in mind when assessing PD today. Teacher development is so central in the success of education reform changes in South Africa that PD activities and experiences are critical to get right. In addition, it is not only a question of providing teachers

with PD but more importantly whether the type of PD provided and its purpose/target is relevant and effective.

4.4 Characteristics of Cluster Teaching as PD

Besides the traditional forms of workshops and short courses, teachers in Malelane circuit experience another form of PD, known as cluster teaching. Cluster teaching is a practice whereby teachers from different schools bring their learners to one centre to teach them together. But what are the purposes, nature, potential and limitations of such cluster teaching to answer teachers' PD needs? Let us now turn to these different characteristics of cluster teaching: its purpose, targeted competences, organisation, form of teacher learning and advantages.

4.4.1 Purposes and skills/competencies developed through cluster teaching

All teachers interviewed indicated that cluster teaching was instituted with the aim of improving learners' results in the circuit (Interviews of A - 28/09/10, B - 29/09/10, C - 01/10/10, D - 01/10/10, E - 30/09/10, F - 30/09/10). According to them, the circuit was underperforming, as witnessed by the matric results and this before cluster teaching was introduced in 2006. Teachers decided then that they needed to do something to help their learners. Everyone interviewed mentioned, interestingly, that the underperformance of learners was the reason behind the initiation of cluster teaching. To help themselves as teachers to cope with the changes instituted in the educational system came in only as an afterthought after the researcher probed. Teacher E (Interview 30/09/10) refused initially the idea of cluster teaching as a coping technique for teachers for improving learner results. It is only later that he admitted in the discussion that it was important for teachers to produce better results.

4.4.2 Organization of cluster teaching

Discussions with teachers reveal two forms in which cluster teaching take place, one being used more often than the other. In the first form, learners are mixed together and divided into different classes for different teachers to teach them. Teachers decide on topics to teach, based on what they are good at. Teachers go to all classes to teach the topic of their choice. If

more than one teacher chose a particular topic to teach, such teachers will co-teach that topic in all the classes. The second form, though less frequent, is when learners remain in their schools and all teachers in the cluster move from one school to the other, teaching learners in the same manner as when learners are brought to one centre (Interviews with teachers A - 28/09/10, B - 29/09/10, C - 01/10/10, D - 01/10/10, E - 30/09/10, F - 30/09/10 & the cluster leader - 23/09/10).

4.4.3 Role and effectiveness of the district and the CIs

District officials responsible for organising teachers in clusters for professional development purposes are the curriculum implementers/subject specialists (CIs). These were trained in Japan in the use of lesson study which the province changed into 'clusters' to suit their context. From the inception of MSSI in 2006 the provincial education department has been sending CIs to Japan to learn about lesson study. Japanese specialists and volunteers were also stationed at the district to help them use clusters for teachers' PD. With such support, one would expect the CIs to be in the forefront of supporting teachers with cluster teaching. However, as the findings indicated, this is not the case. The CI is often absent in cluster teaching activities, even though he is aware of their existence. The cluster leader is the one who sends the cluster teaching programme to the CI and school principals. None of the teachers interviewed mentioned any specific support for the cluster programme coming from their CI. When asked about the support they receive from the district, they said that they get reading materials and workshops once a year from the district. The cluster leader also mentioned that the CI just gave reading materials on topics that teachers have requested to be developed on, expecting the cluster leader to read them and teach those teachers who requested help.

The CI (Interview, 17/09/10) did not mention any support provided to teachers during cluster teaching, apart from general school support. The CI did not say anything to the question about the type of support he provides to teachers on cluster teaching and the number of visits he made during cluster teaching sessions. The cluster leader (Interview, 23/09/10) remarked:

> *In our cluster, we don't wait for the CI because then things will never get done. CIs are very slow to respond; if you ask them something today they will come with a response in another year's time. Yet, when they come for moderations, they want you to have met all the requirements; everything should be in your portfolio, forgetting that they have not responded to your request.*

Thus, the CI does not seem to show much interest in what teachers are doing in schools as long as they meet the minimum requirements. He prefers to act as a watch dog to ensure compliance without being able to support or help teachers. There is a limited general support coming from districts, only about doing the paperwork and teachers' appraisal portfolios (Interviews with teachers B - 29/09/10, E - 30/09/10, F - 30/09/10, C - 01/10/10 & D - 01/10/10).

> *You don't get anything from CIs, even if you submitted an area to be developed. When they come to your school, which is rare, they just check your files and learners' files to see if you comply with the requirements.*

The policy on clusters stipulates a number of forms (cluster leader's report, monthly reports, reflection sheets, attendance registers) (see appendix C) that teachers and cluster leaders have to fill and submit to the CI. However, teachers complained that the CI does not serve any useful purpose for them, other than ensuring that the bureaucratic requirement is done. Such forms, especially the reflection sheets, raise teachers' hopes that they are going to get assistance in their area of need. But such assistance is not forthcoming and teachers become discouraged and demotivated. It is also interesting to note that the school cluster policy does not stipulate what CIs are responsible for in relation to clusters, leaving them without any formal obligation.

Commenting on how bad the support is from district or circuit subject specialists, teachers indicated that, even when the CI attends a cluster meeting where a topic that teachers are grappling with is discussed, he does not manage to give them any guidance:

> *CIs don't know enough about the subject content, when teachers are discussing challenging topics CIs are stuck as well and it is teachers who help them out. Even in terms of planning, sometimes they just take our plans to distribute in other clusters'.* (Interviews with teacher B, 29/09/10)

Thus, there is a dearth of district capacity at helping teachers and this, despite the availability of Japanese experts for CIs. There could be several explanations to why CIs, who received training in Japan in how to lead lesson study, are not able to translate what they have been taught into practice in the clusters. In talking to the CI about clusters, and cluster teaching in particular, it is clear that he knows about the concept of a lesson study, but this does not mean that he knows how to translate it into practice.

There could also be a problem with the efficacy of the training these CIs have received. It might also be that the training has not sunk very deeply yet, or that the knowledge is superficial, stemming from memorising without having an understanding of what they mean. There could also be an un-willingness of CIs to put what they were taught into practice because they may not be willing to change according to what they have learnt and he prefers to continue with the status quo since the change is more demanding on him professionally.

Teachers (interviews with teachers B- 29/09/10, E - 30/09/10, & F - 30/09/10, C - 01/10/10 & D - 01/10/10) pointed out that their CI:

> [he]..*does not have enough time to visit them in their individual schools and he has never visited them during cluster teaching.*

Teachers do not feel the presence of their subject advisors when they need them. This brings feelings of being neglected by the CI who is seen as indifferent to what teachers are going through with the education of learners. It also sends a wrong message to teachers, making them slack as they think nobody cares about what goes on in schools and that whatever the government says is just lip service.

This is also why clusters help; not only in keeping teachers together but most importantly in keeping them motivated as they at least have someone to talk to about professional problems. Teachers indicated that they want someone to evaluate cluster teaching so that they are sure it is making the impact they desire. They stated:

> *It would be very encouraging to see the CI during cluster teaching observing us or even teach a particular topic* (Interviews with teachers A- 28/09/10, B- 29/09/10 & D- 01/10/10).

When asked to clarify, teachers stated that this will show that the CI supports their initiative not just in a token way as it is the case now. It would also help them to ask for an evaluation of their teaching by the CIs, something which would help them in their effort to change for the better. This is because, according to them, their colleagues will not tell them about their mistakes for fear of offending them. They also stated that these evaluative comments are meant to be made by those in authority because they are supposed to know better.

Thus, CIs prefer delegating their support duties to cluster leaders who are usually drowning in school work because they are senior teachers or HoDs and have these additional duties of being a cluster leader (see appendix D for duties of a cluster leader). Apart from being overwhelmed with work, cluster leaders tend to struggle in their cluster responsibilities as

they are not trained for these. Cluster leaders should benefit from a comprehensive training in running clusters, especially because of the latter's pedagogical and PD role. However, as the findings indicate, this is not the case in this subject cluster.

The CI claimed that due to lack of funds it is not always possible for teachers to receive direct content training so cluster leaders are trained prior to assuming their duties to train themselves their fellow teachers in the cluster. However, the CI could not remember when last such training took place and on what topics (Interview with the CI, 17/09/10). The cluster leader said he did not receive training for running the cluster for the purpose of teacher learning, an important aspect of the Japanese lesson study concept. The cluster leader refuted that there had been any content training, but that the only training they receive was how to run meetings and conduct moderations for continuous assessment (CASS) which took place shortly after they were elected. The training never covered how to use clusters as a form of teacher PD but rather to use them to fill out forms for moderation and to communicate to teachers what was needed about moderations (Interview with cluster leader, 23/09/10).

4.4.4 Role and effectiveness of cluster leader

Leadership is important in the running of cluster teaching and clusters which are formal units in the administrative hierarchy between districts and schools. Cluster leaders, as intermediaries between teachers, schools and the district, have designated responsibilities to perform and, according to the MDE's policy on clusters, a number of rather cumbersome responsibilities are stipulated for cluster leaders. For instance, cluster leaders are expected to take general organizational responsibility for the cluster, do the register for each meeting, regularly check teachers' adherence to time frames and conduct quarterly moderations (MDE, undated, p. 4). The effectiveness of the work of a cluster leader or coordinator, compared to other bureaucratic positions, makes a major difference to teachers. Cluster leadership, direction and impact depend on the development or training of the person elected in the cluster leadership position. Senior teachers should also be trained in instructional leadership as it is important for clusters, especially since teachers are often exposed only to autocratic leadership.

At the level of administrative responsibilities, the cluster leader explained his work arrangements (23/09/10) which reveals that teachers decide on what they want to do and when they want to do it.

> *Teachers do not like to be bossed around, if you do that you will find yourself alone because they will not come. So from the time I was elected as a cluster leader, we agreed that we will be dividing tasks amongst ourselves and we will make our decisions together. Nobody here makes decisions without the approval of the other members. If the group wants me to take a decision as a leader, they will tell me.*

If they feel they are respected and gain something out of cluster meetings, they will continue to participate. The cluster leader has also to ensure that teachers are heard and respected in the clusters to ensure their continued participation. The cluster leader of the sample participates more as a teacher and executor of what was decided, documenting and reminding teachers of what was agreed upon, highlighting that the ultimate decisions lie with the teachers themselves. According to teacher E (30/09/10), when teachers make plans for cluster teaching, that is: decide on dates, duration, who will teach what, and where it will take place, the cluster leader writes letters and send them to school principals and their CI telling them of these arrangements. The cluster leader is also responsible for drawing up a timetable for the cluster teaching in consultation with the teachers. This is all necessary to know in advance because the school needs to plan to release learners and teachers to a particular centre for cluster teaching.

Another important task of the cluster leader is to organise teacher workshops/meetings on different topics. Teachers indicate at the beginning of the year how cluster teaching for the year should be conducted. Teachers start by asking each other to prepare lessons for particular topics in which others need help in. The cluster leader then has to organise meetings in which such topics are taught to teachers by teachers who know the topic well. According to the cluster leader (Interview, 23/09/10), this involves collecting and disseminating any specific issues about the topic(s) and related materials to be discussed, sending memos to schools, telling principals about the meetings and sending reminders to teachers. Teachers said that such meetings are important because subjects are so wide that teachers cannot cover the whole subject in school. They tend to focus on some areas at the expense of others and therefore need help to be more in control of areas in which they are lacking.

Teachers also indicated that the cluster leader is supposed to encourage them to work together and help those who are struggling so that they do not bring down the status of their cluster. In this way it can be seen that the cluster leader reminds teachers about the bigger picture so that they do not just look at their own learners and schools but consider their cluster as a whole. The cluster leader is also instrumental in encouraging teachers to help each other, even outside of cluster teaching, in what is called outsourcing. This practice consists of a teacher inviting a colleague from another school, who is good in an area that the teacher is struggling with, to teach their learners while the host teacher observes. However, the cluster leader (Interview, 23/09/10) indicated that teachers are not always willing to do that, because such activities take away their free time as they take place in the afternoon after normal school hours or over the weekends. This is what made the cluster leader negotiate with school principals to provide some refreshments and transport money to such teachers to act as an incentive.

The cluster leader of the study appears to be doing a great job but there seems to be some deep problems. The cluster leader (Interview, 23/09/10) appeared rather defensive about problems he faced in running the cluster, promoting strong values and conducting cluster teaching. The leader was quick to dismiss that they have any challenges, quoting the values espoused in the constitution even though some of these constitutional values were not of relevance to the cluster. This defensiveness could be related to the belief that talking about problems is seen as a weakness, the personal weakness of the cluster leader who was expected to assume certain responsibilities. In this case, the leader's beliefs have not been changed even though the practice in the cluster is changing since teachers are doing things differently from what they used to do.

4.4.5 Role and effectiveness of teachers

From discussions with teachers (Interviews of A - 28/09/10, B - 29/09/10, C - 01/10/10, D - 01/10/10, E- 30/09/10, F - 30/09/10 & the cluster leader - 23/09/10), it is clear that they are a vital component of successful cluster teaching and the life blood/heart of cluster teaching. To become a positive reality, cluster teaching demands serious sacrifices from teachers. Teachers have to arrange for extra classes with their learners, either very early in the morning or after school hours or over the weekend on Saturdays and Sundays. They do this to ensure they

cover as much of the curriculum as possible so that learners benefit from cluster teaching and do not lag behind their counterparts from other schools.

Teachers indicated that there are no financial benefits in participating in clusters or in cluster teaching. Besides sacrificing their free time, teachers use their own financial resources for transport to and from centres where cluster teaching is taking place. Under normal circumstances, this would have been a stumbling block for the continuation of cluster teaching but these teachers are committed to keep it going. They consider it their baby and therefore are ready to make these sacrifices for it to happen and be successful.

In addition, teachers do the planning necessary for cluster teaching, including determining the duration of the cluster teaching, number of times it will take place, where it will take place, who will teach what topic, and more importantly the dates of the meetings. This is cumbersome work, considering that it involves all the schools within a cluster, and it has to take into account the different schools' programmes. Teachers have to negotiate with each other in their schools to ensure that their cluster teaching plans do not clash with other teachers' programmes teaching the same grade. They therefore inquire about each teacher's programmes and make certain tradeoffs to ensure that the dates set for cluster teaching does not interfere with other teachers' work. In these trade-offs, teachers give up some of their time with their learners to colleagues whose programmes collide with those set for cluster teaching. This means that teachers have to find another time slot to cover what they were supposed to do during the time they gave to their colleagues, which mean working extra hours.

During cluster teaching, because teachers spend the whole day at one centre teaching, there is need to organise food for themselves so that they do not waste time looking for food at lunch time. Teachers have to contribute R30 each towards lunch and each school agrees to pay this for its teacher (Interviews with teachers A - 28/09/10, B - 29/09/10, C - 01/10/10, D - 01/10/10, E - 30/09/10, F - 30/09/10 & the cluster leader- 23/09/10). Thus, the funding issue has to be sorted out with the school by the teachers long in advance.

4.4.6 Importance of team work

Cluster teaching is meant to encourage teachers to work as a team. Since teachers teach their learners together, they are forced to know what their colleagues are good at and check their

understanding of certain issues in their subject. This becomes a reason for teachers to become involved in the affairs of fellow teachers (or their subject teaching) in the cluster. They learn to do their planning together so that, when it is time for cluster teaching, they are all on the same page. Cluster teaching begins in the second quarter and it is expected that, by then, teachers are through with their curriculum. In order to ensure that all teachers are able to finish their curriculum in time, teachers of a cluster plan together their lessons and assessments, and they more or less move at the same pace. When a teacher is lagging behind, s/he plans extra lessons and, when absent from school, s/he requests other teachers from the school as well as the cluster to cover up for him/her. In this case, there is an extended number of people who can come to the rescue of a teacher in the cluster, that is, beyond colleagues in the same school.

With cluster teaching, learners also write the same assessment tasks for CASS, which then make teachers cut on the time needed to develop these tasks and marking memoranda, as these are done together or at times these are assigned to different teachers while others concentrate on other things. This is a good coping technique, especially since district officials are mainly concerned with the number of assessment tasks that teachers have given to their learners. By having assessment tasks set at the cluster level, teachers are then assured that they will be in good books with the district as no teacher will lag behind and all schools in the cluster write the tests on the same day. Indeed, because schools write the same assessment tasks on the same day, teachers are forced to make sure that they have covered what they were supposed to cover to allow their learners to perform better in those tasks. Thus, teachers become committed and work hard to ensure they do not lag behind.

Teachers indicated that they used to panic when it was time for moderation to the point that everything else would standstill because they had to fill the necessary papers and make sure that they had all the tasks in their portfolios and learners' portfolios. This worry has now gone since they do these things together at the cluster level (Interviews with teachers A - 28/09/10, B - 29/09/10, C - 01/10/10, D - 01/10/10, E - 30/09/10, F - 30/09/10 & the cluster leader - 23/09/10). By lessening the burden of bureaucratic compliance, cluster teachers are able to concentrate on the more pressing issues they face in the classrooms.

4.4.7 Teacher learning from cluster teaching

The findings reveal that teachers draw different benefits from cluster teaching as a form of teacher-initiated PD which provides them with assistance in various aspects of their work. With cluster teaching, teaching and learning is no longer a private accumulation of knowledge and teachers are encouraged to put to use whatever they have learnt for the benefit of their learners as well as for their own benefit. This is a decisive factor in determining whether teachers have learnt something or not. This is why there is authentic teacher learning as teachers put to use and practice what they have learnt in order to impress colleagues and learners. Thus, it is argued here that, apart from the intended benefits of cluster teaching, there are also unintended benefits which were not planned but developed out of the dynamics produced within the cluster.

Assistance with subject content

By modelling different practices, cluster teaching assists teachers with the subject content. As they observe colleagues explaining things to learners in class, teachers get a new opportunity to learn the topic in a different way. As teacher A (Interview on 28/09/10) & D (Interview on 01/10/10) commented:

> *The educator who is ambitious to learn will attend the classes as others are teaching because s/he can learn better in cluster teaching because you learn just like a child only that this time you are more mature and can understand things better.*

With cluster teaching teachers also teach each other content knowledge of their teaching subjects. As the study findings indicate, teachers help each other gain a better understanding of different topics in their teaching subject. Teachers struggling in certain areas solicit the help of other teachers to learn those topics. Teachers organise their own content knowledge workshops where they teach each other different topics. A related benefit comes from discussions that teachers have prior to cluster teaching in terms of providing a richer learning environment for teachers. This includes discussions on text books which cover best some topics and aspects of these topics. This teaches teachers about the topics they deal with in their classroom, as well as how different textbooks are good at different kinds of explanations. Such discussions help teachers to identify what to concentrate on in a topic and what perspective to use when teaching.

Teacher C commented that (Interview, 01/10/10):

> *.. it benefits to work with other teachers, you learn a lot from just listening to what others are doing. Some of these teachers are very good in their subjects and cluster teaching shows you which teachers are very good in which area of the subject.*

This provides teachers with an opportunity to look for help from people they know are capable of providing it. Since the cluster results have put them on the provincial map, these teachers now provide help to those who ask for it whenever possible, and want to ensure their cluster does not go down. In an attempt to preserve their new found status, teachers are encouraged to work together.

Teacher C (Interview, 01/10/10) indicated that learners get unruly when a teacher does not have a good command of the subject content knowledge. This makes it difficult for such a teacher to manage the class. Teachers therefore are forced to quickly master their topics so that they get control over the class and gain the respect of the learners.

> *Learners respect the teacher who knows his/her stuff and are always attentive when such a teacher is teaching.*

Assistance with teaching techniques

Cluster teaching is perceived by teachers as helping to understand required classroom practices which they are supposed to do by watching others model them. One teacher explained that she lacked an understanding of what the curriculum required but she managed to learn it with and from others in a simple direct manner:

> *I am from the old school you know, I had no clue on how to teach this OBE thing but with my colleagues, in the cluster, we came up with our own way of teaching to benefit our learners. And now with these young kids that are joining us in the profession, it is much easier to see what I am supposed to do* (interview with teacher F, 30/09/10).

This points to the fact that, during cluster teaching, teachers are provided with some form of modelled practice which they observe. This enables them to understand their mistakes. Thus, not only do teachers learn about content knowledge from attending colleagues' classes but, as teacher A (Interview 28/09/10) & F (Interview 30/09/10) stated, they also see how to increase their teaching methods repertoire:

> *..educators often do have an idea of what to teach but the problem is often on methodology, on how to deliver a particular topic to learners in a way that they can understand.*

Since all this takes place in the teachers' classroom context, it takes account of difficulties associated with the context. Teachers learn how to teach a particular topic in a way that is beneficial to learners within the realities of their school context. Learners' responses to different teaching styles and methods are a powerful way to show teachers what works and what does not, and it helps them to think of their teaching techniques and practices. By observing how learners respond to different teaching as well as getting a chance to see how a classroom practice can be different, teachers compare them to what they do and can improve accordingly. By witnessing good practices in class with their learners, teachers learn how to use different teaching techniques. As teacher C indicated, one learns a lot by seeing how others do things as this provides an opportunity to see how others do things and then how to improve to reach that level and try to be the best teacher in the cluster.

Apart from learning from each other when they are teaching, teachers learn by teaching in front of an informed audience (i.e., their fellow teachers). They realize when they get through to their learners and when they do not, and can try other means of conveying their message to learners. Teacher B did not agree with the practice of letting all teachers teach during cluster teaching. He stated that:

> ..*cluster teaching should only be undertaken by good/effective teachers and leave out those who are struggling who should just be observing* (interview with teacher B, 29/09/10).

He argued that such teaching is a waste of learners' time as they do not gain anything from such teachers who usually confuse learners. For him, these teachers have much to learn and should just watch and learn from others who are better off at teaching. In a way, this teacher believes that teachers learn best through observing others teach than through teaching. When they observe others, they are in a better position to see their own and colleagues' mistakes. This will also help them thinking of the measure they need to take in rectifying certain mistakes. By observing stronger teachers who teach better than themselves, they are pointed to the direction or improvements they should make. Modelling practice shows teachers good practices and how to do certain things in a way that benefit learners.

Assistance with planning and preparation

Teachers learn to improve their planning and preparation skills through cluster teaching. As teacher D (01/10/10) indicated, with cluster teaching, learners come to realise their teachers' lack of preparedness. Learners also talk about the teaching styles of different teachers and

sometimes go as far as refusing to be taught by a teacher who, they feel, is not able to teach or communicate effectively to them. This is an interesting way through which teachers learn about areas they need to address and ask assistance from others (Interviews with teachers A- 28/09/10, B- 29/09/10, C- 01/10/10, & D- 01/10/10). Because teachers do not want to lose face in front of colleagues, they prepare better and work harder to impress learners and their colleagues. This is a form of a wake-up call for teachers who feel they have to stay abreast and learn fast because cluster teaching impresses them on the need to improve and never allow themselves to get rusty. Cluster teaching opens the classrooms of individual teachers to other members of the cluster. This has made the practice of all the teachers participating easily observable and scrutinized by other teachers.

Assistance with teamwork and sharing of resources

Cluster teaching is about ensuring that teachers work together for the benefit of all learners in the cluster. Teachers are encouraged to ask any member in their cluster to come to their school to help them with a particular topic, as the cluster leader indicated (Interview, 23/09/10):

> *...teachers no longer struggle with issues concerning teaching their subject alone; they consult with each other on anything. Besides, if one has a problem it becomes a problem of every member as we deal with it together, we do not wait for cluster meetings we just call each other.*

In sharing their problems and attempting to solve them together, teachers get an experiential learning of dealing with similar and different problems. Such shared problems are avenues for better learning, as teachers discuss them and find ways to solve them, generating important new knowledge that they can then use in other similar situations. Thus, what teachers do by solving their problems together goes beyond solving a problem to creating new knowledge for the whole group. It is a learning process whereby these teachers learn together and with each other as they try to make sense of their work.

In addition, teachers find local solutions for the problems they face in their practice. They develop their own understanding of the complexity of problems and hence the solutions needed. These solutions change also as circumstances demand, which is made possible because teachers have a better understanding of the context. In this way, teachers learn to do things in line with their context as well as learn how to overcome their contextual barriers or challenges in a way that minimises frustrations and other negative effects.

The cluster leader indicated that, because schools do not get the same text books from the government, cluster sharing also assists with sharing textbooks. Some teachers distribute their text books and discuss in the cluster which book covers best various topics. They decide on the most useful books by relying on the knowledge and skills of the expert teachers on such topics. All teachers interviewed indicated that to convince other teachers that some books are better in covering certain topics, teachers have to go in some depth through all the books they received and present a strongly justified argument. They have to highlight the main aspects of particular topics and justify how this book deals more effectively than others with these aspects (Interviews with teachers A - 28/09/10, B - 29/09/10, C - 01/10/10, D - 01/10/10, E - 30/09/10, F - 30/09/10 & the cluster leader- 23/09/10).

This sharing work is excellent preparation for teaching various topics and the discussions around textbooks which highlight the important aspects of the topics to be taught also help clarify teachers' understanding of these topics. Because the curriculum is so wide in scope and because it is impossible to teach everything about a particular topic, such discussions effectively direct teachers' attention to the important aspects to concentrate on in some topics, ensuring in the process standardized curriculum coverage. These discussions also increase the teachers' interests to learn more as they highlight the areas of a topic to look for.

As teachers witness some colleagues being more vocal or coming up with alternative ideas, teachers become competitive and try to 'beat' their colleagues with better alternatives. This can be conducive to appeal to teachers' *egos* who may be interested to share something valuable with their colleagues and be recognized as knowledgeable hard working teachers. All teachers want to be expert teachers to whom others look up for assistance. They thus compete to be these more expert teachers and become lifelong learners in the process. Thus, clusters promote a desire for continuous refinement and improvement in one's knowledge base and teaching practices. This culture might be unique to this particular cluster but members mention how and why they value it.

Assistance as professional community of practice

Cluster teaching could be constructed as a form of community of practice which helps teachers share their work concerns and make them value team work as a way to improve. Gaining confidence comes from the rigorous preparation they make prior to cluster teaching as well as in seeing others teach. Also, as teacher D (01/10/10) and the CI (17/09/10)

indicated, if teachers see others make mistakes, they are relieved to see that they are not the only ones who are struggling in some areas. This releases the pressure on teachers to be perfect, and reassures them that it is ok to make mistakes and learn from those mistakes. Teachers also gain experience in teaching and managing large classes as teacher D (01/10/10) mentioned:

> *New teachers gain experience better in cluster teaching. Experience counts a lot because you know content as you know your name which makes better control of the class. Learners know when the teacher knows what s/he is talking about which gives the teacher an upper hand in managing the class.*

Teachers learn to feel free to consult others and open their classrooms for observation, which is not easy to do as it can expose one's weaknesses. Opening classrooms to colleagues has the advantage of making teachers ask for help in advance of their teaching from colleagues in relation to areas that they do not feel comfortable. To this effect, the CI (Interview, 17/09/10) said that

> *Acknowledging weakness is something that makes people develop because they are able to seek help.*

This implies that, if teachers do not acknowledge their weaknesses and are not in a position to seek help, they will remain under the illusion that everything is fine with their work. This argument also implies that teachers will only feel the need to change if they are prepared to acknowledge their weaknesses or shortcomings. If they feel the need to change, they will be prepared to learn from a program intended to change their work. They will find ways and means to attain what they want and set time aside to do that or to get what they feel they need for an improvement in their career.

Thus, according to the participants, cluster teaching makes teachers committed to learning new teaching techniques from colleagues to make sure that they do not become embarrassed. However, this is only possible if teachers develop some trust, agree to help each other and know that they can always rely on each other and get assistance when they need it.

This understanding of the value of depending on each other transforms teachers into team players. As teachers participate in cluster teaching, their patterns of interaction change and they start to see each other as a resource basis for their improvement. The fact that cluster teaching requires teacher interdependency is a way of experiencing the value of team work. All the participants interviewed indicated that with cluster teaching, teachers share their resources, skills, experiences and expertise to improve teaching and benefit learners. Thus,

instead of depending on their individual knowledge and skills, teachers learnt the value of putting these together for the benefit of all teachers and learners in the cluster. Learners' learning moves from being an individual teacher's responsibility to that of the cluster. It is no longer the individual teacher's knowledge and skills that determine the learning experiences and results of learners, but rather the knowledge and skills of the cluster as a whole (Interviews with teachers A - 28/09/10, B - 29/09/10, C - 01/10/10, D - 01/10/10, E - 30/09/10, F - 30/09/10 & the cluster leader- 23/09/10).

Thus, cluster teaching can be compared to a community of practice whereby teachers share their experiences, knowledge and skills, helping each other cope with and improve difficult situations in their subject areas and practice. According to the cluster leader (Interview, 23/09/10), working as a team helps their cluster get around certain problems and changes the form of teacher accountability:

> *The CI gave us a project that the learners should do as one of their tasks, when we looked at it we could not understand it ourselves and then we decided we will make our own project for the learners. If we could not understand it how were we going to explain it to the learners, the CI did not even give us a marking memorandum or follow up, so we just told him we decided as a cluster to give the learners our own project and sent him the project to approve. If we were working as individuals it was going to be very difficult to come up with this decision, we would just give it to learners as it was and wait until the CI comes to ask for what the project requires and the marking memorandum. It is also difficult to justify yourself when you are alone but if you are a group it becomes much easier as one cannot say that everyone in the group is dumb.*

From this example, it is clear that teachers feel more answerable to their CIs as a group or cluster than as individuals. Thus, cluster teaching has the advantage of making teachers look more quickly for outside help. It is easier for them to pressurize their CI to provide them with particular assistance as they speak as a team. Also, instead of waiting for the CI to come and explain, teachers become proactive at times in trying to develop a better understanding for themselves and, when they cannot, they look for assistance from alternative sources. It is much easier for them to seek help from outside sources when they operate as a team as they pool the resources of their schools together to pay for the services of such outsider or to express gratitude where payment is not required (that is, in providing food and transport).

Teacher A (Interview, 28/09/10) & E (Interview, 30/09/10) indicated that there was a time when they invited a colleague from a particular higher learning institution in Mpumalanga to help them understand a particular topic and, since he was a friend, they only had to organize

for his food and transport. Teachers in the Malelane cluster ask first for help from each other as they know who is good in particular areas of the curriculum. When there are topics where nobody in the cluster is well versed, they ask their CI for help. The CI finds it difficult to dodge so many teachers' request for a specific assistance. However, the CIs do not often manage to respond appropriately as they do not know what is asked for, leaving teachers 'in limbo' (Interviews with teachers A- 28/09/10, B- 29/09/10, C- 01/10/10, D- 01/10/10, E- 30/09/10, F- 30/09/10, & the cluster leader- 23/09/10).

To sum up, cluster teaching is a productive way to induct new teachers as well as improve older teachers' professional practices in their school contexts and environments. The principle of '*we are stronger and better as a team than as individuals*' makes them pool different expertise and assistance to help each other improve for the benefit of the group and all the learners.

4.4.8 Impact of cluster teaching on learners

All participants agreed that cluster teaching benefits learners and improves their learning experiences, because of improvements in teacher's knowledge but also by exposing them to better teaching practices from different teachers. Teacher D said (01/10/10);

> *The way I teach is not the same as teacher x, teachers teach differently and so are learners when learning. When I am teaching I might not reach out to all my learners but if many teachers teach together there is a very big likelihood that most learners are going to get something out of it.*

This alludes to the fact that teachers are more comfortable with some teaching techniques and style that do not always take into consideration the learners' learning styles. Some teachers involve some learners more than others or prefer to use teaching aids; others merely preach while teaching, or use illustrations and deeper explanations which captivate and interest learners. By being exposed to different teachers teaching the same topic, learners learn different ways and perspectives regarding learning. This gives them an opportunity to find and use the way or perspective they find easiest to understand. Teacher A welcomes the impact for learners being taught by unfamiliar teachers (Interview, 28/09/10):

> *Learners are more attentive when taught by a teacher they are not familiar with. Learners are very clever, they know their teachers in and out, when they misbehave in a particular way they know exactly how their teacher will react, but if they have*

someone they are not familiar with they get afraid to pull their silly tricks and they want to show this teacher that they understand what s/he is saying.

Teacher A further explains that this happens if and when teachers are interested in the subject they teach and manage to win the respect from learners, who tend to respect more teachers they do not know well.

Another benefit mentioned by all teachers was that learners are exposed to some of the best teachers of the cluster in a specific topic. Cluster teaching takes place half-way through the year when teachers are supposedly finished with the syllabus. This means that learners are able to recap on what they were taught with teachers who are more experts in the topic and able to fill gaps left with some curriculum topics. Learners with struggling teachers benefit more as they are exposed to better teachers. Cluster teaching can therefore uplift the standards of some schools with struggling teachers by benefiting from teachers from other schools who are better in some curriculum topics. To use the words of teacher B (Interview, 29/09/10), *cluster teaching covers up for struggling teachers and uplifts the whole circuit.*

Another benefit should be better learner performance. The CI and most teachers interviewed claim that cluster teaching greatly improved learner matric results and the CI (17/09/10) provided the learner matric performance for the last two years (see table 2 below). Teacher D (Interview, 01/10/10) explained that, when he started teaching in the school three years ago, he was struggling to teach according to learning outcomes, especially since he was not South Africa- trained. The history pass rate of his school was very poor, below 50%, and he did not know how to improve learners' performance in examinations. This cluster teaching gave him and his learners the opportunities to learn better, with their pass rate beginning to improve steadily up to 100% now. He uses the cluster opportunities by asking his learners to prepare questions on topics they struggle with and he then asks the other teachers during cluster meetings to assist. Other teachers also praise cluster teaching and their impact on their learners' performance.

It is fruitful, it is helping our learners and we can see the improvements of [matric] results since it started. We are now one of the best clusters not just in Ehlanzeni but the province as a whole, that's a very big improvement.

Thus, teachers and the CI agreed that the efforts associated with cluster teaching led to benefits for the district's schools. Malelane was never ranked among the best performing clusters in the province and yet it is now amongst the best three, as shown in Table 2 below.

Table 2: Top 3 best performing Circuits in Mpumalanga

2008		2009		
POSITION IN THE REGION	**PASS %**	**POSITION IN THE REGION**	**PASS %**	**POSITION IN THE PROVINCE**
3 Lydenburg	79.15	3 Malelane	77.31	3
2 Malelane	80.32	2 Lydenburg	85.54	2
1 Nelspruit	88.72	1 Nelspruit	87.07	1

Adapted from MDE's Achievement Awards

However, it is difficult to establish a tight causal relationship between learners' improved performance and cluster teaching but the latter is likely to have contributed to such an improvement. Other factors, such as learner endowments, parental support, availability of role models and many others, also contributed.

Teacher B differed from his colleagues in his views about the impact of cluster teaching on learners' improved performance. According to him, cluster teaching cannot have such dramatic impact as it occurs only four times a year and other factors also contributed to learners' improvements.

> *Teachers put in a lot of effort throughout the year, besides being involved in cluster teaching, to ensure that learners get a better learning experience. It is not fair to trash all that effort and pick only one out of the rest as the real deal* (Interviews with teacher B, 29/09/10).

According to him, these improved results come from the many efforts put by teachers since grade 10. However, during a focus group discussion with 3 other teachers, this point was heavily contested, as these teachers argued that most efforts by teachers with learners of previous grades are in vain compared to grade 12 learners who are more serious.

> *The grade 12 learners are scared of exams which makes them concentrate more on their studies and make the most of the efforts teachers are put in. it is also towards the end of the year that these learners learnt a lot of things as they know that the exams are around the corner.*

Thus, teachers argued that cluster teaching covers all grade twelve topics and give learners a chance to recapitulate on what they have missed or not understood. This is why they believe that cluster teaching played the biggest role in these improvements.

From this presentation, it is clear that teachers value cluster teaching. They consider it as a reason for the improvement of their subject content and pedagogical knowledge as well as learners' performance on matric examinations. They also look at it as a confidence booster which equips them with the skills, values and knowledge to teach their learners. The fact that cluster teaching makes teachers put together their resources and expertise to solve daily problems makes it even more valuable in that it reduces teacher burnout and enhances professional commitment and accountability. But, the next chapter focuses on a deeper analysis and interpretation of the data.

CHAPTER 5
DISCUSSION AND INTERPRETATION OF FINDINGS

This chapter analyses the data presented in the previous chapter. It seeks to identify patterns and trends as well as interpret the findings of the study in terms of the theoretical framework and research questions. In the process, it draws on other appropriate literature in terms of what makes PD effective and teacher learning.

It argues that cluster teaching is a form of teacher-initiated professional development that addresses teachers' individual professional needs when they show a certain level of professionalism and that it is particularly suitable for changing classroom practice as it provides these teachers with practical content and pedagogical knowledge that they can emulate in their classrooms.

5.1 Nature and Form of Teacher Professional Development

Reviewing researchers' and practitioners' conceptualisation of PD, Schlager & Fusco (2003) argue that PD is viewed as a career-long, context-specific continuous endeavour that is guided by standards and experts, grounded in teacher's own work, focussed on student learning, and tailored to the teacher's stage of career development. With this conceptualisation, PD includes anything that meets this description. It is more than a series of workshops and includes anything that enhances teachers' knowledge, practices and learning of learners. The findings of this study confirmed Keay's (2007) observation that most teachers define PD in terms of what they have experienced from experts and not what they have been exposed to in terms of collegial sharing in schools. This is why some teachers did not perceive cluster teaching as a means of developing themselves because it did not fit their definition of PD, which is something they received from the knowledgeable experts. Since cluster teaching was initiated and conducted by teachers themselves, most teachers did not consider it as formal PD, even though they saw the difference it made in improving their practices.

The findings indicate that teachers felt that fellow teachers are not in the best position to tell their mistakes because they do not occupy such authoritative position. One therefore gets the feeling that these teachers think that it is only those in authority who know better what to do

to improve teachers' practices. This is in line with Lieberman's (1995) observation in terms of teacher learning that it is the experts who knows better what teachers lack, what they need to do and how to do it to improve their practice. Richardson (1990) concurs noting that change, research-based or otherwise, is defined in this perspective as teachers doing something that others are suggesting they do. This understanding paints a gloomy picture of the change process, which fortunately, current literature tries to dispel by arguing and showing that teachers too matter, they are the ones experiencing these changes therefore they should have a greater say in the content and process (Lieberman, 1995; Newmann, et al, 2000). However, the participant teachers also believe that, even though colleagues do not know everything, it does not mean that they cannot help. In fact, they do help them in those areas that they know and they explore together the areas they do not know. As the findings revealed, teachers help each other understand various topics in their subjects and the way to teach those topics. However, this means that teachers look at each other as potential resources for further development but do not take this to be a form of teacher PD.

A number of South African research studies (Harley & Wedekind, 2004; Fleisch, 2007; Hoadley, 2007) revealed that most teachers in the country do not have the necessary subject and pedagogical content knowledge to teach their subjects. It is therefore imperative that teachers receive some PD that addresses this to enable them to teach effectively their learners. It is also important to note that not all forms of PD can address these specific needs as different forms of PD suit different purposes. To assist teachers learn more subject content and pedagogical knowledge requires the PD form best suited for such purposes.

It is common sense knowledge that teachers need to learn what to teach before they to learn how to teach (William, 2007). The findings of the study indicate that teachers received little PD for better subject content and/or pedagogical knowledge. The form of PD most experienced by these teachers, workshops, is conducted in a way that does not lead to authentic learning for subject or pedagogical knowledge. Workshops take place once in a year and for a short period of time, in the afternoon or on Saturdays. The topics covered in these workshops are driven and their topics selected by provincial officials or district officials with little bearing on the needs of different teachers in their classrooms. It is usually a generic form of teaching offered to all teachers, irrespective of their development priorities.

Recent literature on teacher development has criticised such PD for not impacting on teacher' practices and not assisting teachers on what has to be done in their classrooms (Garet, et al,

2001; Desimone, et al, 2002; Villegas-Reimers, 2003; Schwille & Dembele, 2007). As Desimone *et al*. (2002) argue, it is difficult for teachers to learn meaningfully when the PD experiences that they are exposed to are fragmented, incoherent and removed from their classroom contexts. Besides, teachers are isolated in their classrooms with no one to help them change their practices and/or apply what they have learnt. Workshops in the Malelane circuit were not perceived by the participants as the best way of helping teachers learn subject content and pedagogical knowledge.

The study also found that teachers enrol for different courses in higher institutions to improve themselves. However, most of these courses are not in their subject areas and therefore do not assist them to teach more effectively their subjects. As the findings point out, because there is a dearth of courses at higher institutions that offer teachers the relevant subject content knowledge, teachers end up enrolling for any PD course available. Thus, after completing these courses, teachers continue to struggle to teach their subjects. This form of PD is therefore wasteful as far as the school and learners are concerned as, after gaining further education, teachers should be able to understand and teach better. Hence, a PD policy should ensure that there are forms of PD which are targeted effectively at specific subject knowledge and at pedagogical content knowledge.

Schlager & Fusco (2003) argue that in-service teacher training tends to pull professionals away from their practice, emphasising information about practice rather than on how to put that knowledge into practice. PD should be a process of learning and it should focus on how to put knowledge into practice. It is only by engaging in work (practice) and talking about it from inside the practice that one can learn to be a more competent practitioner. Teachers need knowledge of the subject and pedagogical knowledge and ideally learn the one with the other. However, most departmental forms of PD (training, workshops) that the participants were exposed to do not succeed in imparting these two to enable them to teach their learners more confidently and effectively.

5.2 Clustering and Teacher Development

Cluster teaching has emerged interestingly to fill this gap. In teacher-initiated cluster teaching, teachers learn not only content knowledge but also how to teach that knowledge. Even though teachers do not learn more than what they teach (because they learn the things

they will teach), the content and pedagogical knowledge they gain in cluster teaching helps them to learn. This knowledge is important as it lays a foundation upon which teachers can build on in further learning. It helps them understand the basics they need to know to explore their topics further. In cluster teaching, teachers do not also just wait for the one workshop per term or year to gain better understanding of something generic. Teachers decided to help each other by pooling together and sharing their individual endowments. Since teachers are good in different topics in their teaching subject, they help each other to understand more topics as well as experience different ways of teaching it in a classroom. In this way, all teachers learn what the others know best.

This gives a good foundation upon which teachers can build on. Besides, cluster teaching made teachers interested in learning more in a number of ways. The findings indicate that there is competition amongst teachers to be the best teacher in the cluster and this makes them work hard at doing something with their knowledge in order to impress their colleagues as well as learners. This competition is healthy in that it helps teachers to keep abreast with the developments in their field. In all forms of learning, competition can be a good driving force for advancement, as it can give teachers the zeal to learn and boost morale.

Besides competition amongst teachers, learners also are there to develop teachers' desire to learn more. As the findings indicate, learners act as quality assurance in that they can compare and contrast different teachers' teaching. They tend to misbehave in class or refuse to be taught by someone they feel is not well versed in the material being taught. They ask difficult questions from teachers they feel do not know their stuff to expose their lack of knowledge. Such things make teachers to be careful and more prepared as well as learn fast so they do not get embarrassed in front of learners. In that sense, cluster teaching promotes a desire for continuous improvement in one's knowledge base and teaching practices, and can constitute a form of what Darling-Hammond calls professional accountability. Professional accountability promotes the quality of individual knowledge and competences in the profession as a whole by ensuring teachers work and improve together (Darling-Hammond, 1989). Cluster teaching is therefore an effective form of teachers' professional development because it provides the necessary environment and incentives for teachers to learn better practices and content knowledge.

Cluster teaching is an effective way of inducting new teachers into their profession, as the findings demonstrated. Lave (1993) in her argument for learning through apprenticeship or in a community of practice states that newcomers enter a community of practice and develop an image of practitioners and practices that serve as ideals to guide their development. Not only does it show them how things are done in their environment but more importantly how to teach particular topics in specific teaching contexts. It helps new teachers see how others teach effectively in contexts of scarcity, as they observe others being successful in these contexts by using the little resources they have and observe the reaction of learners to different methods of instructions. This accords them a rare opportunity to work out their own teaching style to suit that particular teaching context. It also provides them with a testing ground for their styles/techniques as they are observed by other teachers who provide feedback whenever asked. This is an example of learning as a social activity that occurs primarily in the context of work (Schlager & Fusco, 2003).

The study findings also indicate that there is limited support for teacher professional development coming from the CI and the district who tend to emphasise paperwork. As Schlager & Fusco (2003) argue, few professional development providers have the resources and capacity to provide support on an on-going basis. They tend to concentrate on those things that they have capacity for and usually prefer to control than support. The curriculum review committee report (2000) reveals the lack of a paradigm shift by education managers at all levels of the system which focuses on control and impacts negatively on teacher training. Education managers tend to operate more as monitoring agents and not as partners in education facilitating teacher improvements. They put a lot of emphasis on doing things by the book and on paperwork and appraise teachers on how well they organise their portfolios and not so much on how effectively they teach. This matches the findings of Taylor (2008) about the way South African teachers spend their time. He reports that teachers spend less time on teaching and more on completing forms in the name of bureaucratic compliance and with little, if any, bearing to teaching and learning. He argues that onerous paperwork serves to distract teachers from their core task of teaching, thus undermining curriculum completion and leading to teacher burnout. This means that many teachers do not have the energy to look for alternative (beyond the district) means to develop.

Thus, cluster teaching, as developed by teachers, seems to manage to turn the initial bureaucratic requirement of working on common assessment (through clustering) into an

opportunity of making teachers share and learn from each other, resulting in teachers taking charge of their own PD, even if they do not call this PD.

5.3 Cluster Teaching and Teacher Learning

There are several aspects of teacher learning linked to cluster teaching. Teachers learn different skills and competencies required in their work, and more specifically the subject and pedagogical content knowledge. But what is the kind of teacher learning all about? Cluster teaching is associated with teacher learning because it is about opening up to others, receiving as well as providing help to colleagues when necessary. It is gradual, takes place amongst the mundane activities in teachers' professional life. It is also learning-centred in that teachers adjust, based on learners' reaction to their instruction. But, what makes teachers learn and improve with cluster teaching?

In cluster teaching, teachers are able to learn more of the content as well as how to teach it more effectively by observing each other's teaching. Cluster teaching makes the observation of teaching much easier as it is about helping others by making one's teaching more 'public'. Teachers are free to observe and be observed. As Mitchell & Sackney (2000, in Shain, 2001) argue, opening up one's classroom to colleagues is the hardest thing to do because it lays bare one's vulnerabilities but it is a major step towards learning as it enables one to seek help with greater ease. In clusters, teachers learn to feel free to ask more experienced teachers to observe them and identify their vulnerabilities as they know they will help them improve. It helps teachers to learn different techniques and use whatever they can from others' teaching in their own teaching.

Teachers learn from one another, sometimes unconsciously and they develop some sort of trust towards each other and accept to help each other. They learn to rely on each other, not to get embarrassed when being observed, knowing that they will get assistance. Observing the teaching of expert teachers during cluster teaching becomes a valuable learning experience for the observing teachers as they experience and learn from the modelling of good practices by expert teachers. This sort of learning is gradual but not instant. Cluster teaching takes place 2 to 4 times each year, making learning iterative as there is a chance of more than once. As William (2007:183) argues, improvement of teacher practices and learner achievements matters to teachers for social and personal reasons. Lave (1993) argues that the mere process of continually participating in something makes one learn and change one's identity.

Teachers learn from others but also when they themselves are teaching. In the case of cluster teaching, they have the advantage of an informed audience (fellow teachers) that they can turn to for help. As McLaughlin & Talbert (2006) argue, instructional improvement that benefits all learners is mainly made in the context of teaching because this is where teachers get to know what and how to change in a concrete manner. Teaching is the place where evidence is provided about the areas which teachers need to change, as learners indicate what they do not understand about specific aspects of what was taught.

In arguing about educational change, Fullan (1991) mentions that the specific needs of a change process are often not clear at the beginning. It is only when implementation is underway that practitioners realise their needs. It is while practicing that teachers begin to realise their dearth of skills and capabilities and see what needs to be changed or learnt. Too often, PD which takes place outside of classroom practice provides teachers with a false clarity and/or understanding which has not been tested by themselves in their practice.

In following this argument, authentic teacher learning that improves classroom practice takes place when teachers practice it because it is only then that they are able to pinpoint precisely the areas they need to change. It is only after they identify their weaknesses that change can occur and propel people to take the action that will improve their practices. It is also in practicing and teaching the change that teachers see the results, contributing to whether they will continue or abandon it. If the results in the classroom are positive, teachers are more likely to continue with the new practice, but, if they are negative, they will abandon it. This is what Lave (1996) refers to when she asserts that teaching is learning in practice. Thus, cluster teaching as a form of PD has the benefit of seeing the reaction of learners to a different or new form of instruction. Teachers are then encouraged to adjust and adopt better practices to ensure their learners learn more effectively. Practice, therefore, facilitates teachers' learning, making cluster teaching an important site of teacher learning.

However, this argument assumes that teachers can recognise the reactions of learners when they are taught differently and that teachers will then change their practices. With cluster teaching, the consequences of not changing one's ineffective practices and continuing what was done before are dire for teachers. They can remain indifferent to the competition amongst colleagues who want to be seen as best teacher in the cluster, but it is hard to ignore the negative responses of learners who have been exposed to better teaching or a teacher with greater subject knowledge. Thus, cluster teaching indirectly forces teachers to change and

ensure that they are continuously learning, updating their knowledge base, skills and competencies.

Another advantage of cluster teaching is that teachers learn in the course of teaching practice. They are able to confront their development needs by teaching. As Guskey (2002) mentions, the best way for teachers to practice the change is to learn it practically. He argues that change of practice precedes change of beliefs and the more teachers practice something, the more likely their beliefs will change, especially when they see concrete improvements in their classrooms. This study's findings confirm that teachers in the cluster find it easier to open up to others, admit their challenges and weaknesses to get help from others.

However, some beliefs are harder to change than others and do not change quickly, as exemplified by the cluster leader who demonstrated some defensiveness when talking about the problems in the cluster, indicating that it was a sensitive issue to him to acknowledge some personal failure in leading the cluster. This is because a teacher opening up does not often include admitting the existence of personal problems but letting others see ones' vulnerabilities and problems for those who are at the helm is not easy. White (2002) argues that it is possible for one to have deep beliefs without being aware of them and that these can direct one's actions. It is also possible to hold conflicting beliefs especially since beliefs are only replaced if one makes a conscious attempt to evaluate them and the evidence supporting such beliefs against one's experiences (White, 2002). However, it will take more than a conscious attempt on the part of the cluster leader to identify and change such contradictory beliefs.

As the findings showed, the participant teachers do not always know the values they espouse, especially when they cited constitutional values that are not applicable in their context. One can only speculate on the beliefs teachers have about their learners, especially as they cannot articulate their beliefs and values for cluster teaching, something they have initiated and nurtured. Similarly, despite the fact that they are getting better help from fellow teachers than from their CI, teachers continue to rely more on the CI than their fellow teachers. They still expect more from their CI because s/he is in a higher position and is assumed to be more knowledgeable than their fellow teachers.

It is therefore important to organise training, which addresses certain deeper beliefs and values. Teachers have to be helped to acknowledge the underlying beliefs behind their actions so that they can make a deliberate effort to change them. Such a stance will help teachers to

be conscious of the interplay of their beliefs with their actions and their relationship with their colleagues and learners. For example, it will be easier then to realize how their beliefs about learners' potential affect the way they deal with them, especially those they consider as failures. Such beliefs need to be addressed because they influence how teachers interact with different learners.

Thus, the learning process of teachers is complex: it is not just about changing their classroom practice but also about changing some of the underlying beliefs that guide teachers' classroom practices. Since beliefs are maps by which we steer (White, 2002), leaving these beliefs intact will make any changes achieved temporary and about to fade away. However, sustained and consistent changed practices, supported by successes, have more chance of breaking down the impervious deeper beliefs and build new ones that support and sustain the new practices. Since cluster teaching is taking place two to four times a year, it has the potential to break such deeper beliefs and facilitate the development of new ones. Cluster teaching makes teachers consider more deliberately their actions and this provides an opportunity to reveal and then address underlying beliefs. However, it does not address directly deeper beliefs which can be addressed if the training imparts some theoretical understanding about the impact that some beliefs can have on teachers' work.

Experiential learning is a powerful way of improving teachers' classroom practice as it makes teachers deal with real rather than hypothesised problems. It points to areas of change, provides teachers with direct learning experiences and shows them the results of their learning and changed practices.

5.4 Cluster Teaching and the New Curriculum

The study showed that cluster teaching gave teachers the confidence to teach their subjects and in the process facilitated a better understanding of the NCS requirements. Teachers lacked confidence to teach their subjects under the new curriculum as they did not understand what this curriculum was all about and what it expected them to do. Harley & Wedekind (2004) argue that, even though the majority of black teachers supported the new curriculum, they did not understand the concept OBE and what was meant to teach to outcomes, especially since they did not have strong subject knowledge. Even white teachers who said

they were already doing OBE before 1998 were not really doing OBE and did not know what it entailed (Harley & Wedekind, 2004).

As Little (1993) and McLaughlin & Talbert (2006) argue, the changes demanded by such curriculum often require teachers to make more than a technical change in their practice, and go through a fundamental re-thinking or re-conceptualization of learning itself. OBE is based on a different concept of learning which forces teachers to stop doing what they used to do. They needed to understand this new concept of learning before they could learn what and how to teach the new curriculum. Thus, all teachers were bound to struggle with this OBE as it was based on a different learning concept of the new curriculum but even more so for those teachers with poor confidence in their subject and pedagogical knowledge. Cluster teaching provides teachers with friendly colleagues to turn to when experiencing difficulties with the new curriculum, especially when it came to understanding what was behind the curriculum and develop new teaching practices.

By doing their planning and assessment together, teachers not only comply with bureaucratic requirements but also improve their understanding of the new curriculum and what they ought to do. This is because teachers had to convince others of the value of what they said and for that, they needed to understand deeply a particular aspect of the topic or assessment task to be included; they had to present evidence or reasons behind what they suggested and therefore had to think carefully through their suggestions. Schlager & Fusco (2003:217) quotes Elmore (2000) who argues that organizations that improve know how to create and nurture agreement on what is worth achieving and they initiate internal processes by which people progressively learn how to do what they need to do to achieve the intended goals. By planning together, teachers define what was worth achieving in their teaching and they found means of achieving it. By working together as practitioners, teachers gain access to each other's expertise and social capital and use it to improve their own practice.

5.5 Cluster Teaching as a Professional Learning Community

Fuller & Brown (1975), in De Feiter, et al. (1995:51), argue that professional learning communities are mainly 'concerns'-driven and address particular concerns that exist within the group. Thus, the prerequisite to a learning community is a common concern or need amongst members. Teachers who feel the need for change and improvement of their practices

will be candidates for forming a learning community in which they will invest time and energy to achieve change or improvement (de Feiter, et al. 1995). One needs to feel a desire to change if a programme intended to change the status quo is to succeed. In the same way, teachers are likely to learn from others if they feel the need to learn and find ways and means to attain what they want to do, set aside time to do that.

In this case study, cluster teaching was introduced as a response to teachers feeling the need to improve learners' results and cope better with the new curriculum (OBE). This made them come together and use their various knowledge and expertise to reach their goal of better learners' achievements. McLaughlin & Talbert (2006: 1) argue in the context of American educational change that the "pressures to change and improve schools spotlight teachers' capability to provide the kind of classroom experiences needed to improve all students' learning and achievement". Such changes require more than what teachers are able to offer, and are beyond the knowledge levels of many teachers (Little, 1993). In South Africa, the changes required by the post apartheid curriculum are completely new and beyond what teachers know, making them need to learn about the new curriculum and improve their learners' achievements. Some teachers in Mpumalanga decided to look for ways in which they could learn this beyond district assistance and cluster teaching became one way of addressing this.

This study's findings demonstrate that teachers can learn to solve their problems together. Instead of a teacher struggling alone with a problem, s/he takes it to the group where every member thinks of suggestions to solve it. This reduces individual teachers' stress as it is shared with other members who provide comfort and assistance to the struggling teacher. These problems become avenues for learning new ways as teachers discuss them and find ways to solve them in a non-stressful way and in the process generate new knowledge that can be used by many teachers facing similar challenges in similar situations. According to McLaughlin & Talbert (2006), one of the main functions of a learning community is to produce and develop knowledge. Citing Brown & Duguid (2000), they argue that such communities give information a 'social life' through discussions and reflection which in turn produce new understandings. Teachers who solve their problems together go beyond solving a problem and create new knowledge for the whole group. Teachers learn together and with each other as they try to make sense of different aspects of their work. Thus, learning opportunities in teacher learning communities are not always formal but include also the informal and mundane activities that teachers are involved in.

Professional learning communities have certain values and culture associated with them. Cluster teaching, as an example of a professional learning community, demonstrated some of these values and culture: it inculcated a commitment of helping one other to understand various aspects of teachers' work in the cluster. As the findings indicate, teachers teach to each other different topics if necessary; they discuss different textbooks and those who do not know much about a particular topic are given opportunity to learn more about it. Direct teaching of topics by experts to fellow teachers is part and parcel of cluster teaching practice. Thus, teachers develop and share practices, knowledge, skills and values that address the needs of teachers in their cluster (Schlager & Fusco, 2003). In this sense, teachers assume new roles of mentors, learners, moderators etc. which is the most important characteristic of teacher learning communities.

Thus, this cluster teaching provides an opportunity for a sense of collegiality to develop amongst teachers as they had to work at more or less the same pace and help each other when faced with problems. This supports Little's (2001) argument that resources for the improvement of teaching are best created through teacher interaction, or teachers working with teaching and learning issues in the context of their daily practices. In this case study, teachers receive help from each other and learn important skills of how to teach better and how to communicate more effectively with their learners in their classroom context as well as finish covering the curriculum on time. Lave & Wenger (1991), cited in Lieberman (2008), argue that, wherever people engage for substantial periods of time in doing things interdependently, learning becomes part of their participation in changing practices. As teachers participate in cluster teaching, their patterns of interaction change and they trust and see one other as a resource basis for improvement.

This cluster teaching is also a form of teacher networking to develop teachers' knowledge, skills and attitudes (Reitzug, 2002). Networks are collections of educators from different schools who meet regularly to discuss and share practices, more or less like with cluster teaching. Teachers share their experiences, knowledge and skills and help each other cope with difficult situations in their subject areas and classrooms. Learning communities create networks that teachers rely on when faced with challenges they cannot solve alone (McLaughlin & Talbert, 2006). Moreover, they produce new ideas and act as intellectual stimulants for improvement over and above the support provided by the department. Networks also help teachers share and create new knowledge, or add value to existing

knowledge rather than just sharing existing knowledge. As Katz, *et al* (2009) assert, networks are an operational construct for educational provision and a vehicle for change.

It is known that culture plays an important role in PD. These new patterns of teacher interaction create new ways of doing things. To rely on teacher learning communities helps teachers particularly effectively because the context in which teaching happens is similar. Learning communities create a specific culture that its members understand and that is essential for the sustenance of that learning community (Mitchell & Sackney, 2000 in Shain, 2001; McLaughlin & Talbert, 2006). As Schlager & Fusco (2003) indicate, teachers' activities are usually guided by local values and norms of practice, which can prove formidable barriers to effective professional development. Creating a new culture of trust and commitment to change is therefore an important aspect of this effective form of PD which develops new values and norms of practice that facilitate and promote better learning in teachers. This does not mean that old values and norms were all bad but that some of them hindered teacher learning. It is therefore important to change the aspects of the culture that do not promote continuous learning and the desire to improve practices, and adopt a new more professional culture.

In the case of the Malelane cluster, this new culture was not intentional but a by-product of teachers' desire to ensure their learners were at the same level and could benefit from different teachers and teaching. This learning community also helped teachers to assess their local values and norms of practice consciously and unconsciously and created a new culture which was more receptive to new forms of learning. As Blumenfeld *et al*. (2000), cited in Schlager & Fusco (2003) argue, instructional reform requires a school culture that supports professionalism and provides opportunities for sharing, taking risks and reflecting about various pedagogies and learner learning. Without a change in culture, it is difficult for authentic learning to take place. McLaughlin & Talbert (2006) argue that teachers in learning communities are more likely to innovate because they reflect and rethink continually their practice, based on how their learners performed. Learners' performance in the cluster is a good indicator of where learners are and what teachers need to concentrate on. The findings indicated that, when learners from a particular school underperform, the whole cluster turns its attention to that school, thinking about and examining the problem and attempting to resolve it. The cluster finds ways of helping to enhance learners' learning and performance, thereby enhancing teachers' capability for change and improvement. This is one of the most

interesting and promising advantages of cluster teaching, especially if there are many learners with struggling teachers.

It is clear that teacher learning communities play a direct and catalytic role in teacher learning and in PD. Learning communities provide teachers with motivation, direction, accountability and commitment for continuous learning and improvement. They also provide them with colleagues who give them new ideas, as well as encouragement and feedback on their performance, an essential part of teacher learning and PD, according to Schlager & Fusco (2003: 206). Teacher learning communities also enable teachers to develop professional norms and practices that facilitate the development of a culture of collegiality, another important part of effective teacher development. In their study of school clusters in Mpumalanga, Jita *et al* (2009) argue that the real value of clusters is in the collaboration and collegiality it promotes amongst teachers. Clusters provide an arena within which teachers begin to know each other, build some trust and create a non-threatening environment where they feel free to share their experiences as equals. With this trust, teachers start to open up to one another and engage in productive and collegial discussions about their work.

Thus, on the whole, this cluster teaching has some characteristics and features of teacher learning communities. These teachers are driven by the similar concern to improve their practices and define together what is relevant to examine and improve within their context and practices, especially since departmental assistance is not strong.

5.6 Cluster Teaching and Learners' Learning

The findings show that cluster teaching was initiated to improve learner performance. This means that student learning was at the centre or the raison d'être of cluster teaching. William (2007:184) argues that "to successfully raise student achievement, we must improve the quality of the teachers working in our schools - more specifically, we must work to improve the teachers we already have". Thus, teachers' improvement is central to improving learners' achievement. Teacher professional development ideally should target better learners' learning. So, this cluster teaching was motivated by this, a link which is identified in the literature as one of the main characteristics of effective PD. Villegas-Reimers (2003) argues that teacher development that does not lead to improvements in the performance of learners is a waste of time because teachers are only effectively developed if their practices change and

lead to an improvement in learners' performance. Schlager and Fusco (2003) also contend that the objective of a PD is to develop, implement, and share practices, knowledge, and values that address the needs of learners, implying that PD should be done to enhance learners' learning.

This cluster teaching, which was initiated with the aim of improving learner performance, provided learners with varied learning experiences from different teachers which also enriched their learning experiences. This is because different teachers use different teaching styles and methods and therefore had more chance of meeting the different learning needs/preferences of learners. As table 2 shows, learners' performance in the Malelane cluster on national examinations has improved to the extent that the cluster is now on the provincial map. It is however difficult to establish a direct link between this improvement and cluster teaching but participants in the study believe cluster teaching contributed a lot to this and also that the improvements manifest at the time when cluster teaching is fully fledged.

Another aspect of this cluster teaching which enriched learners' learning experiences was the sharing of resources by the teachers in the cluster. Schools in deep rural areas face great challenges with their poor infrastructure and lack of resources (Bray, 1987; Giordano, 2008). Compounding this geographical disadvantage are the legacies of the past, which are a formidable factor to reckon with in South African education. Black people's education continues today to suffer from the apartheid legacy in terms of quantity and quality of resources, while white people's education continues to be much better off (Jita et al., 2008). Most schools in former rural homelands (such as Mpumalanga) lack most basic resources for teaching and learning (Yamauchi, 2010, in press). Yamauchi argues that learners' achievement in South Africa is directly tied to resource availability in schools, which is why the pattern of school and learner performance is the same as in the past, except for the small number of historically disadvantaged learners who have moved to the well resourced former model C schools.

Cluster teaching could be seen as an attempt to counter this legacy by pooling resources from all schools in the cluster for the benefit of learners. It pooled teachers as well as material resources available to all schools. When learners are brought together at a centre where cluster teaching takes place, they use the facilities of that school, as well as ensure that the necessary resources (from different schools) are brought to that particular centre. As a result, the learning experiences of learners in that cluster are well enhanced.

Finally, learners also benefit from the best practices of the best teachers as well as eventually from improved practices of their own teachers who learnt new ways of teaching. Research (Garet, et al, 2001; Desimone, et al, 2002; Villegas-Reimers, 2003; McLaughlin & Talbert, 2006; Schwille & Dembele, 2007; Lieberman, 2009) shows that learner learning is enhanced by teacher learning that is continuous, collaborative, focusing on instruction and learner learning in specific contexts. Thus, when teachers learn experientially with other teachers in the context of daily practice and about what they have decided needs to change; they develop new skills and competencies and are likely to reproduce what they have learnt to meet their learners' needs. This translates often into enhanced learners' learning. The study findings demonstrate that cluster teaching means that teachers take more responsibility for the success of all learners in that cluster, and will assist particularly the teachers who struggle so that their learners do not lag behind. McLaughlin & Talbert (2006) argue that learners are known to do better academically when teachers take collective responsibility for the success of all learners.

Thus, although cluster teaching was targeted at improving learners' performance, it did more than live up to its initial purpose. Beyond the learners, it also benefitted teachers and covered up for the lack of district support and resources to schools.

5.7 Conditions for Effective Clustering and Teacher Development

Clusters provide a space in which teacher development can take place, because the development is specific and not generic and targeted at similar subject and phase teachers. However, to improve teachers' classroom practice, clusters and cluster teaching have to meet certain conditions or requirements.

The sections above mentioned some important requirements to communities of practice, such as a common concern driven by all members, a common purpose and target as well as a members' way of interacting and relating. In addition, there are another three important dispositions or factors that are key to the dynamics and 'life world' of effective clusters: commitment, trust and collegiality, and leadership.

5.7.1 Commitment

One way in which cluster teaching facilitates the improvement of teachers' practice is by increasing their commitment and sense of community (Lewis, *et al*, 2006, cited in Lieberman, 2009:84). Teachers' commitment to their profession is an important factor for effective PD as teachers need to be committed to their profession and interested in improving. The task of a professional learning community is therefore to develop a commitment to the profession in its members. By renewing and strengthening teachers' commitment to their profession, they were able to interact and share their ideas, skills, values, dispositions, and knowledge with others, leading eventually to practice improvements.

The study's findings show that commitment is both a prerequisite for, and a result of, improvement. Cluster teaching meant for teachers hard work and reliance on each other to improve learners' achievements. Teachers conducted many extra classes to cover fully the curriculum and find time for cluster teaching. This commitment and sense of urgency in doing well their job in turn enhanced their commitment to their profession. As teachers strove to improve and did improve, they developed further commitment to their work.

5.7.2 Trust and Collegiality

Teaching is often marred by individualism norms, as it is regarded as a personal and private activity. It is also known for its conservatism, as it continues in the way it was done in the previous generation (Lieberman, 2009). Due to this, teachers rarely have opportunities to see each other teach or discuss their practices. This does not allow them to learn from each other. To break these norms that characterise the teaching profession, teachers need to have new or other dispositions and values, and especially to learn to trust fellow teachers. Merely grouping teachers together in clusters will not break the ice of mistrust amongst teachers. As Nelson & Slavit (2008: 102) argue that to realize "the potential of teacher learning through collaborative processes is to establish norms and dispositions that allow for trust building and risk-taking".

Teachers have to make a deliberate choice to allow others see what they are doing as well as observe and analyse what others are doing. The first step in this is to let go of the curtains which hide one's practice so that trust can begin to develop. As teachers observe each other's mistakes, they realize that they are not the only ones who are not perfect teachers. This will

level the playing field and make them work with one another as they know they will not be turned into a laughing stock. Once the trust develops, it is possible to deprivatize teaching practices and openly discuss them. The study findings have shown that teachers have learnt to trust one another to the extent that they ask assistance from one another. This development of common understandings and expectations promote in turn coherent practices within and across grade levels.

Clusters can make teachers learn with and from one another as well as provide assistance as needs arise. Working as a group puts some pressure on individuals to work hard as the group's success depends on the members' contributions. Teachers feel a responsibility to the group, bringing in the process an element of professional accountability, because teachers are accountable to themselves, their colleagues and the profession. Team work requires teacher interdependency and collective responsibility for learners' learning and success. Successful teaching and learning is no longer an individual responsibility but a group one. As teachers attempt to improve the learning experiences and performance of their learners, they also learn to depend more and more on each other.

5.7.3 Leadership

Leadership in a cluster system was not considered an issue in the initial conception of this study. However, during data collection, it became clear that cluster leadership and the way leadership was exercised played a major role. The findings point to the important role of the cluster leadership in brokering for the cluster and encouraging teachers to work together and trust one other. The leader needs to guide and quality assures but should not dominate and rather encourage teachers to voice out their ideas and solutions to problems and challenges. This is because teachers will do things they understand. They will account poorly for things that have been imposed on them but will account better for what they have initiated as they understand why they do what they do.

In looking at school-based teacher development, de Feiter et al (1995) argues that it is teachers together with those in leadership who define the PD needs, develop a plan to meet those needs, and identify the strategies and learning activities. The decisions are not made by the leadership alone but by all in the cluster. As mentioned by Loucks-Horsley et al. (1987), teacher development is most successful in schools where:

- "Staff members have a common, coherent set of goals and objectives that they helped formulate, reflecting high expectations of themselves and their students.
- Administrations exercise strong leadership by promoting a norm of collegiality, minimizing status differences between their staff and themselves, promoting informal communication, and reducing their own need to use formal controls to achieve co-ordination". (in de Feiter, et al., 1995, pg 53)

Even though Loucks-Horsley *et al* (1987), in de Feiter, et al. (1995), argue this in the context of school-based teacher development, it applies to cluster-based teacher development. Cluster leaders who make decisions unilaterally risk not having many followers since teachers will not have ownership over those decisions. But, by letting teachers participate in deciding what should happen and how, cluster leaders ensure the group's control over the cluster and its decisions and activities. This prevents unequal power relations from developing, which could prevent teachers from participating fully in their own PD. The cluster leader has to present her/himself at the same level as other teachers so as not to threaten or make them feel they are not all colleagues. If a sense of collective is created, teachers will feel keen to participate and make contributions for their benefit as well as for the group's benefit.

Katz *et al* (2009) argue that, when power relationships prevent people from working together, the latter will experience very rapidly the advantages and pitfalls of such relationships. If cluster leaders make decisions unilaterally, teachers will assume that their input is not required. If leaders dictate or order them around or act as watchdogs who come in when things are wrong, teachers will link them to the autocratic leaders of the past and will not develop the collegiality and commitment needed. Thus, the historical mistrust of authority in education requires a new view of what leaders are about in a group such as the cluster. For this, leaders need to behave as colleagues who are seen as equals to facilitate cluster teaching as a form of collective teacher development. By participating as colleagues and not as the authority and presenting themselves as trustworthy and genuine, cluster leaders will leverage teacher commitment, a sense of collegiality as well as the development of new ideas and practices amongst cluster teachers.

Even though there is limited support from the district, the participating teachers have managed to organise themselves to work together and use each other as a learning resource. School clusters can therefore be a catalyst for cluster teaching as, according to the participating teachers, it helped them not only to cope with the new education system but also

to teach their learners with confidence and improve the performance of their school cluster on national examinations. However, cluster teaching need to be accompanied by certain conditions and attitudes. Teachers have to possess dedication, efforts, and easy reliance on each other to ensure that cluster teaching is profitable to learners and teachers alike. Cluster teaching can be an effective form of PD that helps teachers change their practice in context, and responds to specific and well-identified teachers' needs.

CHAPTER 6
CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

This study reveals that cluster teaching is a form of PD well suited for learning subject content and pedagogic knowledge and which is consistent with a constructivist perspective of learning. Teachers learn by discovering for themselves what works and what does not; they learn by doing and constructing from what they know and learnt from others. This supports Lieberman's (1995) suggestion that teacher learning experiences should involve the creation of opportunities for teachers to engage as learners, building pedagogical and disciplinary knowledge and co-constructing and enacting new visions of practice in context. It is what teachers do that matters when changing practice and not on what others do for or to teachers. Thus, teachers should learn in the same way as is suggested for children, by discovering and constructing for themselves.

The study indicates that effective cluster teaching provides teachers with various learning opportunities ranging from formal teacher discussions, sharing planning processes and resources, observations of others' teaching and reflecting on their own teaching to informal opportunities such as solving problems together and getting feedback from learners on their teaching. When teachers learn in this way they begin to value their ideas based on evidence they witness in their classrooms. This works to bring back to teachers their self-worth and boost their morale and confidence. This is essential if teachers are to continue finding ways and means of improving and this explains why cluster teaching remains sustainable, despite the problems teachers face in running it.

The study also reveals that cluster teaching benefits all learners in the cluster, irrespective of the level of ability of their teachers. The cluster, as opposed to individual teachers, takes responsibility for all learners' learning. The accountability channels changed in that teachers account to each other and the cluster accounts to learners, district and community. Whatever teachers do, they do for the cluster and all learners in that cluster.

Research on characteristics for effective teacher professional development emphasizes that PD should be grounded in the work teachers do in support of learners' learning goals (Nelson

& Slavit, 2008). This study shows that cluster teaching was instituted to improve the learning experiences of learners and their results, as well as instil a hard working attitude in teachers to ensure that their learners improve, be it in planning or teaching, putting in extra efforts in their work and extra classes with learners or colleagues' learners. Thus, this form of PD uses learners' learning and achievements for motivating and promoting teacher learning, that is, teacher learning is directed by and for the better learning and/or performance of learners.

It is also clear from this study that cluster teaching impacts greatly on the working relations amongst schools in the cluster, particularly among teachers teaching the same subject in different schools of the cluster. Cluster teaching helps teachers to build professional relationships with other teachers from other schools such that they are able to share their ideas, skills, knowledge, resources, and problems. Thus a new culture is created in which teachers look at each other as resources for development. With cluster teaching, as the study has demonstrated, teachers have learnt to work together for the benefit of their students and themselves.

Another important lesson revealed by the study is that teachers can drive, initiate and sustain change processes in their practice. Cluster teaching was introduced by teachers and has been sustained for about five years now. As it evolves, teachers begin to see its values and impacts in not only achieving what they wanted, namely improving the performance of their learners but also in their own professional development and improved professionalism.

However, cluster teaching requires certain pre-conditions to be effective. It needs to be directed by a strong common purpose and target as well as certain dynamics in the relationships between members. The 'life world' of effective clusters depends also on the commitment, trust and collegiality, and leadership of the clusters.

Finally, there are inherent limitations to the knowledge and changes that cluster community can generate or impact on. For example, given the poor background (in terms of various teachers' knowledge) of these teachers, there is no doubt that layers of support are required over and above what they get from their cluster community as the knowledge disseminated in the cluster is limited to the one existing among the teachers in the cluster. Outside support, especially from those with more complex knowledge levels, would provide these teachers with different new ideas on their subjects and teaching practices that would be beyond their existing experiences. They could then weave these ideas into their own practice and model it for each other in cluster teaching. Effective external support can maximise teachers' learning

in their clusters and give new meaning to cluster teaching. This external support can help teachers direct their attention to what they did not know and yet needed to focus on; it could help change the way they think of or frame their practice; it could broaden the critical lens needed to reflect on aspects of teachers' work. As Wilson & Berne (1999) argue, it is important for PD to look beyond the classroom to help teachers change their roles, norms, values, beliefs and attitudes.

Thus, cluster teaching has potential and limitations. It can provide teachers with knowledge and skills to work with their context but it may not be sufficient to provide teachers with opportunities for influencing the contexts and/or for impacting the forces that originate outside their immediate work environment. As Nelson & Slavit (2008) argue, PD should include external support to broaden teachers' understanding of what these forces and dimensions are as well as how to impact on them in a way that benefits teachers and learners. With such external support, teachers will reflect on their teaching together with new vigour and depth.

6.2 Recommendations

From the discussions above, it is clear that clusters form an important platform for PD as long as they possess certain features. But, above this, there is a need for outside support to teachers involved in cluster teaching or for cluster teaching to interact and incorporate other forms of PD. Institutions of higher learning could provide short courses on subject content knowledge for practicing teachers that would help further teachers' theoretical understandings of their teaching subjects and techniques to gain more knowledge than what they teach and experience within the walls of their classrooms.

The district should play a more visible and supportive role to cluster teaching. The CI should show moral support to teachers by availing him/herself every now and then, and especially what they are asked for support. It is important for the CI to add something to cluster teaching, and in this case to incorporate elements of the lesson study model they have learnt in Japan as this will help improve the PD element of cluster teaching. For instance, the CI could introduce and guide discussions of teachers' teaching with colleagues who are observing.

Finally, there is need for further research study on the cluster system to see the efficacy of, and conditions required in, cluster teaching in other environments. For example, what is it like in urban areas where there are greater resources for PD opportunities than in rural areas? Also, all rural areas are not the same even though they have some similar characteristics.

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APPENDICES

APPENDIX A: INTERVIEW GUIDES AND CONSENT FORMS

INTERVIEW GUIDE FOR PARTICIPATING TEACHERS (Semi-structured interviews)

Participants' profile

1. What is your:
   A) Academic/professional qualifications

   B) Age range: 20+ 30+ 40+ 50+

2. How many years of teaching experience do you have?

Professional Development

1. How do you define professional development (PD)
2. What activities fall within your definition of PD?
3. What are your expectations of a PD?

Cluster Teaching

1. What is cluster teaching all about?
2. How did it come about and why?
3. How do you become part of it? What are the criteria for membership?
4. Why did you join it? What are your expectations of it?
5. How long has the programme been running? Why has it survived for such a period? What do you think keeps it going? How important is this programme/ what do you think are the importance of this programme?
6. How is cluster teaching planned and coordinated?
7. What have been your experiences so far with cluster teaching? How has it affected your practice? What have you and your learners benefited from cluster teaching?
8. What are the conditions necessary for the proper running of cluster teaching?
9. What challenges do you face in conducting cluster teaching and how do you address them?
10. Does cluster teaching fit your definition of PD, How?
11. If you were to sell this idea of cluster teaching what would you tell people?

INTERVIEW GUIDE FOR PARTICIPATING SUBJECT ADVISOR (Semi-structured interviews)

Professional development

1. How do you define professional development (PD)
2. What activities fall within your definition of PD?
3. What are your expectations of a PD?
4. What professional growth opportunities are being provided for teachers in your circuit or cluster?
5. How much time is set aside for PD
6. What are the incentives for teachers to participate in PD and to improve their practice?
7. How do the incentives affect teachers in different grade levels, or career stages?
8. What and how much responsibility for PD is placed on the teacher/what roles do teachers and you (subject advisor) play in PD?

Cluster teaching

1. Are you aware of a programme called cluster teaching taking place in some of your schools?
2. If yes, what is it all about?
3. The programme has been running for some time, have you seen any benefits of it so far? What are they? What is your analysis of this programme?
4. What is/has been your role in the running of this programme?
5. Does the programme have any potential of helping you as the subject advisor help your teachers' learn and improve their practice? Can you explain how?

FOCUS GROUP DISCUSSION GUIDE WITH PARTICIPATING TEACHERS

What has been the most important strength/benefit of cluster teaching to teachers?

How would cluster teaching be improved to ensure the learning of teachers?

How do teachers source out support and from who?

What factors would hinder cluster teaching as a form of professional development for teachers?

PARTICIPANT'S INFORMATION SHEET

I am Rachel Memory Mnyamula Phiri, a Master of Education student at the University of Witwatersrand, doing a research on teacher professional development titled: **Cluster Teaching as an arena for Continuing Teacher Professional Development. A Case Study.**

My focus is on teachers who are taking part in cluster teaching in their school clusters and slightly on the subject advisors of these clusters. The study aims at exploring cluster teaching as a form of teacher professional development, and capturing perceptions of participating teachers on the contribution of cluster teaching to improved classroom practice. This exercise is scheduled for August and September 2010.

To do this, I will conduct semi- structured interviews where I will be asking questions to the participants. If the information given in these interviews is insufficient a follow up interview will be conducted in which probing questions will be asked. I will also undertake observations of what happens during cluster meetings particularly cluster teaching planning and what happens during cluster teaching itself. Finally, I will also conduct focus group discussions with participating teachers where their cluster teaching experiences will be discussed.

You are kindly invited to participate in this study. Participation in this study is entirely voluntary and choosing not to participate will have no consequences whatsoever. Should you choose to participate you may withdraw from the study at any time. You have a right not to answer any question that is put to you.

The research is purely for academic purposes, which means the data collected will not be used for any other purpose other than the stated. Confidentiality and anonymity will be guaranteed in that names of participants or their schools will not be used in the writing of the research report.

Any information gathered will be kept private and confidential and will be destroyed upon completion of the project.

Thank you in advance.

Yours truly

Rachel M. Mnyamula Phiri

PARTICIPANT'S CONSENT FORM

I am Rachel Phiri, a Master of Education student at the University of Witwatersrand. I am doing a research on teacher development titled: "C*luster teaching as an arena for continuing teacher professional development*. *A case study*," where I am looking at cluster teaching as a form of teacher development. I kindly request your participation in this study. This study is purely for academic purposes only.

This letter serves to inform you that participation in this research is voluntary and that you have agreed to the following:

I have received, read and understood the information sheet regarding this study and I am aware that all the information I give will be processed anonymously in this study and its final report.

I understand and agree that the data collected for this study can be processed by the student and destroyed once the study is completed and passed.

I may at any stage without prejudice withdraw my consent and participation from this study and have had sufficient opportunity to ask questions and declare that I am participating voluntarily in this study.

For details you can contact me, Rachel M. M. Phiri on 0820831188, phirirachel@yahoo.com.

If you agree to participate in this study please sign on the space below

PARTICIPANT'S (Initials only)

SIGNATURE: _____DATE:_____

RESEARCHER'S

SIGNATURE _____DATE_____

Thank you,

Rachel M.M. Phiri

APPENDIX B: ETHICS CLEARANCE AND REGIONAL PERMISSION LETTER

Wits School of Education

27 St Andrews Road, Parktown, Johannesburg, 2193 • Private Bag 3, Wits 2050, South Africa

Tel: +27 11 717-3007 • Fax: +27 11 717-3009 • E-mail: enquiries@educ.wits.ac.za • Website: www.wits.ac.za

Student number: 399659

Protocol number: 2010ECE132**C**

29 October 2010

Ms. Rachel Phiri

P O Box 19

MALELANE

1320

Dear MS. Phiri

Application for Ethics Clearance: Master of Education

I have a pleasure in advising you that the Ethics Committee in Education of the Faculty of Humanities, acting on behalf of the Senate has agreed to approve your application for ethics clearance submitted for your proposal entitled:

Finding a niche: Cluster teaching as an arena for continuing teacher professional

The Protocol Number above should be submitted to the Graduate Studies in Education

Committee upon submission of your final research report.

Yours sincerely

M Mabeta

Matsie Mabeta
Wits School of Education

Cc Supervisor: Ms. F. De Clercq (via email)

education
DEPARTMENT: EDUCATION
MPUMALANGA PROVINCE

EHLANZENI REGION

Private Bag X 1014
KANYAMAZANE 1214
Government Building

Tel: 013 766 0302
Fax: 013 794 1772

Litiko leTemfundvo Umnyango weFundo Department van Onderwys Umnyango leTemfundvo

Enq: Ms L Phiri
Tel: 013 766 0681

TO: MS RACHEL M M PHIRI

FROM: THE REGIONAL DIRECTOR
MR MJ LUSHABA

DATE: 13 AUGUST 2010

SUBJECT: PERMISSION TO CONDUCT RESEARCH

1. This serves to acknowledge receipt of your letter dated 01 August 2010.

2. Permission is hereby granted to you to conduct research in schools at Malalane Circuit.

3. Our office is available for any assistance towards your studies, where we possibly can.

4. It would be of assistance to us if the results of the study could be shared with us in an effort to improve the quality of education in our Region.

5. We wish you success in your studies.

Kind regards

REGIONAL DIRECTOR
MR MJ LUSHABA

13/08/10.
DATE

MPUMALANGA PROVINCE
PRIVATE BAG X 1014
KANYAMAZANE 1214
2010 -08- 13
OFFICE OF THE
REGIONAL DIRECTOR
DEPT. OF EDUCATION

APPENDIX C: FORMS TO BE FILLED IN CLUSTER MEETINGS

1. **CLUSTER MEETINGS**

1.1	1.2	1.3	1.4	1.5	1.6	1.7
Date of meeting:	Purpose of meeting:	Number of teachers attended:	Achievements:	Challenges:	Suggested solutions:	Feed-back from the previous month's solutions:

2. OTHER SUBJECT-RELATED ACTIVITIES / INTERVENTION:

3.1	3.2	3.3	3.4	3.5	3.6
Date(s) of activity	Specify activity	Achievements:	Challenges:	Suggested solutions:	Feed-back from the previous month's solutions:

3. CLUSTER LEADER'S REPORT

SUBJECT _____ DATE _____
NAME OF CLUSTER LEADER _____
CONTACT (TEL W) _____
FAX _____ CELL _____
DATE OF MEETING _____ VENUE _____
ATTENDANCE REGISTER ATTACHED YES/ NO _____
ABSENTEES WERE/ WERE NOT ACCOUNTED FOR _____

REPORT ON MEETING

_____ of _____ group members attended the meeting.
THE AGENDA was / was not circulated to team members timeously.

TIME OF MEETING The meeting did / did not start on time.

The main focus of today's meeting was _____

Of particular benefit to all concerned was _____

Of real concern to group members is _____

Something we would like to do differently next time is _____

Additional support is/is not needed. Details: _____

Something we would like to share is

Date of next meeting _____ venue_____

Signed_____
date_____

4. REFLECTION SHEET FOR CLUSTER SUBJECT GROUPS

What I enjoyed about today's programme was _____

What did not work for me today was _____

What might have worked better had it been done differently _____

What I benefited from or learnt today was _____

I believe I am making/ not making progress with my CASS Portfolio, mainly because

I still need support in the area of _____

The Cluster Group is providing me with _____

5. ATTENDANCE REGISTER FOR CLUSTER MEETINGS

REGION: _____ NAME OF CLUSTER: _____

SUBJECT: _____ DATE OF MEETING: _____

CLUSTER LEADER: _____ CONTACT DETAILS: _____

NAME	SCHOOL	FAX NO	TEL NO	E-MAIL ADDRESS	SIGNATURE

6. CLUSTER MODERATION

2.1	2.2	2.3	2.4	2.2	2.6	2.7
Date of moderation	Schools moderated	No. of teacher / learners' files moderated	Achievements:	Challenges:	Suggested solutions:	Feed-back from the previous month's solutions:

APPENDIX D: DUTIES OF A CLUSTER LEADER

It is important that the cluster leader sees her/his role as that of a facilitator and arranges that the workload is shared amongst members of the group. In general, duties include the following:

1 Take general, organisational responsibility for the cluster group and organise the first meeting.
2 See that everyone in the group has details for contacting everyone else (refer to Annexure E).
3 Plan dates, venues and meeting times for all of the meetings of the year, at the very first cluster meeting in early January.
4 Plan or delegate the planning of each meeting well in advance.
5 Set up an "each-one-contact-one" system of reminders, to operate a week before the next meeting.
6 See that an agenda – based on the model given – is drawn up ahead of the next meeting.
7 Encourage members of the group to bring all relevant documents to each meeting.
8 Prepare a register for each meeting and keep the signed registers in a file, available for Regional monitoring.
9 Provide or delegate the provision of Reflection Sheets for each meeting. Read a summary of these at the beginning of the next meeting, dealing honestly but constructively with issues mentioned.
10 Set up a "buddy system" whereby an absent member is contacted that same day and given an update of what happened at the meeting. Reasons for absence may be ascertained.
11 Check on a regular basis that time frames (pace setters/ interim deadlines) are being adhered to.
12 Warn group members of approaching deadlines.
13 Keep in touch with developments at National/Provincial/Regional levels and inform group members of relevant issues.
14 Quarterly moderation of items for CASS and the portfolio (refer to the Provincial CASS Policy for assessment structures and moderation procedures).
15 Identify and collect training needs of teachers and report findings and recommendations to the Curriculum Implementers.
16 Ensure that the group functions as group and that procedures are followed courteously and co-operatively!

Appendix E: Example of an agenda for cluster meeting provided in the policy

Example of an AGENDA for cluster meetings

1	Registration	5 min
2	Welcome (team builder) and absentee follow-up	10 min
3	Revision of Ground Rules	5 min
4	Reflections on Previous Meeting	10 min
5	Progress on Portfolio items and CASS marks	35 min
6	Problems encountered and solutions	15 min
7	Planning for work to be completed in next phase	30 min
8	Next meeting: date and venue	5 min
9	Reflection sheets completed.	5 min
	Total time =	2 hours

Please remember to bring along the following:

- Provincial CASS policy document;
- Subject Guideline Document;
- Teacher's Portfolio;
- A sample of Learner's Portfolio;
- Year Programme/Pace setter; and
- Grade 10, 11 and 12 interim core syllabus.