# CONTINUING PROFESSIONAL DEVELOPMENT OF TEACHERS IN JUNIOR SECONDARY SCHOOLS IN NORTHERN BOTSWANA

**DEGREE OF DOCTOR OF PHILOSOPHY**

**(EDUCATION MANAGEMENT)**

**BY**

**PHYLLES MACHENG**

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# CONTINUING PROFESSIONAL DEVELOPMENT OF TEACHERS IN JUNIOR SECONDARY SCHOOLS IN NORTHERN BOTSWANA

Thesis presented to the School of Educational Leadership Development, Faculty of Education and Training at the

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Submitted in fulfilment of the requirements for the degree of

**Doctor of Philosophy (Education Management)**

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## DECLARATION

I, **PHYLLES MACHENG,** declare that the Thesis titled "Continuing professional development of teachers in Junior Secondary Schools in Northern Botswana", submitted for the Degree of Doctor of Philosophy at the North West University, has not been previously submitted by me for a degree at this or other University, that it is my own work in design and execution and that all material contained herein has been duly acknowledged.

Signature: ----------

Phylles Macheng

Date: 17/9/14

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Signature: ----------

Phylles Macheng

Date: 17/9/14

**CERTIFICATE OF ACCEPTANCE FOR EXAMINATION**

This thesis, entitled "Continuing professional development of teachers in Junior Secondary Schools in Northern Botswana", written by **PHYLLES MACHENG (student number 16695542),** is hereby recommended for acceptance for examination.

Supervisor: Prof. A. B. Oduaran

Signature: ----------

## DEDICATION

This work is dedicated to my encouraging wife, Malebogo, my daughter Chazha and son Ndiye, who taught me that determination leads to achievement particularly when one turns stumbling blocks into stepping stones.

## ACKNOWLEDGEMENTS

My gratitude goes to the following individuals who made it possible for me to complete this study:

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- Dr Nelda Mouton for editing my work after compilation. Any typographical errors are my responsibility.
- In loving memory of my late father, Albert Macheng, mother Uyapo Macheng, late brothers: Leonard, Tjimbisana and Nteedzi and late sister Baedzi. May their souls rest in peace.

Above all, to my God, for the courage, determination, the will and the blessings I continually received from Him.

## ABSTRACT

### CONTINUING PROFESSIONAL DEVELOPMENT OF TEACHERS IN JUNIOR SECONDARY SCHOOLS IN NORTHERN BOTSWANA

The main purpose of this study was to investigate the factors that impede continuing professional development of teachers and the availability of structures or programmes that facilitate teacher development in selected Junior Secondary Schools in the Northern region of Botswana. The theoretical framework of this study was underpinned by the constructivist learning and the adult learning theories. The principles of these two theories provided the basis for the proposed model emerging from this study.

The study was both quantitative and qualitative in nature. A questionnaire was developed and used to collect data. Two hundred and forty copies of the questionnaire were distributed to seven sampled schools in Francistown. The questionnaire was completed by teachers. The study also included an interview schedule. The researcher used a semi-structured interview schedule to gather data. The researcher interviewed four teachers, four senior teacher staff development, and four school heads of the seven schools in Francistown. The interviewees were randomly selected from the seven schools in Francistown. A computer aided statistical analysis was used to analyse the data collected.

The outcomes revealed that there are factors that impede the continuing professional development of teachers in Junior Secondary Schools. The study also established inadequacy of structures or programmes in schools which facilitate continuing professional development of teachers. Based on the outcomes of the study and reviewed literature, appropriate models for enhancing the continuing professional development of teachers in selected junior secondary schools in the Northern region in Botswana were proposed.

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## LIST OF ABBREVIATIONS

### ABBREVIATIONS

CPD – Continuing Professional Development

DSE – Diploma in Secondary Education

MoE &SD – Ministry of Education and Skills Development

STSD – Senior Teacher Staff Development

TCPD – Teacher Continuing Professional Development

# CHAPTER ONE

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# ORIENTATION OF STUDY

## 1.1 INTRODUCTION AND BACKGROUND OF STUDY

There is an increasingly great demand for proficiency among all groups of professionals. The expectation is that every professional should exhibit his/her ability to carry out his or her duties according to the highest standards of character and competence; and, for them to meet this demand, there is a need to engage in continuous learning. In this regard, Boyle et al. (2005:1) argue that the continual deepening of knowledge and skills is an integral part of the development of any professional employed in any profession. One important means of achieving competitive advantage is the creation of conditions for the rapid acquisition of new knowledge and skills. Teaching is no exception. The constant growth of professional knowledge and skills is a critical element of development in all professions.

The profession of teaching entails complex work in a complex and rapidly changing knowledge society. Darling-Hammond (2006:2) posits that, on a daily basis, teachers confront complex decisions that rely on many different kinds of knowledge and judgment that can involve high-stakes outcomes for students' future. This multifaceted work requires a teacher who upholds the highest standards of professional practice. In order for the teacher to come to terms with the demands of the complex work environment, he/she must continue learning in order to cope with the emerging challenges of the profession. For children to learn more, their teachers must continue to learn. Therefore, continuing professional development of teachers is central to the quality of teaching in schools. This view is shared by Guskey (2002:382) who states that high quality professional development of teachers is a central component in nearly every modern proposal for improving education.

The need for teachers to continue learning throughout their career cannot be over-emphasized. Kolnik (2010:54) argues that during their careers teachers face strong demands to continuously update their knowledge and skills due to the introduction of new curricula; changes in

technology; changes in learning needs of students and/or in the light of new research on teaching and learning. Teachers therefore need suitable in-service training that enables them to build fruitfully on the foundations of their initial training. Bezzina (2002:57) asserts that teachers' on-going professional development has to be taken seriously and not be left as a haphazard exercise. Teachers' professional development acts as a precursor and catalyst in enhancing student learning.

The quality of education is heavily dependent on the quality of staff, their motivation and the leadership they experience. This implies that the quality of teaching depends on the value of teachers which, in turn depends to some extent on the worth of their professional development. Globally, quality education has been a major concern for many years. To address this concern, many reform initiatives have focused on the quality of classroom teaching and, more specifically, on the teacher as the key to improving performance (Desimore et al., 2006:178). This explains the need for professional development of teachers to meet these expectations.

In Botswana, the quality of education and teaching in schools is also a major issue. Botswana has achieved marked improvement in the number of educational facilities provided to its citizens but the challenge now is how to improve the quality of education (Botswana Government, 1997:18). In other words, a significant proportion of school-going children have access to education but there is a need for improving the quality of education. The quality of education provided by the system relates to the relevance of the knowledge and skills the system provides.

The Revised National Policy on Education (RNPE) of 1994 which is currently directing the education system of the Republic of Botswana clearly highlights the importance of teachers in the education system. The Revised National Policy on Education of 1994 states that the success of any education system depends largely on teachers (Botswana Government, 1994:4). They are the catalyst of the learning process and the whole system rests on them. These statements capture the central and pivotal role the teachers play, particularly in the education system and in the overall development of the nation. In other words, teachers are crucial to the education system; they can make or break the system. Darling-Hammond (2006:1) proposes that education is

important to the success of both individuals and nations. Growing evidence demonstrates that among all education resources, teachers' abilities are crucial contributors to student learning.

Furthermore, the Botswana education system also recognizes the importance of the professional growth of teachers. This is highlighted in the Revised National Policy of Education of 1994 which advocates:

- Strengthening of a probation system to ensure proper induction of teachers into the teaching profession, and over the period of probation new teachers should be assigned an experienced teacher to work with;
- A school head as an instructional leader to take responsibility for in-service training of teachers;
- In-service education officers should visit schools to supplement the school based in-service training; and
- In-service training should be made accessible to all teachers at various levels to ensure continued professional and academic development

This policy is the driving principle of the education system and it clearly underscores the relevance of the continuing professional development of teachers. The policy recognizes that for meaningful teaching and learning to take place in schools, teachers' knowledge and skills must continuously be improved.

The education systems of different countries have adopted different approaches to the continuing professional development of teachers. It is worth pointing out at this juncture that there are constraints which in-service programmes for teachers encounter when they are put into practice. Some of these barriers to continuing professional development of teachers according to Bezzina (2002:64) are:

- Inadequate funds available to support the courses;
- In-service training opportunities are frequently available to only a small number of teachers;

- Principals and teachers have very little input into the selection and design of the course content organized by the various agencies involved in in-service training programmes. Consequently, the courses do not fully address the needs of most participants;
- Insufficient and inappropriate follow-up procedures are used to determine the relevance and productivity of the in-service training programmes;
- Little emphasis is placed on school based professional development;
- Currently, in-service training activities are far from the situations in schools;
- Insufficient research specifically focusing on in-service training for teachers is conducted;
- A lack of continuity exists in the planning and execution of in-service training activities for teachers; and
- Poor to limited collaboration occurs between institutions involved in in-service training programmes.

Furthermore, other researchers Boaduo (2010:77) and Kolnik (2010:56) identified the following barriers: to teacher professional development

- Lack of ownership by teachers in professional development initiatives;
- Insufficient funding;
- Lack of support by school leadership;
- Time constraints;
- Lack of structures in schools that support teacher professional development initiatives;
- Lack of trained personnel to oversee continuing professional development for teachers; and
- Lack of official policy that guides schools on provision of school-based professional development programmes

What can be established from the above listed barriers is that the barriers are two-fold. One group are those barriers that relate to the implementation of teacher professional development activities, for example, insufficient funding. Another group of barriers are those that relate to the nature of the professional development programmes, for example, in-service activities are far removed from the school situation. Those barriers to professional growth of teachers which relate

to implementation have a more adverse effect on teacher professional development than those that relate to the nature of staff development activity. School leadership has to play an active role in teacher professional development activities. If this does not happen there will be minimal impact on teachers' professional growth.

There is evidence to the effect that in-service education is not taking place as envisaged by the RNPE of 1994. In 2006, the Ministry of Education and Skills Development (MoE&SD) conducted a study which revealed that junior secondary school managements are generally very positive about the teaching skills of teachers with a diploma in secondary education (DSE) and often make favourable comparison with University of Botswana trained teachers. However, Bennell & Molwane (2008:14) argue that the Faculty of Education of the University of Botswana believes that diploma in secondary education (DSE) graduates have significantly lower levels of subject content knowledge than university teaching graduates. In other words, graduates with a diploma in secondary education (DSE) are skilled on the methodology aspect of teaching but lack the content knowledge of the subject they teach. This gap can be bridged by in-service education in schools. However, teachers in Junior Secondary Schools are of the view that there are factors that impede the continuing professional development of teachers.

Teachers in Botswana have reportedly cited the following as some of the factors that hinder teacher development:

- Lack of funding;
- Tight schedule (time constraints);
- Individualism (minimum collaboration);
- Lack of support from school management;
- Lack of reward for participation; and
- Infrequent staff development activities (Bulawa, 2003:250).

These impediments to professional development were also reiterated by senior teachers in staff development whose primary responsibility is to coordinate and facilitate in-service education in schools.

The literature on the implementation of continuing professional development indicates that there are factors that impede this process (Bezzina, 2002:64; Boaduo, 2010:77; and Kolnik, 2010:56). Against this background, this study intends to investigate:

- Factors that impede continuing professional development of teachers;
- Availability of structures in schools that facilitate continuing professional development; and
- Propose teacher continuing professional development models for Junior Secondary Schools.

## 1.2 STATEMENT OF THE PROBLEM

For teachers to discharge their duties to the highest standards of competence, it is very important for them to enhance their knowledge and skills in the profession. This means that it is imperative for teachers to perfect and sharpen their comprehension and proficiency continuously.

Continuing professional development is a course of activities designed and carried out to encourage the personal and professional growth of teachers. It enhances knowledge and skills of the teachers to improve the teaching and learning process. Therefore, appropriate structures and processes must be created in the school to support the ongoing professional development of teachers.

There are barriers to continuing professional development of teachers. One such barrier is minimal involvement of school heads in staff development activities in schools. Bulawa (2003:250) argues that lack of active participation by most school heads proved to be a barrier to the success of staff development programmes. As the instructional leader, the head of the school plays a major role in promoting staff development and in providing appropriate leadership for school improvement. Without any doubt, lack of support by the head of the school in staff development activities will render such activities unsuccessful. In support of this view, Engestrom & Danielson (2006:172) argue that professional growth is a developmental process

that involves multiple dimensions, and that teachers need ongoing support as they translate their self-initiated efforts to learn about innovation in classroom practices.

Another barrier is the inadequate funding of staff development programmes. Fox (2008:13) reports that funding and teacher time are two of the barriers to sustainable continuing professional development of teachers. The report clearly points out that many states and school districts do not sufficiently fund sustainable professional development opportunities. Education systems should invest in their human resource through sufficient funding of continuing professional development programmes in order to improve quality.

Research has identified little input by teachers in their own professional growth as an impediment to staff development of teachers. Bezzina (2002:66) cautions that continuing professional development programmes cannot succeed if teachers are passive recipients instead of being active participants. Teachers need to be able to see that what they learn is useful in their classroom and that it enables them to improve their lives. Teachers are professionals who posses knowledge, skills and the right attitude for their job. Lack of ownership in continuing professional development initiatives and isolated teaching in schools is an inhibiting factor to continuing professional development of teachers (Kim, 2005:134). This is vital because teachers would participate with vigour if they have ownership of the process and would want to see it through.

It is clear from the literature cited above that there are factors that impede continuing professional development of teachers. Therefore this research set out to investigate barriers to continuing professional development of teachers and establish the availability of structures that facilitate teacher development in Junior Secondary Schools in the northern part of Botswana. The study also proposed effective staff development models which schools can adopt based on the outcome of the research.

## 1.3 RESEARCH QUESTIONS

The following research questions guided the study:

(i) Are there any programmes that facilitate continuing professional development of teachers in Junior Secondary Schools in northern Botswana?

(ii) What factors impede the continuing professional development of teachers in Junior Secondary Schools?

(iii) Based on outcomes of the findings, what model can be proposed for the effective professional development of teachers in Botswana?

## 1.4 HYPOTHESIS OF THE STUDY

Phillips (2008:1) argues that it has long been recognised that the most important thing a teacher can do is to continue to learn. She further points out that professional development is vital for upholding continuous enhancement in teacher quality. The study proposed the following hypotheses:

i) There are programmes/structures in Junior Secondary Schools which facilitate continuing professional development of teachers.

ii) There are no factors which impede continuing professional development of teachers in Junior Secondary Schools

iii) The study proposed an effective model of continuing professional development of teacher for northern region Junior Secondary Schools.

## 1.5 AIMS OF THE STUDY

Hanley et al. (2008) cited in McDonald (2009:29) argue that teachers are continually faced with new syllabuses, different assessment and reporting requirements, and additions to the curriculum, such as Cultural Language and Literacy, and Information and Communication Technologies. In order to deal with change, teachers need new knowledge, skills and attitudinal dispositions to enhance effectiveness. For teachers to acquire new knowledge, skills, and attitudinal dispositions to overcome challenges they encounter they should be continuously developing professionally. The study focused on the following aims:

- To establish if there are programmes that facilitate continuing professional development of teachers in Junior Secondary Schools.
- To investigate factors that impedes continuing professional development of teachers in Junior Secondary Schools.
- Based on the outcomes of the investigation, to propose an effective model for continuing professional development of teachers in Northern Botswana.

## 1.6 PURPOSE OF STUDY

The purpose of this mixed-method study was to establish if there are structures in schools which facilitate continuing professional development of teachers. Furthermore, it will investigate the factors that impede continuing professional development of teachers in Junior Secondary Schools in Northern Region - Botswana. It has long been recognised that the most important thing a teacher can do is continue to learn. Improving teacher quality can improve learning outcomes for students (Leech, 2007:23). Shulman & Sparks (1992), as cited in Boyle et al. (2005:2) argue that the continual deepening of knowledge and skills is an integral part of the development of any professional working in any profession. One important means of achieving a competitive advantage is the creation of conditions for the rapid acquisition of new knowledge and skills. Continuing professional development is critical for maintaining continuous improvement in teacher quality and improve student learning.

For teachers to develop professionally there should be structures in schools which facilitate their continuing professional growth. These structures include amongst others, time, financial resources, supportive school leaderships, continuing professional development policies and a positive school culture. Research has revealed that there are barriers to the continuing professional development of teachers. King (2004:3) identified time, funding, lack of personal interest, and lack of encouragement as barriers to teacher professional development.

Based on the outcomes of the research and reviewed literature, the study will recommend a suitable model for continuing professional development of teachers in junior secondary schools in Northern-Botswana.

## 1.7 RESEARCH DESIGN AND METHODOLOGY

A research design is a 'plan or blueprint of how you intend conducting the research and it focuses on the end product' (Babbie & Mouton, 2009:74). It presents a picture of how the research is laid out, which methods of data collection are used and what happens to the subjects. This study adopted a mixed-method approach design.

### 1.7.1 Research Approach

This study employed the mixed-method approach. The approach comprised quantitative and qualitative elements but it was predominantly quantitative. Leedy & Ormrod (2001:102) argue that the combined approach seems to yield better results in that one element complements the other, and adds on strengths and reduces weakness inherent in each of them.

A researcher in qualitative study provides an interpretation of events in terms of the participants' understanding. Shank (2002:5) defines qualitative approach as a form of systematic inquiry into meaning. Inquiry means that researchers make an attempt to appreciate how others make sense of their experiences. Interview schedules were drawn to collect data from different participants. Quantitative approach is defined as an approach in which procedures are presented in numeric

descriptions (McMillan & Schumacher, 2001:15). In this study questionnaires were used to collect data from teachers.

More value is added to the research by combining the distinguishing features of these approaches. Refer to table 1 for additional information on the two approaches which when combined make up the mixed-method approach.

**Table 1.1**: Distinguishing characteristics of qualitative and quantitative approaches (Leedy & Ormrod, 2001:102)

| Question | Quantitative | Qualitative |
|---|---|---|
| What is the purpose of the research? | To explain and predict<br>To confirm and validate<br>To test theory | To describe and explain<br>To explore and interpret<br>To build theory |
| What is the nature of the research process? | Focused<br>Known variables<br>Established guidelines<br>Static design<br>Context free<br>Detached view | Holistic<br>Unknown variables<br>Flexible guidelines<br>Emergent design<br>Context-bound<br>Personal view |
| What are methods of data collection? | Representative, large sample<br>Standardised instruments | Informative, small sample<br>Observation, interviews |
| What is the form of reasoning used in analysis? | Deductive analysis | Inductive analysis |
| How are findings communicated? | Numbers<br>Statistics, aggregated data<br>Formal voice, scientific style | Words<br>Narrative, individual quotes, personal views, literary style |

### 1.7.2 Population and Sampling Procedures

The population of the study was one thousand three hundred (1300) teachers, thirty three (33) staff development teachers, thirty three (33) school heads in Junior Secondary Schools and ten (10) in-service education officers in the northern region of Botswana. The researcher

conveniently sampled seven junior secondary schools from northern Botswana (Francistown area). According to Cohen et al. (2000:103), convenience sampling is a sampling technique where subjects are selected because of their convenient accessibility and proximity to the researcher. Schools in this region are so widely dispersed that any other sampling approach will not be efficient.

Due to the use of mixed- method approach in this study, a further sample of four (4) teachers, four (4) school heads, four (4) staff development teachers was selected from seven (7) Junior Secondary Schools and two (2) in-service education officers were also selected from (10) in-service education officers. These participants were randomly selected through the blind draw or closed eyes technique. Johnson & Onwuegbuzie (2004:17) argues that sample size in qualitative methods should not be too large because it is more difficult to extract data, and also, sample sizes should not be too small because it will be difficult to achieve data saturation.

### 1.7.3 Data Collection Tools

In order to gather information relevant to answering specific research questions, the following instruments were used: interviews, questionnaires, and literature. These methods are discussed further in Chapter Three.

### 1.7.4 Data Analysis

Due to the mixed method of qualitative and quantitative strategies used in this research, the results from both approaches were consolidated as presented in Chapter Four. Data analysis as a process of bringing order, structure and meaning to a mass of collected data was done both qualitatively and quantitatively. Qualitatively, the Textually Oriented Discourse Analysis (TODA) was used. Quantitatively, the analysis engaged both descriptive and inferential statistical analysis using Statistical Package for Social Science (SPSS version 20) software. Chi-square test was used to assess statistical significance in contingency tables. This matter is discussed further in Chapter Three.

## 1.8 THEORETICAL FRAMEWORK

The rationale of teacher professional development is to support teachers' learning and growth. A great deal of the literature reveals that teachers' needs for professional development should offer on-going, classroom-based, learning experiences with other teachers in a supportive environment to improve teacher practice. The theory of 'teachers are adult learners', forms the base to the theoretical framework of this study. Consequently, the principles, approaches and methods applied in adult learning should be included in teacher's learning. Frey & Alman (2003:8) argue that continuing professional development activities shaped by the adult learning theory focus on empowering teachers to develop the skills necessary for them to take responsibility for their own growth and development.

Glatthorn and Fox (1996) as cited in Lalitha (2005:45) argue that adults are committed to learning when the purposes for learning are realistic and significant to them. Hence, effective continuing professional development practices should deal with areas where teachers have opportunities for instant applications in the classroom. Therefore, effective continuing professional development must enable teachers to see the relationship between what they are learning and what they do in their day –o-day activities.

Furthermore, adults need to witness results of their own efforts and have feedback on their progress. For this reason, effective continuing professional development should make opportunities available for teachers to try out what they are learning and receive structured feedback. In addition, adults are more concrete in the way they function than previously thought. As a result, teachers should have the opportunity for direct experiences in which they apply what they are learning in the work setting.

The arguments raised above indicate that continuing professional development practices should be based on adult learning principles to achieve continuing professional growth of teachers.

## 1.9 ETHICAL CONSIDERATIONS

It is very important to keep ethical considerations in mind as these affect decisions at all levels of the social research process (Babbie, 2008:25). In other words, no harm, intentional or unintentional, should be brought upon the research subjects. The researcher should not betray the trust of the research participants and their confidence should not be taken for granted. In conducting this study, the researcher made every attempt to abide by the principles expressed in the code of conduct of the American Association for Public Opinion Research as stated by Babbie (1998:446). Thus, the researcher observed the following:

- The researcher exercised due care in collecting and processing data, taking all reasonable steps to guarantee the accuracy of the results. The researcher obtained permission to conduct the research in schools from the Principal Education Officers, School Heads and the teachers as the participants.
- In collecting data, the researcher was truthful to the respondents in terms of not using practices and methods which abused, or humiliated them.
- The research protected the anonymity of the participating schools and respondents (in presenting the data), and also kept all information, pertaining to the respondents, confidential and anonymous by referring to them numerically.

## 1.10 SIGNIFICANCE OF THE STUDY

The study will be of great benefit to education policy makers, policy implementers (education administrators and staff development teachers), scholars, and teachers. The institutions and colleges involved in teacher education would find the research findings of this study an 'eye opener' in their fields of study because it would be a valuable source of relevant information for the pre-service preparation of teachers hence bringing awareness that professional growth does not begin and end during training but it is an ongoing process.

The outcome of the research study will assist the policy makers in the Ministry of Education and Skills Development (MoE&SD) in formulating policies that will guide and monitor the implementation of staff development programmes in schools. In this regard, the policy will

outline the role of the school administrators, staff development teachers and the general community of human resource development personnel in continuing professional development of teachers. Similarly, the outcomes of this research study will assist policy – makers to gauge the need for the review of the existing professional development policy. Many educational reforms adopted in the education systems of any country have to take on board the aspect of professional development of the teaching force in order to be effectively and efficiently implemented.

Equally important is the fact that this research might be of great benefit to teachers because its outcome could sensitize them to the fact that they have a role to play regarding their own professional growth.

The conclusion drawn from this study would provide vital information to policy makers and curriculum planners, which will aid in curriculum design, implementation and evaluation.

Moreover, the outcomes of this research can be a 'stepping- stone' for further research in the area of staff development of teachers of Junior Secondary Schools in Botswana. Also, the outcomes of this study would be a body of knowledge which could serve as a reference material for other researchers since professional development is a key strategy and a tool for implementing initiatives and responding to the demand for educational improvement.

## 1.11 LIMITATIONS OF THE STUDY

All research operates within limitations, and this study is no different. According to Thill & Boree (2007:379) limitations are factors beyond your control that affect report quality, such as budgets, schedule constraints, or limited access to information or people. Listed below are some of the constraints experienced in this study:

- Some questionnaires were not returned even after consistent follow-up
- The researcher experienced great challenges in terms of duplication of questionnaires – the college is financially challenged
- The financial expenditure was strenuous for the researcher

- Some school heads, senior teachers and in-service education officers were unwilling to be interviewed
- Time was also another limiting factor. It was a challenge to strike a balance in terms of time for research work and time to lecture at college.

In addition to the above limitations, Botswana has more than two hundred Junior Secondary Schools. The distance between some of these schools is about one thousand kilometres. This study was therefore confined to one of the five regions in the country due to insufficient resources such as funding and time at the disposal of the researcher.

## 1.12 DELIMITATIONS OF THE STUDY

The delimitations are those characteristics that limit the scope and define the boundaries of your study. The delimiting factors include the choice of objectives, the research questions, variables of interest, theoretical perspectives that you adopt (as opposed to what could have been adopted), and the population you choose to investigate (Simon, 2011:2).

The Ministry of Education and Skills Development has divided the country into five regions; Northern Regions, North Central Region, South Central Region, Southern Region and West Region. The study was conducted in Junior Secondary Schools in the Northern Region of Botswana.

## 1.13 DEFINITION OF TERMS

Some of the major concepts used in this study have been defined in this context as follows:

**Profession:**

A profession is a body of individuals applying advanced learning or scientific knowledge and expertise to provide a service to clients. A profession is an occupation, practice or vocation

requiring mastery of a complex set of knowledge and skills through formal education and/or experience.

**Learning:**

Learning is the attainment of information and understanding, skills and habits. Learning takes place in formal schools and informally at home. It is a process which takes place from birth to death; actually learning takes place every day of your life. Lefrancois (1997:109) defines learning as the acquisition of information and knowledge, skills and habits, and attitudes and beliefs. Learning is an all-time procedure of changing information and experience into knowledge, skills, behaviours, and attitudes.

**Factor:**

Collins Cobuild English dictionary (1987:507) defines a factor as a single part that merges with others to form a cause of something. In other words, a factor is a constituent or element that brings about certain effects or results. In the context of this study, it refers to those parts that impede or facilitate continuing professional development.

**Professional Development:**

Professional development is a process in which teachers review, renew and extend their knowledge and skills to improve purposes of teaching. Teachers are change agents. Hence, they should develop professionally. The National Staff Development Council (2001:7) understands professional development to mean a comprehensive, sustained and intensive approach to improving teachers and principals' effectiveness in raising student achievement.

**Continuing professional development:**

According to Oduaran (2012:7), continuing professional development refers to all lifelong learning career development programmes designed to help different professionals acquire

relevant skills and knowledge for the development of their performance. Teachers as professionals need to continuously be learning for them to enhance their performance.

## 1.14 ORGANISATION OF THE DISSERTATION

The study will be organized in the following manner:

**Chapter one: Overview of the Study**

In this introductory chapter, an overview of the study outlined the details that led to the development of the policy on continuing professional development of teachers. The overview further provided the rationale, purpose of the study, the research questions that will guide the study and the limitations of the study.

**Chapter Two: Reviewed Literature**

The key concept "professional development" of the study will be critically examined from which one definition of the concept will be adopted with reasons for the study. Included in this chapter is the conceptual framework that forms the foundation of the theoretical basis of the study. The theoretical framework which underpins this inquiry is the constructivist theory of learning/teacher learning.

**Chapter Three: Research Design and Methodology**

This chapter gives a full description of the research design and methodology employed to investigate the key questions that guide the inquiry. Both qualitative and quantitative methods will be employed and a full explanation of these methods will be given in this chapter. The full explanation includes, amongst others, data collection techniques and how the data will be analysed.

**Chapter Four: Results and Discussion**

Quantitative and qualitative data gathered for the purpose of answering the key research question are analysed in this chapter. Various analytical techniques are employed in this study. The responses from questionnaires are analysed using descriptive statistics and non-parametric tests involving contingency tables and Chi-squares. In addition, factor analysis is employed to investigate the construct validity of the items in the sub-scales of the questionnaire. Interviews are analysed qualitatively using thematic categories/coding. Interpretation and discussion of the results of the study will also be presented in this chapter.

**Chapter Five; Summary, Conclusion and Recommendations**

A summary of the main aspects of the study will be given in this chapter. Furthermore, conclusions will be drawn in relation to the conceptual, methodological and specific research questions. On the basis of the results and the findings of the study, recommendations will be made to facilitate implementation of the policy of continuing professional development in Botswana Junior Secondary Schools.

## 1.15 SUMMARY

This chapter is the orienting chapter of the study. It outlines the background, statement of the problem, and the research questions, purpose and significance of the study. In this chapter, the researcher briefly presented the theoretical framework and literature on which the research ideas were drawn. Furthermore, the researcher briefly discussed the research methodology and concerns of the subsequent chapters. The next chapter (Chapter Two) focuses on an extensive discussion of the relevant theoretical framework and literature as it applies to the study of continuing professional development of teachers in Junior Secondary Schools in the Northern Region of Botswana.

# CHAPTER TWO

# REVIEW OF LITERATURE

## 2.1 INTRODUCTION

In order to implement the curriculum effectively, there is a need to improve teachers' skills, knowledge and attitudes so that these are in line with the expectations of the job. The quality of the educational service provided by the country depends heavily on the quality of its teachers. For teachers to deliver quality education, appropriate initiatives should focus on the abilities of the teachers.

It is critical to revisit how teachers could best be prepared using the professional development programmes so that they are able to handle their difficult assignment. Through professional development, they can be assisted to have room for and take advantage of change in the profession. This modification emanates from educational and social change. This calls for relevant modern professional development programmes.

This chapter provides a critical review of relevant literature on continuing professional development of teachers. The review in this study has been categorized into the following sections:

- Defining concept of profession, professionalism and continuing professional development;
- Conceptual framework;
- Rationale for continuing professional development for teachers;
- Characteristics of effective continuing professional development of teachers;
- Models and practices in teacher continuing professional development; and
- Barriers to effective continuing professional development.

The chapter concludes with a summary of the key factors that impede the continuing professional development of teachers

## 2.2 DEFINING THE CONCEPTSOF PROFESSION, PROFESSIONALISM AND CPD

In this section of the study, the researcher presents literature on the concepts of profession, professionalism and continuing professional development.

### 2.2.1 Profession

Historically, professions were characterised by training and testing of applicants by those in the profession, usually after a period of apprenticeship (Beaton, 2010:3). The above stated understanding of a profession does not distinguish it from trade or craft. To differentiate a profession from craft or trade, Cheetham & Chivers (2005:20) compiled a list of a profession's characteristics. Therefore, a profession:

- Confers status within a society;
- Organises itself into some sort of professional body;
- Is learned, i.e., requires prolonged and specialised training and education;
- Is altruistic (orientated towards service rather than profit);
- Offers autonomy within the job role;
- Is informed by an ethical code of some kind;
- Is non-commercial;
- Has collective influence within society;
- Is self-regulatory;
- Is collegial; and
- Is client-focused.

Oosthuizen (2009:217-218) highlights the following as characteristics of a profession:

- **Specialised Knowledge**

The foundation of any profession is vested in a strong body of specialised knowledge (Wise, (2005) as cited in Oosthuizen, 2009:217). This view is shared by Oosthuizen (2009:217), who contends that specialised knowledge and certain skills have always been a prerequisite for the successful practice of any profession. To master the skills and obtain required knowledge, potential teachers are subjected to extensive and intensive training.

- **Continuing Research**

For teachers to secure their status as a profession they should be continuously learning. De Wit (2004) as cited in Oosthuizen (2009:217) emphasises the fact that, for teachers to meet the professional educator standard, they have to be lifelong learners and researchers. The rationale and intellectual approach of the profession is emphasised by systematic and continuing research. This approach creates a propensity for evaluating the current system and the identification and substitution of redundant procedures (Oosthuizen, 2009:217).

- **Acknowledgement of Authority by Society**

Wise (2005) as cited in Oosthuizen (2009:219) notes that the status of an occupation in becoming a profession is dependent on the receptivity of the public and the government. A profession has to obtain the respect and esteem of the society. If the society gives great regard to the services provided by a profession then the profession is awarded certain authority and privileges.

- **Service Orientation**

Heystek & Lethoko (2001) as cited in Oosthuizen (2009:219) argue that a profession should render an indispensable service to others where *'the interest of the client came first'*. Based on the above position, one could conclude that a profession performs an essential social service. There is no doubt that teaching fully meets this criterion, for education is a social service. The service which education performs is essential to the individual child who could not be fully

socialised in an industrial society if he did not spend a lengthy period in full-time formal education (Fakoya, 2009:7)

By these criteria, craft and trade guilds and their modern-day counterparts do not fit into the professional mode, for they were and are commercial and profit-motivated. Unlike a profession, they are not by definition altruistic or ethical (Beaton, 2010:4). Having established the characteristics of a profession it is important to define what a profession is.

A profession is autonomous, has a knowledge base and embraces adherence to ethics (O'Sullivan, 2006:8). At the Annual General Meeting of Profession Australia, a profession was defined as a disciplined group of individuals who adhere to ethical standards and hold themselves out as, and are accepted by the public as possessing special knowledge and skills in a widely recognised body of learning derived from research, education and training at high level, and who are prepared to apply this knowledge and exercise these skills in the interest of others (Beaton, 2010:4-5). There is a strong emphasis on ethics in the two definitions of a profession.

### 2.2.2 Professionalism

In order to succeed and move ahead in any job, one needs to be professional at all times. Professionalism does not inevitably connote wearing a business suit or carrying a laptop; instead, it means acting responsibly, uprightness, accountability and merit. It also means communicating effectively and appropriately and always finding a way to be productive. Professionalism is thus a combination of qualities. A professional employee reports for duty on time and effectively manages allocated duties. Professionals account for their own actions and work well with others. High quality work standards, honesty, and integrity are also part of the package. Professional employees appear clean and neat and dress suitably for the job. Communicating effectively and appropriately for the workplace is also an essential part of professionalism (Mastering Soft Skills for Workplace Success, n.d:114). Therefore professionalism is not just one thing but an amalgamation of qualities. O'Sullivan (2006:8) identifies the following fundamental principles of professionalism:

- A motivation to deliver a service to others;

- Adherence to moral and ethical code of practice;
- Striving for excellence, maintaining an awareness of limitations and scope of practice; and
- The empowerment of individual and teams.

Professionalism is not only a skills set in a given occupation: it is an ineffable something that the person exudes in manner, dress, speech and standards of practice that is palpably powerful: Standards, like honesty, due diligence, perseverance, willingness to listen and learn, creative thinking within a framework of training, and other qualities that most people may find difficult to describe but which they expect in the professionals with whom they engage, are included. Another word for these standards is "virtue" and the "difficult-to-describe something" is "trustworthiness" (Beaton, 2010:5).

Professionalism is a key component for the success of any profession. Professionals need to demonstrate professionalism in order for them to discharge their duties effectively and efficiently. Oosthuizen (2009:216) argues that employees commit a breach of contract where employees are qualified but are lacking in dedication or are inattentive or careless in the execution of their duties.

Continuing professional development is a very essential component of a profession and professionalism. One of the characteristics of a profession is lifelong learning and on-going research. This means that professionals need to be continuously informing themselves with regard to new developments in their profession so that they come to terms with contemporary challenges of the profession. Striving for excellence is one of the fundamental principles of professionalism. To realise these principles challenges the professional to be growing professionally in terms of knowledge and skills acquisition as well as in all other aspects of professionalism. In support of this view, Steyn & van Niekerk (2005:128) argue that many teachers' inability to reflect critically on their own practice and try out new solutions to problems they encounter daily, necessitates continuing professional learning.

### 2.2.3 Continuing Professional Development

The quality of education has been a major global concern for decades. To address this concern, many initiatives have focused on the quality of classroom teaching and more specifically on the teacher as the key to improving learner performance (Knight & Wiseman, 2005:387). In support of this view, Oosthuizen (2009:215) argues that there is a worldwide insistence that education should be effective, and should be characterised by skilled and well-trained educational staff that are capable of imparting knowledge to learners so as to equip them for the technologically specialised and competitive labour market. Constant expansion of knowledge and skills is an essential part of development in all professions. All professions require continuous updates of knowledge and skills (Somers & Sikorova, 2002:103). The teaching profession is no exception.

Continuing professional development of teachers goes beyond a merely informative stage; it implies adaptation to change with a view to changing teaching and learning activities, altering teacher attitudes and improving the academic results of students. The professional development of teachers is concerned with individual, professional and organisational needs (Heideman, 1990:4). Fullan (1991:326) defines professional development of teachers as a lifelong process which begins with the initial preparation of teachers and continues throughout their teaching career. He further states that continuing professional growth is the sum total of formal and informal learning experiences throughout one's career from pre-service teacher education to retirement. Fullan's (1991) understanding of professional development concurs with that of Steyn & van Niekerk (2005:131) who argue that professional development relates to lifelong development programmes that focus on a wide range of knowledge, skills and attitudes in order to educate students more effectively. Professional development includes both formal and informal activities carried out by an individual or an organisation to enhance staff growth.

Professional development involves work opportunities that encourage creative and reflective skills in teachers, thus enabling them to improve their practice. The professional development of teachers is the professional growth the teacher attains due to his/her experience and organized analysis of his/her own practice (Bredeson, 2002:663).The professional development of teachers includes all the experiences of natural learning as well as the more planned and conscious ones which try, both directly and indirectly, to benefit individuals, groups or schools and which

contribute to improving the quality of education in the classroom. It is the process by which teachers, whether alone or accompanied, review, renew and further their commitment as agents of change, with moral teaching aims. Moreover, they acquire and develop knowledge, competencies and emotional intelligence that are essential to professional thinking, planning and practice with children, adolescents and colleagues throughout each stage of their teaching lives (Day, 1999:4).

What the researcher can derive from the above definitions of teacher professional development as put forth by different authors is that it is an individual and collective process that should take place in the workplace of the teacher, which is the school. Furthermore, it is an on-going process which leads to enhanced work satisfaction, attainment of professional goals, positive development of individual knowledge and competence and keeping up to date with developments within the area.

Day's (1999:4) definition of the concept is not limited to the emphasis on a planned programme of activities for personal and professional development of teachers but includes, amongst others, teachers' experiences, good professional thinking and acknowledgement of teachers as change agents. These are critical characteristics in realizing successful professional development.
In this study, continuing professional development is conceptualized using the above definition provided by Day (1999:4). The preference of Day's definition is based on the following argument:

- It recognizes the significance of the 'individual' in professional development. This could be viewed as a proposition that teachers cannot *be* developed; instead development is an internal commitment, which comes from within.
- It highlights the value of cooperation and sharing for useful professional development to take place.
- The definition deviates from a deficiency approach and promotes for a "growth" approach to professional development and presumes that teachers are dedicated to continuously improving their performance for the delivery of good quality education.
- Day's (1999:4) definition of continuing professional development further alludes to the significance of context in achieving effective continuing professional development. He

contends that "...it [continuing professional development] does not occur in a vacuum". This implies that continuing professional development results from the continuous interactions of individual teachers within the area of operation.

Furthermore, research on continuing professional development shows that longer-term, team-oriented learning approaches are substituting passive workshops and lectures by experts (Sachs, 1999:25; Rhodes & Houghton-Hill, 2000:433; Brandt, 2003:13). These learning approaches focus on constant reflection and regeneration of professional knowledge, skills, and attitudes necessary to teachers so that all learners can learn and perform at high levels (Browell, 2000:57; Ho-Ming & Ping-Yan, 1999:39; Sparks & Richardson, 1997:2; Somers & Sikorova, 2002:103). Learners cannot perform at high level unless their teachers are continuously learning (Sparks & Richardson, 1997:2). In addition to that, research indicates that teachers gain the most up-to-date knowledge of the subjects they teach and engage techniques that are powerful in improving student learning through continuing professional development (Rhodes & Houghton-Hill, 2000:424; Browell, 2000:59; Sparks & Richardson, 1997:3).

However critics of continuing professional development of teachers are of the view that teachers should be adequately skilled before joining the profession and if they need professional development they should do so in their own time. Cook (1997:5) compares the needs of teachers and learners to a business and its responses to its changing needs. She argues that not all teachers, administrators, parents or community members agree that teachers need more time for professional development. She is of the view that their argument is that education departments/districts are 'in the business of educating students, not teachers'.

Continuing professional development of teachers currently emphasises continuous improvement of teachers' skills and knowledge. This emphasis has drawn some criticism. Steyn (2008:17) argues that emphasis on skills development has an inherent danger of the professional development of teachers becoming nothing more than a state-funded skills development programme in the South African context. He further argues that professional development of teachers should not be used by the state to train teachers in the implementation of new policies but rather to improve classroom practice as its first objective. In his view professional

development should be based on the awakening awareness of one's inability or incompetence to perform according to one's own expectations or laid-down criteria (Steyn, 2008:17). In the words of Spector (1993:9), professional development of teachers involves an inductive, problem-centred approach which relates to the context of the teacher. Context in this sense includes a teacher's worldview and affiliated philosophy of life that in turn will have an influence on one's understanding of being a teacher (Steyn, 2008:18).

Having detailed what continuing professional development means, it is vital to discuss the learning theory that is related to this study, since it involves adult learners.

## 2.3 CONCEPTUAL FRAMEWORK

The rationale for continuing professional development of teachers is to support their learning and growth. It is believed that teachers have the most direct, sustained contact with students, as well as considerable control over what is taught and the climate of learning. It is reasonable to assume that improving teachers' knowledge, skills and dispositions is one of the most critical steps to improve student achievement (King & Newman, 2001:86). It is further argued that by emphasising learning and development of teachers, schools are able to ensure that learning processes contribute to the attainment of goals and enhancement of quality and learner performance in schools (Browell, 2000: 57; Cullen, 1999:46). This clarifies why teachers are under pressure to be knowledgeable in their classrooms and validates the need for professional development of teachers. The theoretical framework underpinning this study is the Constructivist and adult learning theory.

One of the theoretical frameworks that anchor this study is the constructivist theory. Over the past two decades, constructivism has been embraced in a variety of fields (Vrasidas & Zembylas, 2004:327). Even though there are various kinds of constructivism, the fundamental assumption is that knowledge does not exist independent of the learner, i.e., knowledge is constructed.

### 2.3.1 Constructivism learning theory

The constructivist theory hypothesizes that learning is a process by which people construct meaning using their prior knowledge together with their experiences (Merriam et al., 2007 cited in Estepp et al., 2012:80). Furthermore, Fosnot & Perry (2005) as cited in Sturko & Gregson (2009:40) argue that the constructivist learning theory proposes that learning is a process which is self-regulated and it happens when people relate with their environment and then organise, reflect on and integrate new information and experiences into their current cognitive structure. In other words, the constructivists believe that knowledge is not automatically obtained, but actively created within the limitations and offerings of the learning environment. What the constructivist theory implies regarding professional development is that new knowledge linked to teacher practice is not passed on to teachers in one-day in-service workshops; instead, teachers must create their own professional knowledge through contextually meaningful learning experiences.

Criticisms have lately been expressed of constructivism learning theory. The cognitive/radical constructivists argue that knowledge is not directly transmitted from person to person but rather is individually and idiosyncratically constructed or discovered. On the other hand the social or realist constructivists emphasise the central role of the social environment in knowledge acquisition. The divided emphases by the constructivists lead to what the critics believe is epistemological relativism; where there exists no absolute truth any truth is as good as any other. Piaget and Von Glasersfeld are observed as advocating individual epistemological idiosyncrasy, and Kuhn and Vygotsky social epistemological relativism (Liu & Mathews, 2005:388).

Another important criticism of the constructivism theory of learning is its quasi-religious or ideological characteristic. According to Phillips (2008:5), across all fields of educational theory and research, constructivism has grown to be a bit similar to secular religion: constructivism is whatever else it may be, a "powerful folktale" about the foundation of human knowledge. As in all living religions, constructivism has many camps each of which harbours some reservations of its opponents. This plunge into sectarianism, and continuing growth in mistrust of nonbelievers, is probably the fate of all large-scale movements inspired by interesting ideas. This quasi-

religious or ideological aspect of constructivism is closely linked to the ambition of prescribing it as the human epistemology (Liu & Mathews, 2005:388).

Fox (2001) cited in Liu and Mathews (2005:389) observed that the constructivism theory very easily dismisses the functions of passive perception, memorisation and all other mechanical learning methods in traditional didactic lecturing but strongly advocates learners' active participation. However, the constructivist teaching approaches, together with one-to-one or small group classroom interface do not guarantee teaching effectiveness. In other words, the mechanical teaching methods in their own way contribute to knowledge acquisition by the learners. Furthermore, Liu & Mathews (2005:389) argue that with behaviourists and constructivists oscillating emphases between the objective and the subjective, the world and the mind, we find not two but one singular theoretical paradigm, the dualism.

#### 2.3.1.1 Constructivism and continuing professional development (CPD).

There are four key learning principles derived from Constructivism which are applicable to the continuing professional development of teachers (Fosnot & Perry, (2005) as cited in Sturko & Gregson, (2009:40)). The first principle is that learning is a developmental process that needs the participation of the learner. Teachers must actively take part in learning through discussing, experimenting, questioning reflecting and examining outcomes of their learning activities with other teachers. Secondly, learning entails imbalance, which calls for learners to search for other possibilities. Teachers must have opportunities to explore new teaching strategies, question their own beliefs about teaching and learning, and examine the beliefs and teaching strategies of their peers and other professionals. The third principle derived from Constructivism, which is applicable to continuing professional development for teachers and which is essential to the learning process, is reflective abstraction. It is through reflection that teachers can develop an understanding why certain methods work and others do not work in their classroom environment. Finally, dialogue with the community of learners encourages further thinking. Teachers can share ideas with peers and generate approaches and strategies to problems they encounter in the classroom. This sharing helps teachers collectively to make meaning out of their learning experiences and socially constructed professional development.

### 2.3.2 Adult learning theory

Another theory underpinning this study is andragogy. The term andragogy was first utilized by a German educator in the 1980's, but was first established into a theory of adult education by Malcolm Knowles. Knowles (1968:351) defines andragogy as the art and science of helping adults learn, based on certain crucial assumptions about the differences between children and adults as learners.

In 1980, Malcolm Knowles documented the differences between the ways adults and children learn and he popularised the concept of andragogy ("the art and science of helping adults learn"), differentiating it from pedagogy ("the art and science of teaching children").Knowles (1980:1984) as cited in Blondy (2007:116) developed a set of five assumptions that enclosed his concept of andragogy. The five assumptions about adult learners which Knowles posited are:

- Adult learners are self-directed and autonomous. They need to be free to direct themselves. This means trainers should involve participants in the learning process and serve as facilitators
- Adults have an accumulation of life experience. They need to connect learning to a knowledge/experience base. Adult experience should be incorporated into the learning to provide a base of connectivity and relevance
- Adult learners are goal oriented: They are usually familiar with goals they want to achieve. Therefore training should be planned with defined fundamentals that are consistent with the learners' goals
- Adult learners are relevancy-oriented. They must see a reason for learning something and
- Adult learners are problem – centred in their learning: They want to apply learning immediately;

According to Vella (2002), principles of adult learning include the conviction that adults have adequate life experiences to be in discourse with the trainer on any subject matter. There are six principles of andragogy or adult learning that are vital to the commencement, sustaining, promotion and retaining of dialogue with adults: needs assessment, safety, sound relationships, teamwork, engagement and accountability (Galbraith & Fouch, 2007:16). Needs assessment

involves the participants' input to the content of the material to be learned. The aspect of safety refers to the respect for learners as decision makers and also the capacity of the trainer to create an appealing environment for adults. Sound relationships are important in instituting a sense of enquiry and interest. Teams motivate a participatory space in which people live, and learning is improved by peers who can support and guide with clarity, tenderness and skill. The design of learning events must be accountable to the learners in the form of the learning outcomes being met. The possible results comprise what is planned to be trained is taught; what was meant to be learned is learned; the skills intended to be gained are visible, and the knowledge to be conveyed is manifest in the adults' language and reasoning (Vella, 2002:24).

However, there are numerous learning approaches associated with adult learning. Nevertheless, for the purposes of this study, the research will discuss self-directed, experiential and contextual learning since the researcher believes that they are most relevant to the study.

- **Self-Directed Learning**

Self-directed learning is a process in which individuals take initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human - and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating outcomes (Knowles, 1983:5). Merriam & Caffarella (1999:273) argue that self-directed learning is a model of learning that explains the fact that learning is a deliberate process undertaken by adults with the aim of constructing meaning and transforming understanding in their interaction with the environment. The independence of adults in experiencing learning is core in a self-directed learning model. Adults have a tendency to oppose situations in which they believe that others are imposing their wills on them. They want to take responsibility for their own destiny.

There are three aspects of self-directed learning: the goal, the process and the learner. In an adult learning context, the goals are generally self-determined. The implication of self-directed learning is that adults learn with a particular goal to realize. The goals for self-directed learning are to build the capacity for the individual to work on his/her own, being proactive, and accountable for his/her learning. These goals also enable the adult learners to understand what

informs their needs, reflect on those issues and promote emancipatory learning as well as social action. These goals imply that self-directed learning enables adult learners to be freed from social forces by capacitating themselves with all that it takes to face the challenges (Ntapo, 2009:30). The aim of this kind of learning is to bring change in the lives of the adult learner.

It is apparent that self-directed learning is grounded in humanistic philosophy that encompasses personal autonomy and freedom to make choices. Human beings can control their destiny and are capable to become what they are capable of becoming (Merriam & Caffarella, 1999:256). This implies that, for any continuing professional development model to bear fruit, teachers should have an input in its planning and execution. Research has shown that traditional professional development activities such as workshops do not take into account how adults learn best, therefore participants become passive and resistant to learning.

Adults learn by themselves at different phases of their lives and for diverse purposes. Adults study on their own as a result of life changes, interests, or in order to become part of a community. They arrange their learning and look for resources and people in order to assist them, and they have characteristics which enable them to supervise their learning and complete their goals.

In this type of learning, teachers identify one goal which they consider to be of importance to them - either individually or in small groups -list the activities that they will implement to reach that goal, the resources needed and ways in which their progress on accomplishments will be assessed. In such a situation, teachers take responsibility for their own development. The role of the administrators and supervisors is to facilitate, guide and support the development. Teachers as adult learners need to take some responsibility for their own professional development, such as being encouraged to initiate and implement some developmental programmes in their school. Lack of such structures in schools can impede teachers' professional growth.

Nevertheless, the assumption that adults are self-directed learners has been challenged by some scholars. Schapiro (2003) cited in Blondy (2007:120) disputes the idea of self-directed learning as being unaware of issues of authority and disparity within educational settings as a whole. As a

result he views self-directed learning as an objective that may be sought but not necessarily practical to accomplish. Furthermore, although learners may express a wish to be self-directed in their learning, most do not have the necessary understanding of learning required to be self-directed and thus need guidance and support in their learning process (Cheren, 1983 as cited in Blondy, 2007:120).This may be particularly true in continuing professional development of teachers because some teachers may have spent several years in the profession but not be skilled and knowledgeable on how to go about helping themselves to grow as a professional. For example, the teacher might not be skilled and informed on how to conduct action research in the classroom to enhance the teaching and learning process. In this situation, the self-directed adult learner would require to be guided and developed in order to realise the desired goal.

Furthermore, Mezirow (1985) cited in Manning (2007:108) argues that there are situations where the learners' experience is of little value including when they have no previous experience in the subject matter, where readiness to learn is governed by one's level of maturity, and when the learner is motivated by external pressures. The point being raised here is that there may be situations where teacher-directed learning is to be preferred over self-directed learning.In relation to continuing professional development of teachers there are situations where teacher development programmes initiated and implemented by those outside the school environment are effective. Examples of such programmes are workshops and seminars.

- **Experiential Learning**

Another assumption about adult learning is that adults bring experience with them to the learning environment. Knowles (1980) as cited in Blondy (2007:121) values the experience learners bring to the educational environment. He views it as an important resource for both learners and the facilitators. In other words, adults possess a vast and varied storehouse of experiences, a tremendous resource for learning if acknowledged and capitalized on by the educator. This assumption advocates the recognition of adults' experience when designing and executing professional development programmes. Adults learn effectively when the learning process engages their knowledge and skills which they have accumulated through their experience. This implies that experiential learning is fundamental in the teaching and learning of adults.

Experiential learning is in a sense a process of active engagement between the inner world of the person and the outer world of the environment (Beard & Wilson, 2006:2). Kolb (1984:41) defines experiential learning as the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience. In addition to that, people learn best when experiences are meaningful and directed. Experiential learning theorists agree that experiences are critical to the learning process.

Life experience is the text book for adult learning (Forrest & Peterson, 2006:117). It presents the environment and framework from which adults can deduce meaning and integrate new experiences, in that way creating new meaningful learning (Sinnot, 1994). In other words, as a person matures, he/she amasses a growing reservoir of experience that becomes a resource for learning. There is no doubt that teachers accumulate a lot of knowledge and skills through experience in their teaching career and this can be a foundation for their development. On a daily basis, teachers encounter the challenges of teaching and learning in their classrooms and therefore teacher professional development programmes should engage teachers' experiences to address these challenges. Instruction that incorporates experience with academic theory along with the experiences of other adult learners (and the instructor) offers a solid foundation upon which new learning can be fashioned (Justice, 1997:30). Teachers' professional development programmes which engage teachers' experience will yield positive results with regard to effective development of the teacher. Disregard of teachers' amassed knowledge and skills through experience could impede continuing professional development of teachers.

However, this assumption has been challenged on the basis that experience cannot be the important characteristic of adult learning as stated in the theory of experiential learning (Brookfield, 1995 cited in Blondy, 2007:122). In support of this view, Yonge (1984) as cited in Blondy (2007:122) recognizes that while there are qualitative differences in how adults and children learn because of personal experiences and stage of adulthood, the way by which they learn is fundamentally the similar (i.e. perceiving and thinking). Consequently, he perceives the qualitative differences as not enough to support a plain difference between andragogy and pedagogy. However, Robert (1992:7) in his study of distance learners, research participants

reported that they frequently engage life experiences during the process of completing assignments. This means life experience is a concept valued by adult learners.

- **Contextual Learning**

That adult learners are problem oriented is another assumption of the theory of andragogy. In this assumption Knowles (1984) cited in Blondy (2007:125) believes that adults normally do not just learn for the sake of learning, but because they need to relate what they are learning to life situations right away. He further argues that learners need to be conscious of the significance of what they learn in relation to their life responsibilities or goals.

This is consistent with Glatthorn and Fox (1996) as cited in Lalitha (2005:48) who argue that adults learn, retain, and use what they perceive as relevant to their professional needs. As a person matures, his/her time perspective changes from one of postponed application of knowledge to immediacy of application, and accordingly his/her orientation towards learning shifts from one of subject-centeredness to one of problem-centeredness. Adults are motivated to learn to the extent to which they perceive that the knowledge which they are acquiring will help them perform a task or solve a problem that they may be facing in a real life situation. Therefore, professional development practices should address areas where teachers have opportunities for immediate application in the classroom.

For professional learning to be effective, it needs to be on-site, intensive, on-going, job-embedded and led by fellow educators who model best practice (Wagner et al., 2006as cited in Borthwick & Risberg, 2008:40). Even though conferences and workshops may be beneficial for peer networking and for dissemination of ideas for transformative learning to occur, where teachers can significantly enhance their professional growth for the long term, they need professional development embedded in their day to day practice.

Schools can no longer afford the luxury of separating professional development activities from the on-going realities of teachers' work and the workplace. The two must be seen as integrated and interdependent to support teacher and school change and on-going improvements efforts (Johnson & Johnson, 1994:99).

This assumption has been challenged based on Knowles' proposed continuum between pedagogy and andragogy. Cross (1980:225) argues that a continuum between pedagogy and andragogy is non-existent. She claims that the principles of subject centred learning and problem centred learning are more dichotomous in nature. Furthermore, Brookfield (1986) cited in Blondy (2007:126) bases his challenge of this assumption on the fact that adults learners may choose to learn something new purely for the joy of learning, and in such circumstances they may not be learning for the purpose of immediate application. This may be particularly true even in continuing professional development of teachers because it is not always the case that they engage in learning for immediate application. In some cases, they do it for future plans or hoping to change career.

#### 2.3.2.1 Adult learning theory and continuing professional development

Frey and Alman (2003:8) argue that professional development activities shaped by the adult learning theory focus on empowering teachers to develop the skills necessary for them to take responsibility for their own growth and development.

Adults commit to learning when the goals are realistic and important to them (Glatthorn & Fox, 1996 as cited in Lalitha, 2005:46). As a result, effective professional development practices should deal with areas where teachers have prospects for immediate application in the classroom. In addition to that, adults learn, retain and use what they perceive as appropriate to their professional needs. For teacher development to be effective, teachers, as adult learners, must be able to see the connection between what they are learning and what they accomplish in their day-to-day activities.

When structuring the process of professional development of teachers, both different views of learners and different principles of adult learning should be considered in order to guide the process effectively (Merriam et al., 1996:12). Principles such as attending to the learner's needs and interests, involving adult learners in setting the programme goals and objectives, designing effective programmes, implementing the programmes, and evaluation of the programmes, are all to be considered in teacher development.

Brookfield (2002:100) proposes four steps to be followed when designing programmes for professional practices of teachers as adult learners:

- Consider the experience of participants;
- Consider the age of the participants;
- Incorporate the challenging content into the professional practice; and
- Provide wide choices to get involved in activities for professional growth and create learning environments.

McCombs (1997:2) further reinforces the adult learner-centred principles by proposing several factors that should exist for teachers to implement innovations successfully in order to improve student learning and achievement. Firstly, teachers must believe that transformation is essential. Secondly, they must be prepared and capable to change their practice. Thirdly, teachers need to be able to see models which utilise alternative strategies. Finally, the administration and school must support the transformation by providing instructional guidance, and offering on-going staff development. In reality it is only the teacher who can truly understand the need for change and pursue the adult education necessary to transform his/her practices.

Adults have a deep need to be self-directing. They want to initiate the learning process and take an active role in what and how they learn. Lawler (2003:98) argues that designers of continuing professional development must recognise and accommodate the voluntary or self-directed nature of adult learning. Professional development that offers teachers choices about how and when to learn will likely produce greater interest and more sustained involvement in learning.

In summary, principles of constructivism and andragogy form a framework in which to explore what impedes teacher professional development and provides a guide on what models of teacher professional development Junior Secondary Schools can adopt.

The two theories of learning underpinning this study discussed above advocate active participation of teachers in their continuing professional development. Active participation by teachers in their continuing professional growth could take the form of teachers taking part in

continuing professional development programmes which engage the previous knowledge they have acquired through experience to develop strategies which will enhance the teaching/learning process. Wood & Thompson (1993:53) purport that adults come to learn with a wide range of experiences, knowledge, interests and competencies. As a result, continuing professional development must accommodate this diversity. In other words, continuing professional development programmes should tap into the vast knowledge teachers accumulated through experience for the programmes to be meaningful. Continuing professional development programmes which do not recognise or engage teachers' previous knowledge could be less effective for professional growth.

In addition, the two theories advocate collaborative continuing professional development programmes. The social constructivists are popularly held to be the proponents of the central role of the social environment and interaction in learning (Liu & Mathews, 2007:388). Andragogy is a student-centred, experienced-based, problem-oriented and collaborative approach to learning (Burns, 1995:233). In other words, these two theories popularise continuing professional development programmes which give teachers a platform to work together. In support of this argument, Wood & Thompson (1993:52) assert that adults who participate in small groups are more likely to move their learning beyond understanding to application, analysis, synthesis and evaluation using classical Bloom's taxonomy. Based on the two theories of learning, individualistic continuing professional development programmes can hinder continuing professional growth of teachers.

The constructivist and adult learning theories endorse student-centred approach to learning. These two theories promote CPD programmes which encourage active participation of recipients in the design and implementation of the programmes. Lawler (2003:87) argues that continuing professional development programme which offers teachers choices about how and when to learn is likely produce greater interest and more sustained involvement in learning. Therefore, CPD programmes which relegate teachers to be passive recipients of knowledge could be an impediment in their professional growth.

The constructivist and adult learning theories promote collaborative and learner-centred approaches to learning. According to Gaible and Burns (2005) cited in Hooker (2008:3), teacher development programmes are classified into three broad models; sited-based, self-directed and standardised teacher development. The site-based/job embedded model of teacher development engages learner-centred and collaborative learning approaches. Hord (1998) cited in Smith & Gillespie (2008:219) asserts that professional development under the job-embedded model is situated within the school program or other local context as part of an endeavour to build on-going professional communities. In support of this view, Smith and Gillespie (2008:219) posit that professional development cannot be perceived as an event that happens on particular days in a school calendar year but instead it must be part of the daily work of teachers, administrators, and other stakeholders. Acquisition of new knowledge by teachers occurs every day as they interact with their colleagues and students. In this regard, the two theories of learning underpinning this study advocate a teacher development model which embraces teacher collaboration and their active participation in its design and implementation.CPD activities linked to such a model include group study, lesson study, coaching or inquiry groups.

## 2.4 RATIONALE FOR CPD OF TEACHERS

There is a great expectation by societies for their education systems to perform well. Continuously, new goals are set, such as universal basic education by 2015, lifelong learning, life skills education, HIV/AIDS education, emotional intelligence, competency in the use of information communication and technology. Education is a key player in the realization of these goals. Teachers face high expectations, new responsibilities and challenges and therefore need new skills, knowledge and new roles which they can obtain through continuing professional development.

The foundation of teacher quality is the provision of sufficient prospects for personal growth and professional development. Of course, the importance of teacher continuing professional development has been a seemingly important concern for education. Regarding this, Mohammed (2006:4) states that the continuing professional development of teachers ought to be an issue of central concern to all those who care about the quality of tuition in schools. Research on teacher

education has consistently stressed the need to regularly provide opportunities for teachers to improve their knowledge of the subject matter they teach and the teaching skills they learned in the pre-service courses. In support of this argument, Phillips (2008:1) is of the view that it has long been recognized that the most important thing a teacher can do is to continue to learn. She further argues that professional development is critical for maintaining continuous improvement in teacher quality.

We live in a changing world where knowledge and skills that teachers attained in their initial preparation become outdated as new challenges and certainties materialize. For example, Botswana has been plagued by the scourge of HIV/AIDS, therefore education as a key player in the fight against HIV/AIDS, ought to incorporate HIV/AIDS education in teaching subject areas. This is a new area that warrants continuing professional development of teachers. In order for changes to be effected in the classroom, additional technical and pedagogical support is necessary. Professional development programmes should include all staff who contribute to the implementation of the intended changes; school principals, teachers, technical and administrative support personnel.

Teachers join the teaching profession with different qualifications. This variation has an implication which warrants the provision of continuing professional development programmes for teachers. For example, in Botswana, teachers' qualifications in schools vary and they range from Primary Teacher certificates (PTC) to Master's Degrees. Robinson and Latchem (2003:5) note that teachers vary in number of years of education they have received and the levels attained, the nature and amount of training completed, average age, social status, location (urban or rural) and income levels, skills as adult and independent learners, beliefs about ideal teaching, levels of motivation, access to information, communication technologies (ICT), learning resources (teachers' journals, books on teaching, professional associations, newsletters), opportunities for professional development, and support for teachers. These diversities call for the organization of custom-built, continuing professional development courses.

There are clear stages in the process of becoming a teacher. Robinson and Latchem (2003:5) identify the following five stages: novice, advanced beginner, competent performer, proficient

performer and expert teacher. The route from being a novice teacher to becoming an expert teacher will be made possible and stress-free by well-intended, continuing professional development programmes.

Furthermore, after initial training, many teachers continue to have developmental needs relating to curriculum and instruction. In support of this view, Knight (2002:230) argues that professional development is needed because initial teacher education cannot contain all the knowledge that is needed and certainly not that procedural, 'how to' knowledge which grows by practice. This view is shared by Feinman-Nemser (2001:1014) who purports that teachers require access to serious and sustained learning opportunities at every stage in their career if they are to be able to teach in ways that meet demanding new standards for student learning or to participate in the solution of educational problems.

Speck & Knipe (2005:75) outline the career development continuum of teachers to justify the importance for continuing professional development of teachers.

**Table 2.1**

Career Stages and Development Needs of Teachers

| *Career Stage* | *Developmental Needs* |
|---|---|
| Survival | Learn day-to-day operations of classroom and school |
| Building | Develop confidence in work and multifaceted role of teaching |
| Striving | Develop professionally and achieve high job satisfaction |
| Crisis periods | Renewal to counteract teacher burnout |
| Complacency | React complacency and low motivation |
| Career wind down | High status as a teacher without exerting much effort |
| Career end | Retirement |

Adapted from Speck and Knipe (2005:75)

The reasons in the discussion above justify the need for teachers to grow professionally so that they can discharge their duties effectively and efficiently. Teachers are critical for provision of quality education by an education system.

## 2.5 CHARACTERISTICS OF EFFECTIVE CPD OF TEACHERS

The role of the teacher in the success of every student is of paramount importance in all educational situations. The success of every teacher is highly dependent upon his or her knowledge and skills which in turn are dependent upon his or her training. Schools can no longer rely on teachers having and maintaining their own professional knowledge. Sustained and continuous professional growth toward effective....instruction is every educator's and every school's responsibility (Learning First Alliance, 2000:2). Every teacher needs professional development to be effective in every teaching situation. Generally professional development also has to be effective in order for the teacher to be effective in teaching situation.

The question is, 'what is effective continuing professional development? Effective continuing professional development focuses on improving instructional practice by giving teachers new knowledge and techniques for assessing learning with the ultimate goal of improving the learning of students (Wei et al., 2009:4). High-quality continuing professional development is a central component in nearly every modern proposal for improving education. Continuing professional development programmes are systematic efforts to bring about change in the classroom practices of teachers, in their beliefs and attitudes, and in the learning of students (Guskey, 2002:381). The ultimate goal of effective continuing professional development is improvement of student learning.

The aim of education reform is to improve student performance through effective continuing professional development. Shanker (1996:223) posits that for continuing professional development to be effective, it must offer serious intellectual content, take explicit account of the various contexts of teaching and experiences of teachers, offer support for informed dissent, be on-going, be embedded in the purposes and practices of schooling, help teachers to change within an environment that is often hostile to change, and involve teachers in defining the purposes and activities that take place in the name of continuing professional development.

The arguments raised by Shanker (1996:223) with regard to what constitutes effective continuing professional development programmes are shared by Steiner (2004:40) whose view is that effective continuing professional development can be explained under two main areas:: structural features and 'core' features of professional development.

The two main components of effective continuing professional development proposed by Steiner (2004:40) are highlighted and discussed below.

Structural features:

- Form (Was the activity presented as a 'reform' activity such as a study group or network, or as a traditional workshop or conference?).
- Duration (How many hours did participants spend and over what span of time did the activity take place?).
- Participation (Did groups from the school, department or grade level participate collectively? What opportunities did the teachers have for meaningful collaboration and reflection?).

Core features:

- Content focus (To what degree did the activity focus on improving and deepening teachers' content knowledge and their understanding of how students learn content?).
- Opportunity for active learning (What opportunities did teachers have to become actively engaged in a meaningful analysis of teaching and learning?).
- Coherence (Was the activity closely coordinated with school and district improvement efforts? Was the content in alignment with state standards and assessments?) (Steiner, 2004:40).

The above stated components of effective continuing professional development for teachers are discussed below.

### 2.5.1 Form

The most common type of CPD, and the form most criticized in the literature, is the traditional form of continuing professional development activities. Examples of these continuing

professional development activities include, amongst others, workshops, conferences and seminars.

Traditional continuing professional development activities are popular, though they are criticized as being unsuccessful in providing teachers with adequate time, activities, and content needed for enhancing teachers' knowledge and promoting meaningful transformation in their classroom practice (Cohen & Hill, 2001:101). Reform types of continuing professional development activities, such as study group or mentoring and coaching, are now gaining popularity. The shift towards the reform type of continuing professional development activities is based on the belief that these activities are more effective. In support of this view, Darling-Hammond (2006:12) argues that reform activities such as study groups, teacher networks, mentoring, coaching and other collaborative endeavours are believed to have more success in changing teaching practice. This means that reform types of continuing professional development activities are successful in enhancing teaching and learning.

### 2.5.2 Duration

Research shows that the longer the teachers are engaged in professional development activities, the more effect it has on their teaching. Continual and thorough professional development is more likely to have an impact on teachers (Garet et al., 2001:920). The length of professional development activities is significant in two ways. First, longer activities are more likely to provide an opportunity for in-depth discussion of content, student conceptions and misconceptions and pedagogical strategies. Secondly, activities that extend over time are more likely to allow teachers to try out new practices in the classroom and obtain feedback on their teaching (Garet, 2001:920).

It has been established that conventional approaches to continuing professional development, such as one-time workshops, usually do not lead to noteworthy changes in teaching methodologies (Hawley & Valli, 1999:21). Therefore, traditional continuing professional development activities such as seminars, conferences and others have minimum impact on continuing professional development for teachers. In this regard, reform type of continuing

professional development activities such as mentoring, coaching, and study groups are more effective because they are long term in nature.

However, Kennedy (1998:98) argues that duration alone is not enough to ensure success and that variation in content has a stronger effect than when the program takes place over time. When teachers spend time on continuing professional development that is not focused on content, there is minimal impact on student results.

### 2.5.3 Collective Participation

The similarity between teachers who attend the program is another critical component in the makeup of effective continuing professional development programmes. It is becoming common to design continuing professional development for groups of teachers from the same school, department and/or grade level. Designing continuing professional development programmes for teachers of the same school has its own advantages. One such advantage is that teachers who work together have the opportunity to deliberate on problems that arise during continuing professional development activities. Collective participation in the same activity can provide a forum for debate and improve understanding which enhances teachers' capability to develop (Ball & Cohen, 1999:15).

Furthermore, collective participation in continuing professional development may help to contribute to a shared, professional culture. This is when teachers in a school or teachers who teach the same grade or subject develop a general understanding of instructional goals, methods, problems and solutions (Talber & Mclaughlin, 1993:199). What can be derived from the above discussion is that, for continuing professional development activities to make a meaningful impact on continuing professional growth of teachers, it has to be collaborative. The collaboration should be within the same school, department or grade level.

### 2.5.4 Content Focus

Continuing professional development activities may have diverse goals for teachers. The goal of some activities may be to streamline teacher beliefs about instructional strategies, improve

teaching methods, provide a how-to of analysing student work, or any number of other areas of teaching (Ball & Cohen 1999:17). A number of authors argue that continuing professional development requires a twofold focus on both knowledge of subject matter content as well as an understanding of how children learn specific content. Kennedy (1998:100) indicates that, compared to more general continuing professional development, continuing professional development that focuses on specific content and how students learn content, has a larger positive effect on student achievement outcomes, especially achievement in conceptual understanding. Garet et al. (2001:925) also note that content-focused activities have a substantial positive effect on enhanced knowledge and skills, as reported by the teachers in their sample. It emerges from the above discussion that content focus is a central dimension of high-quality continuing professional development.

### 2.5.5 Promoting Active Learning

One of the characteristics of an effective continuing professional development program is that it promotes active learning. Effective continuing professional development concerns the opportunities made available by the continuing professional development activities for teachers to become actively engaged in meaningful discussion, planning and practice (Lieberman & Miller, 1996:1049). The active learning opportunity can take the form of a novice teacher observing an expert teacher or a novice being observed teaching. It could be a teacher leading a discussion or reviewing a student's work. Teachers need to be involved in the shaping of their continuing professional development so they can ensure it aligns with their goals. According to Burke (1997:27) and Ribisch (1999:117), effective continuing professional development implies maximising staff interaction through small-group discussion that could stimulate their learning and provide motivation. Furthermore, Tyrell (2000:16) argues that teachers do not want to be lectured, but prefer to be inspired by observing an expert performing a task.

### 2.5.6 Fostering Coherence

Another important characteristic of an effective continuing professional development program is that the activities should be perceived by teachers to be part of an overall improvement strategy.

According to Garet et al. (2001:927), continuing professional development activity is more likely to be effective in improving teachers' knowledge and skills if it forms a coherent part of a wider set of opportunities for teacher learning and development. Teachers get guidance regarding what to teach and methods to employ from various sources. If it so happen that these sources provide coherent goals, they can assist teachers to improve teaching practice. If sources conflict, they may create tension that can be a barrier to teacher efforts to develop their teaching.

Harwell (2003:2) identified three characteristics of effective continuing professional development which includes context, process and content. The table 2:2 below summarises these three characteristics of effective teacher continuing professional development and factors that contribute to its success.

**Table 2.2**: Summary of the three characteristics of effective continuing professional development (adapted from Harwell, 2003:8).

| |
|---|
| **Context (or setting)** |
| • Supports professional development and the changes it is intended to bring about |
| • Is characterised by a shared sense of need for change |
| • It is teaching professionals to agree on answers to basic questions regarding the nature of learning and the teacher's role in the classroom |
| • It is teaching professionals to consider learning a communal activity |
| **Content** |
| • Deepens teachers' subject matter knowledge |
| • Sharpens classroom skills |
| • Is up-to-date with respect to both subject matter and education in general |
| • Contributes new knowledge to the profession |
| • Increases the ability to monitor student work |
| • Addresses identified gaps in the student's achievement |
| • Centres on subject matter, pedagogical weaknesses within the organisation, measurement of student performance, and inquiry regarding locally relevant professional questions |
| • Focuses on (and is delivered using) proven instructional strategies |
| **Process** |
| • Is research based |
| • Is based on sound educational practices such as contextual teaching |
| • supports interaction among master teachers |
| • takes place over extended periods of time |
| • provides opportunities for teachers to try new behaviours in safe environments and receive feedback from peers. |

According to Knapp et al. (2003), effective continuing professional development displays four crucial characteristics: ongoing, embedded within the context-specific needs of a particular setting, aligned with reform initiatives and grounded in a collaborative, inquiry-based approach to learning. Effective continuing professional development is driven fundamentally by the needs and interests of participants themselves, enabling adult learners to expand on content knowledge and practice that is directly connected with the work of their students in the classroom.

What can be established from the discussion above with regard to the characteristics of effective continuing professional development programmes is that in order to enhance professional development, it is important to focus on the duration, collective participation, and the core features (that is, content, active learning and coherence).

Research shows that the reform types of continuing professional development programmes tend to produce improved outcomes mainly because they tend to be longer in duration. However, traditional and reform activities of the same duration tend to have the same effects on the professional growth of the teacher. In support of this view, Loucks-Horsley et al. (1998:77) argue that when workshops are designed as part of a larger continuing professional development plan that includes other activities such as curriculum modification or case discussion or are built into a long-term continuing professional development plan with follow-up time regularly scheduled for discussion and reflection, they can have an impact on both teacher practice and student achievement.

Having discussed the characteristics of effective continuing professional development for teachers it is appropriate that the review of literature should now look at models and practices of teacher continuing professional development. The discussion of the models and practices of teacher continuing professional development will highlight those models and practices which exhibit those characteristics of effective professional development programmes or activities.

## 2.6 MODELS AND PRACTICES IN TCPD

Teacher continuing professional development is training offered to teachers to enhance their improvement in certain areas. It is an instrument by which policy makers' ideas for

transformation are disseminated and put across to teachers. Although the recipient of Teacher Continuing Professional Development (TCPD) is the teacher, the final beneficiary is the student. Thus, Teacher Continuing Professional Development is often the most critical component for the provision of quality education by any education system.

There are different types of teacher continuing professional development programmes of activities teachers participate in to enhance their knowledge and skills of teaching. These activities are grouped into three models of teacher professional development. Lieberman & Miller (1996:1050) classified continuing professional development into three types: direct teaching (such as courses, workshops, etc.); learning in school (such as peer coaching, critical friendships, mentoring, action research and task-related planning teams); and out-of-school learning (such as learning networks, visits to other schools, school-university partnerships, etc). On the other hand, Gaible & Burns (2005) cited in Hooker (2008:3) argue that teacher continuing professional development programmes can be divided into three broad categories; site-based, self-directed and standardized teacher continuing professional development. Looking at the categories of teacher professional development models proposed by the two authors, they are similar. Furthermore, based on the literature regarding models of professional development for teachers, the researcher is of the view that all approaches to teacher professional development fall under any of the three categories put forth by the two authors.

The discussion of these models will adopt the classification proposed by Gaible & Burns (2005) cited in Hooker (2008:2). In this classification, the continuing professional development models have been named as:

- Standardized teacher professional development;
- Site-based teacher professional development and
- Self-directed teacher professional development.

### 2.6.1 Standardized Teacher Professional Development Model

This model is usually referred to as the traditional teacher continuing professional development model or the training model. When teachers think of continuing professional development they

think of the standardized model because it is the most commonly used teacher continuing professional development model. This model is also commonly used in Botswana's education system. The training model is recognised across the world (Kelly & McDiarmid, 2002:15) and has been the leading form of teacher continuing professional development in recent years.

Standardized teacher continuing professional development is the most centralized approach, and best utilized to disseminate information and skills to a large number of teachers. It focuses on rapid dissemination of specific skills and content, often based on a top-down approach. The approach engages workshops and training sessions. Workshops, seminars, and conferences are considered to be the traditional approaches to continuing professional development (Boyle et al., 2005:4; Lee, 2005:40). The standardized models of teacher continuing professional development relies heavily on the training-based approaches, that is presenters share knowledge and skills with large groups of teachers face-to-face.

It is assumed that students benefit when teachers acquire competences and good teaching behaviour over their careers. The assumption is that teachers will change their thinking and adopt behaviours that lead to student achievement by being exposed to new information and approaches emerging from research and developments in the field of education. Research indicates that exposing teachers to this new information and strategies of teaching and learning through the standardized teacher continuing professional development (TCPD) approaches have minimum positive impact on teachers' practices. In this regard, Mewborn & Huberty (2004:4) argue that these approaches (workshops, seminars and conferences) proved to be ineffective since they do not sufficiently change teachers' content knowledge or pedagogical skills. In addition, Russell (2001:3) points out that continuing professional development has the potential to influence educator learning, but the truth is that there have been many wasteful workshops, conferences and seminars that led to little sustained transformation in the classrooms. This therefore justifies Mundry's (2005:14) suggestion that policy makers and education managers should "abandon outmoded approaches to staff development and invest in these more 'practice-based' approaches to continuing professional learning for teachers".

Furthermore, ineffectiveness of this model of teacher continuing professional development can be attributed to the fact that it lacks most of the characteristics of effective teacher continuing professional development. It does not foster coherence, nor actively engage teachers and it is usually short-term. Although traditional forms of teacher continuing professional development are quite common, they are widely criticized as being ineffective in providing teachers with sufficient time, activities, and content necessary for increasing teacher'' knowledge and fostering meaningful changes in their classroom practice (Loucks-Horsley et al., 2002:135). In addition, the training model is seen as detached from the classroom realities and aligned to mastering new and complex curriculum terminology rather than on the essence of the teaching-learning process. Robson (2002:289) asserts that the training approach may be too theoretical, may not have practical application in the classroom, may be based on the choice of the providers and may ignore the teacher's expertise.

However, regardless of its drawbacks, the standardized teacher continuing professional development model is acknowledged as an efficient means of introducing new knowledge (Hoban, 2002:213), even though it takes place in a de-contextualized setting. Furthermore, Loucks-Horsley et al. (1998:100) argues that when these training model approaches are built into a long-term continuing professional development plan with follow-up time regularly scheduled for discussion and reflection, or when they are designed as part of a larger continuing professional development plan that includes other types of activities such as curriculum modification or case discussion, they can have an impact on both teacher practice and student achievement. The arguments raised by the authors cited above point to the fact that the training model can be employed to effectively enhance the continuing professional growth of teachers. All it requires is for the planners of teacher continuing professional development programmes to ensure that the activity takes on board the characteristics of effective teacher continuing professional development.

The New Science syllabus has just been introduced in Botswana. Science teachers need to be given in-service training with regard to this new syllabus. The most appropriate model of teacher professional development in this regard is the standardized teacher professional development model because it can be employed with larger groups. For this model to be effective in assisting

teachers with the implementation of the new syllabus, it should have been designed as part of a review of the syllabus so that long-term professional development plans are incorporated in the design.

### 2.6.2 Self-Directed/Individual-guided Teacher Professional Development Model

Teacher continuing professional development acknowledges that effective continuing professional development would take place when teachers set their own learning agendas (Loucks-Horsley et al., 2002). This means that teachers should take responsibility for planning and pursuing activities they believe would promote their own learning. The key characteristic of this model is that the teacher designs the learning. The teacher comes up with his or her own goals and decides on the activities which will lead to the realization of these goals. According to Hall (1997:175) the assumption which underpins this model is that individuals are the best judges of their own learning needs and capable of self-direction and self-initiated learning. It also assumes that adults learn better when they initiate and plan their learning activities rather than spending their time on activities that are less relevant than those they would design themselves. The teacher continuing professional development is associated with approaches such as action research, journal writing, and case studies.

The major advantage of the self-directed activities is their flexibility and the prospects they offer for alternatives and individualization. Furthermore, individual-guide activities offer a good set-up for self-analysis, personal reflection and thoughtful decision making. Chui (2001:67) argues that teachers should be treated as professionals, and administrators should trust that their teachers have the knowledge and ability to be involved in their own continuous development rather than depend on outside experts to help solve their problems.

There are disadvantages which relate to this model of continuing professional development for teachers. If this model is applied school-wide it could be disjointed, expensive and haphazard. Also, it would be a difficult task to monitor a variety of continuing professional development activities that could take place in a school. They are time consuming, costly, lack social interaction and their outcomes can be unpredictable (Fullan, 1992:12).

Another setback of the self-directed model is that when teachers design their own learning, a lot of "re-inventing the wheel" takes place (Guskey & Sparks, 1991:75). The end product would not only be unpredictable but also differ in quality depending on the dedication of the participants. Schools are busy places and some are busier than others. This could mean that some schools have more time and money to devote to teacher continuing professional development than others.

This model of teacher continuing professional development does not embrace most of the characteristics of effective continuing professional development for teachers. The characteristics of effective teacher continuing professional development which this model embraces are long-term and promotion of active learning; others can feature in the activity only by design. One other aspect which is critical regarding this model is commitment of teachers to continuing professional growth because the teacher should initiate the whole process. The current challenges faced by teachers in Botswana, are that teachers might see this approach to their continuing professional growth as extra work added to their already over-loaded schedule.

### 2.6.3 Site-Based/Job-Embedded Model

The site-based training which more often than not takes place in schools, resource centres or teacher colleges, focuses on explicit situational problems that individual teachers come across as they try to apply new techniques in their classroom practice. Hord (1998) posits that continuing professional development under the job-embedded model is located within the school, programme or other local context as part of an effort to create ongoing professional communities. Continuing professional development activities linked with this model include group study, lesson study, coaching or inquiry groups. The aim of this site-based model of teacher continuing professional development is to develop teacher knowledge in content area, analyzing student thinking, and identifying how the knowledge can be applied to changes in instructional practices tailored to the local educational context (Smith & Gillespie, 2008:219). When teachers participate in this type of continuing professional development they work together over extended periods of time, bringing in and examining "artefacts of teaching" (Ball & Cohen, 1999:19). For example, teachers analyzing students' work in order to establish students' thinking and learning.

This model is rooted in the belief that students will gain when teachers are knowledgeable about their subject matter and about the problems students face in their learning (Smith & Gillespie, 2008). Research has established that students achieve more when teachers study students' work together and try new tactics to address teaching and learning problems. Sharing the challenges which teachers encounter in their classrooms and coming up with solutions to these challenges are important components of professional development for teachers. Smith & Gillespie (2008:219) further argue that the proponents of this model claim that continuing professional development cannot be viewed as an event that occurs on certain days in the school year but rather must be part of the daily work of teachers, administrators and other stakeholders in the system. Teachers acquire new knowledge everyday as they interact with their students and their colleagues. Teachers informally sharing with colleagues what transpired in their classroom, is an example of daily professional growth of teachers.

Some site-based models are the Coaching/Mentoring model, Lesson Study model and Group Study model. These models are discussed below.

#### 2.6.3.1 Lesson Study Model

The lesson study model originates from Japan. This is a structured process in which teachers plan, investigate, observe and revise research lessons. The purpose of embarking on these processes is to gain much deeper understanding of student learning related to instructional strategies and to work in a highly collaborative way with their colleagues (Steiner, 2004:45).

In lesson study, teachers convene in small groups to set goals and plan particular lessons together. They gather data from a variety of sources, including experts, as they initially design a lesson. After the lesson has been developed and completed one teacher from the group teaches the lesson while others are observing and taking detailed notes on the implementation. Then the teachers jointly discuss and analyze instructional discourse, student work and debate how the lesson progressed. After the evaluation, the group may decide to have another teacher lead it prior to another revision or write it up in a form that can be shared with others.

Lesson study focuses on the most important part of learning which indicates what really happens between the teachers and students in the classrooms. Therefore, lesson study has great potential as a continuing professional development activity. Working together as a team is critical for the success of the lesson study model. Loucks-Horsley et al. (2002:137) argue that one necessary pre-condition for success of lesson study is having a school culture that values and supports collaboration and that is comfortable with a long-term change strategy.

Research conducted with teachers who adopted this model as a teaching and learning strategy revealed that it enhanced their continuing professional growth. Studies of American teachers engaged in well designed lesson study at a particular site have documented several positive results. The results of the study showed that teachers exhibited increased subject matter knowledge, increased knowledge of instruction and increased capacity to observe students. They also took part in stronger collaborative networks and made stronger connections between their daily practice and their long-term goals (Perry et al., 2002:17).

However, there are challenges regarding implementation of lesson study. One of the frequent hindrances is the availability of time for collaboration (Coe et al, 2010:214).Teachers do not have time to come together either to plan and discuss the lesson before it is taught or even after it was delivered but these are very important for effective implementation of the lesson study model of teacher development. Another barrier for the implementation of lesson study is the reluctance of participants to open themselves up to critical peer analysis while teaching the research lesson (Stewart & Brendefur, 2005, cited in Coe et al., 2010:214). Teachers are challenged by being openly criticised by colleagues and openly accept criticism. It could be that teachers do not view criticism in the developmental perspective but as an attack on their professionalism that is, they are inadequate professionals. The greatest challenge of the successful implementation lesson study is the expectation that teachers adopt the behaviours of good researchers (Coe et al., 2010:214). A study conducted by Fernandez (2002:400) established that teachers lack basic research skills of posing rich researchable questions; designing a classroom experiment; specifying the types of evidence to be collected; and interpreting and generalising results. Teachers need to be assisted with acquisition of basic research skills for the successful implementation of lesson.

The lesson study model of teacher continuing professional development is site-based and it requires minimum outside support. Therefore, it could easily be implemented in our schools. Its successful implementation depends heavily on the commitment of the teachers as well as their spirit of working together. For people to work together harmoniously without conflict is a challenge in any organisation. This therefore challenges school leadership to create a work environment which is conducive for teachers to work together harmoniously.

### 2.6.3.2 Study Groups

The study group model of continuing professional development has been described by Steiner (2004:45) as involving groups of teachers from the same discipline, school, or district meeting regularly over a significant period of time to explore some topic of mutual interest related to teaching and learning. Loucks-Horsley et al. (1998:88) posit that the key elements for this model are that the topic is important to the participating teachers, that the teachers have time to meet on an on-going basis, and that the teachers have a process to address the topic raised.

The study groups are structured into four models:

- The implementation model; this is designed to help teachers implement strategies they have learned in a workshop or other short-term training session.
- The institutionalization model; which is used when teachers want to further refine and reflect on practices they have just started using.
- Research and sharing groups; focus on recent research findings and how they may be implemented in the classroom.
- Investigation study groups; allow teachers to investigate new strategies, try them out in the classroom and discuss implementation with their colleagues. (Loucks-Horsley et al., 2002:140).

It can be concluded that the main purposes of the study groups are to assist in the implementation of the curriculum and instructional innovations, collaboratively plan school development efforts and study research on teaching and learning.

There are a number of useful guides that explain how to form and put into practice study groups but there is no well-built research base documenting their effectiveness (Steiner, 2004). Several studies exist that document positive results at individual schools (Louks-Horsley et al., 1998:101)

#### 2.6.3.3 Coaching/Mentoring Model

Coaching is a process in which two or more teachers work together to improve their practice. The coaching/mentoring model covers an array of continuing professional development practices which are based on a variety of philosophical principles. Nonetheless, the major characteristic of this model is the significance of the one-to-one relationship, generally between two teachers, which is intended to support professional development. This characteristic is shared by both coaching and mentoring. Most attempts made to distinguish between the two suggest that coaching is more skills based and the mentoring involves an element of 'counselling' and professional friendship (Rhodes & Beneicke, 2002:131). Mentoring often implies a relationship where one partner is a novice and the other more experienced.

Svesson (1997:63) explains that the mentoring model typically involves pairing an experienced and highly successful educator with a less experienced colleague. Regular opportunities are then provided for discussion of professional goals, the sharing of ideas and strategies on effective practice, reflection on current methods, on-the-job observations, and tactics for improvement. Key to the mentoring/coaching model, however, is the view that continuing professional learning can take place within the school situation and can be improved by sharing dialogue with colleagues.

The novice/experienced teacher model is similar to apprenticeship, where the experienced teacher initiates the novice into the profession. This initiation, although including support for the novice in gaining and using suitable skills and knowledge, also puts across a message to the new teacher about the social and cultural norms with the institution. But if the coaching/mentoring model involves a more equitable relationship, it allows for the two teachers involved to discuss possibilities, beliefs and hopes, in a less hierarchically threatening manner. Depending on the

matching of those involved in the coaching/mentoring relationship, this model can support either a transmission view of professional development, where teachers are initiated into the status quo by their more experienced colleagues, or transformative view where the relationship provides a supportive but challenging forum for both intellectual and effective interrogation of practice.

In spite of the primary purpose of the coaching/mentoring model as equally supportive and challenging, or hierarchical and assessment driven, the quality of the interpersonal relationship is critical. Rhodes & Beneicke (2002:125) argue that in order for the coaching/mentoring model of professional development to be successful, participants must have well-developed interpersonal communication skills. In order to be successful, coaches need to have a good working relationship; they need some skill in communication and observation; and they need time to develop an understanding of each other's strengths and try out new practices.

#### 2.6.3.4 Peer Observation

Learning happens in a social context. Hence, peer observation should prove useful in helping teachers to develop a deeper knowledge about teaching strategies. Kaufman (1996:45) argues that teamwork should be employed when training teachers because it enhances their learning as well as contributing to the learning of others. Sparks (1986:220) established that peer observation of teaching considerably enhanced teaching performance in three ways. First, peer observation helped to improve confidence and ushered in a sense of working together. Secondly, evaluation of others may have helped teachers to see their mistakes and thirdly, teachers were able to receive new ideas from watching others in the classroom.

The opportunity to observe other teachers and to be observed has long been acknowledged as a beneficial process, and observation is seen as an integral part of coaching and sustained learning (Joyce & Showers, 2002:105). Furthermore, the process of observation and feedback facilitates discussion and exchange of practical and relevant ideas, which many teachers report as being crucial to the fruitfulness of the continuing professional development experience (Armour & Yelling, 2004:80). This model of professional development fosters reciprocal learning in a safe non-judgmental environment. Eraut (2001:97) proposes that peer observations provide a

supportive, blame-free environment that encourage and facilitate professional dialogue and provide opportunities to extend and experiment with new practice.

It is clear from the discussion of the site-based model of professional development of teachers that it is most effective when it is based on the teachers' needs and it is a continuous process which includes formal, systematic and suitably planned development and follow-up through supportive observation and feedback, staff dialogue and peer coaching (Bernauer, 2002:89; Lee, 2005:47; Bolam, 2003:103).

Table 2.3 summarises the correlation between components of professional development and the impact on work performance of teachers (Rhodes & Houghton-Hill, 2000:432). Any continuing professional development programme is restricted to the level of superficial if it does not put theory into practice. It should be noted that high transfer of knowledge and skills is realized when coaching is included in the equation (Rhodes & Houghton-Hill, 2000:431).

**Table 2.3: The relationship between components of training and impact on educators' performance**

| **Training components and combinations** | **Impact on teachers' job performance** | | |
|---|---|---|---|
| | **Knowledge** | **Skills** | **Transfer** |
| Theory | Low | Low | Nil |
| Theory and demonstration | Medium | Medium | Nil |
| Theory, demonstration & practice | High | Medium | Nil |
| Theory, demonstration, practice & feedback | High | Medium | Low |
| Theory, demonstration, practice, feedback & coaching | High | High | High |

(Rhodes & Houghton-Hill, 2000:432)

The site-based/job-embedded model of continuing professional development of teachers resonates with the two theories of learning (i.e constructivism and adult learning) underpinning this study. Constructivist theory hypothesizes that learning is a process by which people construct meaning using their prior knowledge (Merriam et al., 2007 cited in Estepp et al.,

2012:80). Knowles (1968:351) defines andragogy as "the art and science of helping adults as learners"...based on certain crucial assumptions about the difference between children and adults learners. One of the assumptions about adult learners described by Knowles (1984) is that adult learners have an accumulation of life experiences. They need to connect learning to a knowledge/experience base.

The two learning theories advocate the engagement of teachers' prior knowledge/experience in their development. The relevance of teachers' prior knowledge in continuing professional development is highlighted by Robinson & Carrington (2002:240) when they posit that continuing professional learning should present a range of opportunities for teachers to construct their own meaning and theories in collaborative setting. Continuing professional development has to be individualised to the extent that it builds on each teacher's experience and expertise while also providing the basic knowledge that developing professionals require to succeed (Partee & Sammon, 2001:15).The teacher learner is a person with a sense of self, bringing all previous life experiences, both professional and personal, to bear on new learning. Past experiences affect what the learner learns and are the foundation of current learning. Adults learn best when new learning are demonstrably tied to or build upon past experiences (Evans, 2010:21-22).

The engagement of a teacher's prior knowledge/experience in their development can easily be actualized in the site-based/job-embedded continuing professional development model because it engages approaches such as lesson study, group study, and peer observation. These approaches are teacher driven therefore they avail opportunities for teachers to engage their experience in their continuing professional development. Continuing professional development under the job-embedded model is situated within the school programme or local context as part of an endeavour to build ongoing professional development communities (Hord, 1998 cited in Smith & Gillespie, 2008:219). In addition, Smith & Gillespie (2008:219) argue that continuing professional development cannot be perceived as an event that happens on particular days in a school calendar year but instead it must be part of the daily work of teachers, administrators, and other stakeholders.

The site-based models of continuing professional development not only blend with the two theories of learning underpinning this study but also exhibit the characteristics of effective continuing professional development. The job-embedded model of continuing professional development is ongoing, entrenched within the context-specific needs of a particular setting and grounded in the collaborative approach to learning. Furthermore, it is driven primarily by the needs and interests of the participants themselves. An example of a job-embedded model of continuing professional teacher development is Lesson study. A Lesson Study is a structured process in which a small group of teachers plan a lesson together, develop it, and then one of them presents the lesson while others observe and take notes on the implementation. The group then jointly discuss and analyse instructional discourse and debate how the lesson progressed. Basically all the characteristics of effective continuing professional development are incorporated in the Lesson Study approach to continuing professional development of teachers.

Given the number of models discussed in the literature, and multiple possible combinations, those interested in promoting, designing and implementing teacher continuing professional development undoubtedly have a wide range of options and opportunities. It is of vital importance, however, to pay attention to the characteristics of the context in which these professional development models will be put into practice, as well as other factors that may support these efforts. Some of these factors will be examined below. What is noted is that the merit of any particular professional development activity is largely dependent on its design. Several types of professional growth experiences can be effective if they are designed to incorporate researched-based features and aligned with the user's goals and context (Steiner, 2004:48).

## 2.7 FACTORS INFLUENCING CPD OF TEACHERS

There are a number of factors that influence continuing professional development of teachers. The literature reviewed identified the following as major aspects:

- Teacher commitment;
- School leadership;
- Collaboration;
- School culture;

- Time; and
- Financial resources.

### 2.7.1 Teacher Commitment

The teacher's motivation is the most important factor that influences continuing professional development of a teacher. According to Komba & Nkumbi (2008:71), a teacher's intrinsic drive towards self-improvement cannot be matched with any amount of pressure from educational managers. The teacher should see and accept the need to develop professionally. If a teacher views professional development positively he/she makes every effort to attain new knowledge, skills, attitudes, values and disposition.

A continuing professional development program will be futile without the teachers' whole-hearted commitment, even if such programmes are well-designed (Blackmore 2000:2). Van Eekelen et al. (2006:410) argue that commitment to learning refers to a psychological state in which the teacher desires to learn and experiment. Commitment is an essential component for the determination of the effectiveness of continuing professional development program. Even though teachers generally support effective teaching and learning, they are often unwilling to change their teaching practices on the basis of quality standards (Desimone et al., 2006:179). Commitment and motivation of teachers to grow professionally depend on the influence and support of school leadership and school culture.

### 2.7.2 School Leadership

Quality continuing professional development programmes usually begin with the instructional leaders. One of the key roles of instructional leaders is providing opportunities for continuing professional development of teachers. Quality leadership is a requirement for effective continuing professional development in schools (Bernauer, 2002:89). Quality leadership presents an orderly and nurturing environment that supports teachers and stimulates their efforts (Bernauer, 2002:90). One of the skills linked with a successful leader is to motivate people to work more efficiently and attain ownership (Mahoney, 1998:98).

Support by school management is fundamental for promoting teacher development and high quality education. If school managers are empowered they will be able to play their social and technical roles more efficiently (Mosha, 2004:49). The capacity of school management is the ability of the leadership to carry out its duties including supporting continuing professional development of teachers at school level. The ability of the school management to execute its duties depends upon the skills of the school head and the culture of the school.

The school head is the key player or backbone of the school. The overall effectiveness of the school is directly influenced by the school head. Her/his roles include to facilitate, broker, provide resources, encourage, command, question, coach, and cheerleading (Dillon-Peterson 1986:12). Rowland & Adams (1999:35) are of the view that the school head should be committed to develop teachers and therefore should be able to design continuing professional development activities for teachers. The school head is the heart of the school and school management.

### 2.7.3 Collaboration

Another key factor for effective continuing professional development is teacher collaboration and support (Richardson, 2003:401; Brandt, 2003:10; Rhodes & Houghton-Hill, 2000:431). The challenge of teacher collaboration is that teachers do not have time to work together and also there is spirit of individualism amongst teachers. The limited time available for interaction within schools and the traditional culture of teacher isolation have not encouraged teachers to cooperate as colleagues (Trent, 1997:108).

Effective continuing professional development should offer prospects for teachers to dialogue their successes and challenges in engaging new teaching strategies (Robinson & Carrington, 2002:240; Bernauer, 2002:90).The benefit of teacher collaboration is that it contributes towards the growth of a positive school culture that is devoted to change and the establishment of better learning opportunities (Robinson & Carrington, 2002:240; Rhodes & Houghton-Hill, 2000:431).

### 2.7.4 Time

Teachers need time both to make continuing professional development an ongoing part of their work on a daily basis (Bush, 1999:62) and to see the results of their efforts (Dorph & Holtz, 2000:71). The National Staff Development Council (NSDC) Board has determined that the adequate time for staff learning and collaborative work should be 20% of an educator's week (Solomon & Morocco, 1999:262). The depth of knowledge and practice expected of a teacher has increased over the past years. As a result, teachers, researchers and policy-makers consistently indicate the greatest challenge to implement effective continuing professional development, is lack of time (Abdal-Haqq, 1996:1). This seems to be the case in a number of countries especially developing countries, where most schools do not allow enough time for continuing professional development. Botswana is a developing country whose education system does not allow sufficient time for teacher development in its schools. Nevertheless, in other countries such as Germany, China and Japan, teachers do have a significant amount of time to engage in their continuing professional development programmes. In these countries, teachers teach fewer classes and spend an average of 30 to 40% of their day out of the classroom conferring with students and colleagues on other professional activities (Darling-Hammond, 1996:6).

In addition to making time to participate in specific activities, teachers also need a time of 'mental space' for their continuing professional development. In fact the results have shown that the more time given to teachers for planning, discussions and other professional development activities, the more effectively the teachers teach and, as a result, the more students learn (Darling-Hammond, 1999:34).

Different views have been raised regarding the provision of time for continuing professional development. Shelton & Jones (1996:99) argue that time for professional development should be found after school hours. They established that training at the end of the school day was demonstrated to be of use for follow-up sessions to focus on special topics. These findings are in contrast to those by Washington (1993:252) which show that teachers desire to have workshops during school hours. Furthermore, Washington (1993:253) established that after school hours,

weekends and holidays were perceived as the least favoured times to offer continuing professional development programmes. These respondents were of the view that teachers' personal times should be respected (Washington, 1993:253). In Botswana, the unfavoured time slots established by Washington are commonly used to offer continuing professional development programmes.

### 2.7.5 Financial Resources

Planning and implementation of continuing professional development implies the availability of the funds needed. Inadequate funds for teacher development programmes can adversely affect continuing professional development of teachers and, by extension, quality teaching and learning in schools. Different sources may provide funds to support professional development of teachers. The sources include amongst others, educational authorities, outside agencies and schools. However, funding of continuing professional development of teachers is low in many countries, as it is one of the first items to be removed from school budgets when resources are scarce. Nevertheless, schools have been creative in dealing with this challenge. A successful case is reported by Applewhite (1999:52) of a high school in Colorado which created a Continuing Professional Development Fund through the initiative of a group of teachers. In the context of Botswana's education system, much of the money which funds teacher continuing professional development programmes is sourced from the Ministry of Education & Skills Development. The researcher is of the view that it is high time that the education authorities engage all stakeholders in funding of teacher continuing professional development programmes, more so now that government is financially challenged because of economic recession. Stakeholders who the researcher is make reference to is private sector and encouraging schools to raise funds for teacher development programmes.

### 2.7.6 School Culture

A Learning Organisation is a group of people who continually enhance their capacity to create what they want to create (Senge, 1992:201). Therefore, a school is a learning organisation

because it is a group of people who are continuously enhancing their abilities to be better teachers or what they want to be in life.

To enhance teachers' continuous growth in the learning organisation, a supportive environment in the school is to be evident. A study by Yu et al. (2000:370) highlights that the school culture, teacher collaboration and the school environment, as mediating variables may affect teacher commitment to development and therefore adds to effective professional development. Senge (1992:201) states that the supportive environment for professional learning is one of the major characteristics of the school culture as a learning organisation.

Culture is the way we do things and relate to each other (Hargreaves & Fullan, 1992:151). Some schools have a culture that adds to feelings of overwork and strengthening and others have the effect of reducing these feelings. According to Richardson (2001:148), school culture is the accumulation of many individuals, values and norms. It reaches consensus about what is important. It therefore includes the group's expectations and not only the expectation of the individual. School culture refers to the shared norms, values, beliefs and assumptions shared by role players of an organisation that shape decision-making and practice (Yu et al., 2000:370).
The main ingredient for successful continuing professional development is a positive school culture. The school should be humane and professionally supportive by providing teachers with resources when in need and support opportunities to work together and learn from each other. A school management with a motivating culture encourages teachers to engage in professional development programmes at school or elsewhere. A motivated teacher learns from others and is more likely to attend various professional development activities (Komba & Nkumbi, 2008:72). Collaborating teachers utilize strengths and complement each other's knowledge and skills. This creates more effective teaching and ownership of their professional learning.

### 2.7.7 Reflection on Field Experience

Reflection on field experience is a critical component in teachers' professional development. Gore (1987:35) understands reflection as an important factor in the continued growth of teachers as a means of developing open-mindedness to looking at new ways of teaching. In support of this

view, Osterman & Kottkamp (2004:100) argue that reflection is a means by which practitioners can develop a greater level of self-awareness about the nature and impact of their performance, an awareness that creates opportunities for professional growth and development.

It is through reflection that teachers can develop an understanding why certain teaching methods work and others do not work in their teaching environment. Teachers should be reflective practitioners for them to develop professionally. With regard to this view, Kirk (1987:153) asserts that commitment to self-evaluation clearly entails a commitment to professional development since there is no point in subjecting ongoing practice to critical scrutiny unless it is intended to take appropriate action in the light of that scrutiny. Self-evaluation and professional development in a sense are inseparable. Teachers' willingness to know themselves, their skills gaps and strengths can either hinder or facilitate their professional growth.

### 2.7.8 Policies and programmes of authorities

This is another factor which has an influence on the implementation of continuing professional teacher development programmes. Schools are strongly influenced by the changing of control patterns, enrolment fluctuations and policy directives from education departments.

## 2.8 BARRIERS TO EFFECTIVE TEACHER PROFESSIONAL DEVELOPMENT PRACTICES

Continuing professional development of teachers aims to improve the performance of teachers in the classroom and elevate student attainment. It is an ongoing process of improving knowledge, skills and attitudes centred on the local context and especially classroom practice. According to Ntapo (2009:54), the following are some of the factors that could be barriers for effective continuing professional development of teachers:

- Inadequate funds are available to support the available courses;
- Teacher continuing professional development opportunities are frequently available to only a small number of teachers;

- Insufficient and inappropriate follow-up procedures are used to determine the relevance and productivity of the teacher continuing professional development training programmes;
- Currently, teacher continuing professional development activities take place at venues far from the schools.
- Teacher continuing professional development has rarely taken place in schools or classrooms, and even more rarely occurred concurrently with learner learning. For many, the best opportunities are those held off-site at a convenient and comfortable location, far from the distraction of learners;
- Action research as a tool to improve good quality practice is often not considered in the selection and design of the course content of teacher continuing professional development activities. That being the case, they rarely address individual needs and concerns;
- Most of the teachers continuing professional development activities are characterized by minimal or infrequent follow-up. As a result, no feedback is provided to practicing teachers. Effective teacher continuing professional development requires sustained monitoring and evaluation; and
- The majority of programmes involve teachers from many different schools and/or school districts, but there is no recognition of the differential impact of positive and negative factors within the system to which they must return. The aims of training a large number of teachers in the shortest possible time are probably incompatible with the aim of producing and supporting innovative teachers equipped to act as change agents

Bredeson (2003:89) identifies specific barriers which relate to particular dimension of continuing professional development such as design, delivery, content, context and outcomes. These barriers are shown in Table 2:4.

**Table 2.4**

Continuing Professional Development Dimensions and Barriers

| Dimensions | Barriers | Strategies |
|---|---|---|
| **Design** | Individualist | Systems thinking |
| | Opportunistic | Linking learning goals and innovations |
| | Not linked to school goals | Integrating professional development plan |
| **Delivery** | Episodic and fragmented | Explicit criteria for selecting activities |
| | No follow-up | Systematic processes for sharing new |
| | Costly | knowledge |
| | Passive participation | Flexible, creative use of resources |
| **Content** | Fragmented and incoherent | Explicitly links needs and goals of |
| | Quick nuggets of knowledge | school/individual |
| | Insufficient theoretical support | Follow-up strategies to deepen learning, reflection, and feedback |
| **Context** | Inadequate resources | Multiple strategies to create time and generate |
| | Lack of support structures | resources |
| | Negative cultures | Internal plan to create structures and culture to |
| | Daily demands of school | support learning |
| **Outcomes** | Poor assessments of learning | Systematic evaluation of all aspects of |
| | Lack of feedback | professional development |
| | Inadequate cost/benefit analyses | Link assessments to plans and goals |

(Adapted from Bredeson, 2003:89)

It is apparent from the aforementioned list of factors that provision of resources, encompassing, inter alia, financial, a human or time resource is a foundation of the challenges that could lead to failure. For example, teacher continuing professional development is readily put out of place as a priority area if there is insufficient funding for the provision of basic education. In Botswana, further training of teachers was put on hold due to the recession. Day & Sachs (2004:170) assert that opportunities for in-service training for teachers and tutors arise only as a means of orienting them to a new syllabus or curriculum.

It is also evident that when teacher continuing professional development is not properly implemented, there is a likelihood that teachers do not benefit as much as they should. This would then not serve its intended function. In the Botswana situation, induction workshops and any other form of in-service training sessions are irregular and do not bring effective change in the education system. These barriers are familiar to the implementation of curriculum changes.

Geography teachers surveyed in Slovenia showed particular passiveness in their search for possibilities for continuing professional development. In other words, these teachers were not keen to engage themselves in any continuing professional development activity. The obstacles the teachers cited included unsupportive attitudes in the school management, low financial support, travelling distance to the seminars, and inappropriate timing (Kolnik, 2010:57).

On the other hand, research by King (2004:3) on continuing professional development in higher education revealed the following barriers to undertaking continuing professional development; time, funding, emphasis on research, lack of personal interest, and lack of encouragement. Of all these barriers, the research revealed that most of the respondents were of the view that time is the major barrier.

## 2.9 TEACHER DEVELOPMENT: THE CASE OF BOTSWANA

Ministry of Education and Skills Development recognizes the importance of professional development of teachers. This is highlighted in the Revised National Policy of Education (RNPE) of 1994 which is the driving principle of Botswana's education system. Several recommendations from the RNPE have underscored the need to adequately prepare teachers to address the growing demand for quality education. Furthermore, the establishment of the Department of Teacher Training and Development, in the Ministry of Education and Skills Development, which is charged with the responsibility of training and development of teachers, signifies the importance of professional development of teachers in Botswana's education system. Organisation and Methods Review report states that the overall objective of the Department of Teacher Training and Development is to improve the quality of Primary and Secondary education through developing and implementing pre-service and in-service education

for teachers (Botswana Government, 1992:5). The Department of Teacher Training and Development is composed of two units; a pre-service unit and an in-service unit.

### 2.9.1 Pre-service Training of Teachers

The responsibility for the pre-service training of secondary school teachers in Botswana lies with the Faculty of Education in the University of Botswana and three (3) Colleges of Education. The Colleges of Education train teachers up to diploma level and all of them will teach in Junior Secondary Schools. On the other hand, the university trains teachers up to degree level and these teach in senior secondary schools.

### 2.9.2 In-service Training of Teachers

The In-service Unit in the Department of Teacher Training and Development (TT&D) is charged with the responsibility for in-service education of all teachers in primary and secondary education.

The primary objectives of the In-service Unit are:

- To provide guidance and support to schools to enable them to implement the curriculum effectively;
- To develop training programmes which will foster the professional development of all teachers in order to make them more effective classroom practitioners;
- To promote autonomous school-based staff development;
- To identify the needs of schools, teachers and students, and be responsive and sensitive to their requirements and difficulties; and
- To sensitize schools to new developments in education and systematically monitor and support them (Botswana Government, 1998:1).

In order to realize these objectives, the in-service team supports improvement in the quality of teaching and management throughout the system with workshops on a wide range of topics,

classroom demonstrations, collaborations with teachers, school and cluster based training sessions and other professional development initiatives (Botswana Government, 1998:2).

One of the roles of In-service Education Officers is to link up with staff development coordinators and school management teams in identifying the training needs of schools or individual teachers. These officers are paramount in the continuing professional development of teachers. Their lack of action can be a barrier to professional growth of teachers and to the provision of quality education in Botswana.

At school level, the school head is tasked with the responsibility of ensuring continuing professional development of teachers within his or her school in collaboration with Regional In-service Office. The Staff Development Coordinator assists the school head to realize this role.
The existence of the In-service Unit of the Department of Teacher Training and Development and its clearly laid out operational structures, demonstrates the significance of professional development in Botswana's education system. However, available literature of teacher education in Botswana indicates that there is no National Policy Framework on In-service Teacher Development. The primary purpose of the national policy framework is to guide the delivery of continuing professional development of teachers. The absence of such a policy leads to uncoordinated and uncommon approaches towards in-service education provision culminating in duplication of efforts by various stakeholders.

An example of such a policy is the South African National Policy Framework for Teacher Education and Development of 2006. The policy framework of South Africa focuses on two complementary subsystems, that is, initial professional education of teachers and continuing professional development of teachers (South Africa, 2006:2). The policy framework identifies four types of continuing professional development of teacher activities: school-driven activities, employer-driven activities, qualification-driven activities and others offered by approved organisations (South Africa, 2006:17).

Furthermore, reviewed literature of teacher education in Botswana does not highlight any particular model of teacher continuing professional development which Junior Secondary

Schools should adopt. Teacher continuing professional development programme of activities are grouped into three models; sited based, self-directed and standardised (Hooker, 2008:3). A practical example of teacher continuing professional development model is The Iowa Professional Development Model (see figure 4.3, page 156). This model (Iowa Professional Development Model) of continuing professional development is applied in USA by Iowa Department of Education. An absence of a specific model which Junior Secondary Schools should adopt is a gap in teacher education in Botswana which the outcomes of this study intend to address.

This study focused on the following aims:

- To establish if there are programmes that facilitate continuing professional development of teachers in Junior Secondary Schools.
- To investigate factors that impedes continuing professional development of teachers in Junior Secondary Schools.
- Based on the outcomes of the investigation, it proposes an effective model for continuing professional development of teachers in Northern Botswana.

Ongoing professional development is indispensable if quality education is to be provided to learners (Louw, 1992:1). When elaborating on this view DuFour & Berkey (1995:5) argue that thriving organisations of the twenty-first century will be learning organisations that build continuous learning into jobs at all level. No pre-service training programme can effectively prepare people for a lifetime in organisations. Furthermore, the knowledge and skills of teachers diminish with time. It is clear that all teachers need to be regularly if not continually involved in quality developmental programmes, not necessarily qualifications, for improvement of learner performance.

One of the challenges of a continuing professional development programme of teachers is that they impress texts on teachers that distance them from their own circumstances. Botswana's teacher continuing professional development programme is no exception to this challenge. Steyn & van Niekerk (2005:128) highlight this challenge when they argue that many teachers' inability to reflect critically on their own practice and try out new solution to problems they encounter daily, necessitates continuing professional development. Teachers' inability to reflect critically

on their own practice could be attributed to continuing developmental programmes they undergo. Continuing professional development programmes should make it possible for teachers to develop their own texts that link with their situation. This necessity means that it is essential to revisit teacher continuing professional development programmes so as to establish factors that will hinder or influence their appropriateness and effectiveness. Knowledge of such factors has the potential to inform and influence policy and practice.

The National Policy Framework for Teacher Development is very important component for the provision of quality education in all education systems the world over. The purpose of such a policy is to bring clarity and coherence to the complex but vital matrix of teacher education activities, from early recruitment as a student teacher, all the way through the professional career of a teacher. Lack of such a policy in Botswana's education as earlier revealed poses a big challenge for the provision of quality teaching and learning in schools. The establishment of factors that hinder or influence appropriateness of teacher continuing professional development programmes in junior secondary schools in northern Botswana will inform the formulation of National Policy Framework on Teacher continuing professional development of Botswana. Furthermore, knowledge of such factors will influence practice by proposing a teacher continuing professional development model that junior secondary schools in northern Botswana can adopt.

## 2.10 SUMMARY

Professional development helps to enhance the status of teachers by empowering them to become campaigners for the teaching profession as well as becoming eloquent about their profession. The above discussion of teacher professional development revealed that there is no single way to provide teacher professional development. Apparently, the quality of the nations' schools is highly dependent on the quality of the nation's teachers. Differences in teachers' ability can adversely affect the quality of teaching and learning. The quality of education is heavily dependent on the quality of staff, their motivation and the leadership they experience. This implies that the quality of teaching depends on the value of teachers which, in turn depends

to some extent, on the worth of their professional development. Globally, quality education has been a major concern for many years. To address this concern, many reform initiatives have focused on the quality of classroom teaching and more specifically, on the teacher as the key to improving performance (Desimore et al., 2006:178).

It is important that teacher professional development is well-coordinated and focused for it to benefit both the teacher and the system. To support professional development initiatives, time and resources need to be considered carefully so that the teacher's professional development can be effective. Ongoing professional development of teachers calls for a change in the education system. This can be done through supporting teachers' needs and giving them incentives to motivate them. It's critical that the incentives are not viewed as the key driver to professional development.

One of the tasks for professional development is to make possible the development of teachers' ability to engage in critical reflection. Professional development cannot be seen as being an event or periodic action/ activity to address system-wide training needs and fail to provide sufficient time to plan, learn and reflect on new strategies and practices grounded in the context and content of the reality of teachers' classrooms (Ntapo, 2009:56).

The literature revealed that there is an agreement among scholars the world over about the significance of the teacher and his/her proficiency in the teaching and-learning process. The teacher is the heart of classroom instruction (Galabawa, 2001:10). The effectiveness of the teacher depends on her capability (academically and pedagogically) and efficiency, (ability, work load, and commitment), teaching and learning resources and methods: support from education managers and supervisors (Mosha, 2004:64; Rogan, 2004:165). Continuing professional development provide prospects for teachers to explore new roles, develop new instructional techniques, refine their practice and broaden themselves both as educators and as individuals.

The study of the literature related to continuing professional development of teachers covered a wide range. The study reviewed literature on the theoretical framework of the study, the concept

of professional development, models of professional development and barriers to continuing professional development.

The constructivist and adult learning theories underpinned the study. These two theories advocate for learner-centred and collaborative learning approaches. In relation to continuing professional development of teachers, the two learning theories promote teacher development programmes which are collaborative and participant driven. This view is supported by Shanker (1996:223), who proposes that, for professional development to be of use, it must present serious intellectual content, take explicit account of the various contexts of teaching and experiences of teachers, should be ongoing and rooted in the purposes and practices of schooling, and engage teachers in defining the purposes and activities that take place in the name of professional development. In other words, effective teacher development programmes are those which engage teachers in their design and implementation as well as promoting teacher collaboration.

Reviewed Literature revealed that there are three broad categories of teacher development models. The three models are; sited-based/job-embedded, standardised and self-directed/individualised model. As earlier indicated that the two theories underpinning this study promote learner-centred and collaborative learning approaches, the site-based model aligns itself with these two approaches of learning. This model of teacher development upholds activity participation of teachers and collaboration of teachers in their professional growth. Examples of professional development activities associated with this model include lesson study, group study, and coaching.

It surfaced from the reviewed literature that there are factors that impede professional development of teachers. Some of the barriers highlighted by literature include ; time constraints; insufficient funding; lack of support by school leadership; lack of ownership by teachers in professional development activities; lack of structures in schools that support teacher professional development initiatives; lack of personal interest, and lack of official policy that guides schools on provision of school- based professional development programmes (Boaduo, 2010:77). Some of these impediments of continuing professional development of teachers linked to the two theories underpinning this study. The two theories endorse learner-centred and teacher collaboration approaches to professional growth of teachers. Lack of ownership by teachers in

professional development initiatives acts as a barrier to their development which indicates that teachers are passive recipients of teacher development programmes.

# CHAPTER THREE

# RESEARCH DESIGN AND METHODOLOGY

## 3.1 INTRODUCTION

This chapter focuses on the research methodology that was used in the pragmatic investigation. It follows after a detailed review of related literature on the continuing professional development of teachers. The reviewed literature focused on both the international and the Botswana perspective.

The chapter discusses the methodology that was used in this study, and it presents the appropriateness of the engagement of both qualitative and quantitative research approaches within the context of this study. The introduction of the chapter is followed by a comprehensive account of the methodology preferred in this thesis and the methods which are used to carry out the research. A description of the research design, the methods of data collection and its analysis are advanced. The chapter ends with a presentation of issues of credibility and dependability.

The research was conducted as an attempt to address the problem statement that suggested that there are barriers to continuing professional development of teachers, and to establish the availability of structures in schools that facilitate staff development in Junior Secondary Schools. Consequent to the problem statement, the study aimed to answer the following research questions:

- Are there any programmes that facilitate continuing professional development of teachers in Junior Secondary Schools?
- What factors impede continuing professional development of teachers in Junior Secondary Schools?
- Based on the outcomes of the findings, what model can be proposed for the effective professional development of teachers in Botswana?

To answer the study questions, a number of research approaches were studied and engaged. What follows is the discussion of the approaches.

## 3.2 RESEARCH PARADIGMS

The aim of this research is to investigate factors that impede and structures that facilitate continuing professional development of teachers in Junior Secondary Schools. Research is an activity of finding information about something that one is concerned about. This view is shared by Mertens (2005:29), who argues that research is an investigation whereby data are collected, analyzed and interpreted in some way in an attempt to understand, describe, predict or control an educational or psychological phenomenon or to empower individuals in such context. Mertens (2005) further asserts that the definition of research is influenced by the researcher's theoretical framework. The way knowledge is studied and interpreted in research is influenced by theoretical framework which sometimes is referred to as a paradigm (Bogdan & Biklen, 1998:22). The choice for the paradigm sets the intent, motivation and expectations for the research (Mackenzie & Knipe, 2006:194).Therefore a paradigm is a very important component of research. Mackenzie & Knipe (2006:194) signifies the importance of research paradigm when they asserts that without nominating a paradigm as the first step, there is no basis for subsequent choices regarding methodology, methods, literature or research design.

### 3.2.1 What is a paradigm?

A paradigm describes how people think research should be carried out because it is a process of scientific practice based on their philosophies and assumptions. The term paradigm may be defined as a set of assumptions about a social world, and about what constitute proper techniques and topics for inquiring into that world (Punch, 2009:358) or a perspective about a research held by a community of researchers that is based on a set of shared assumptions, concepts, values and practices (Johnson & Christensen, 2008:33). Moreover, Chilisa and Preece (2005:21) provided a definition of paradigm which shows how research can be influenced and be directed by a particular paradigm by asserting that a paradigm is a theoretical orientation that informs the choice of the research problem to be investigated, the framing of the research objectives,

research design, and the instruments for collecting data, data analysis and reporting of the research findings. Briefly, a paradigm is a worldwide view or perspective of something. The three commonly agreed worldviews are positivism, interpretivism/constructivism and the pragmatism. These worldviews will be briefly discussed and an appropriate paradigm will be adopted to guide the study. Researchers and scholars employ various paradigms to guide them through the course of knowledge seeking (Kim, 2003:9)

#### 3.2.1.1 Positivism

The key view of positivism is that the world and reality exist on the outside of the researcher and its properties should be measured through objective measures, rather than inferred subjectively through feeling, reflection or perception. In the positivist paradigm, the object of study is independent of researchers; knowledge is discovered and verified through direct observations or measurements of phenomenon; facts are established by taking apart a phenomenon to examine its component parts (Krauss, 2005:759). This view is shared by O'Leary (2004:5) who proposes that positivists aim to test a theory or describe an experience through observation and measurement in order to predict and control forces that surround us. This view accepts as true that reality is external and objective, and knowledge is only important if it is based on observations of this external reality. Positivist research is most commonly aligned with the quantitative methods of data collection and analysis of results (Mackenzie & Knipe, 2006:195). The positivist paradigm usually adopts the quantitative approach and is based on the deductive process.

#### 3.2.1.2 Interpretivism

Interpretivism is a view that believes that the world and reality are not objective and exterior to the researcher, but are socially constructed and given meaning by people. According to Mertens (2005:12), interpretivists believe that reality is socially constructed. The view tends to rely upon the participants' views of the situation being studied and recognises the impact on the research of their background and experience (Creswell, 2003:9). Furthermore, Cole (2006:26) asserts that the interpretive paradigm is associated more with methodological approaches that provide an

opportunity for the voice, concerns and practices of research participants to be heard. In other words, interpretive philosophy emphasises understanding and explanation why people have diverse understandings instead of searching for external sources and essential laws to explain behaviour. People's actions should be seen to happen from the sense that they make from the situation they encounter than as a direct response to external stimuli. The interpretivist researcher is most likely to rely on the qualitative data collection methods and analysis or a combination of both qualitative and quantitative methods (mixed methods) (Macknezie & Knipe, 2006:195). This research paradigm (interpretive) usually adopts the qualitative approach and is often based on the inductive process.

### 3.2.1.3 Pragmatism

Pragmatism is another worldview or belief system that guides the decisions that researchers make when conducting a study but it is not committed to any one system of philosophy or reality (Mackenzie & Knipe, 2005:196). Even though pragmatism is fairly recent compared to other philosophical positions, it has positioned itself as a contending paradigm (Pansiri, 2005:196).

The pragmatist epistemology stands in contrast to prevailing positivist and constructivist views of scientific discovery. The pragmatist proposes to reorient assessment of theories around a third criterion: the theory's capacity to solve human problems (Stich, 1990 cited in Pansiri, 2005:196). Pragmatists believe that the mandate of science is not to search for the truth or reality, the existence of which are perpetually in dispute, but to facilitate human problem – solving (Powell, 2001:884). This view is shared by Creswell & Plano-Clark (2007:26) who argue that as an alternative paradigm it sidesteps the contentious issues of the truth and reality, accepts, philosophically, that there are singular and multiple realities that are open to empirical inquiry and orients itself toward solving practical problems in the "real world". In that sense, pragmatism advocates researchers not to "be prisoners of a particular [research] method or technique" (Robson, 1993:291) but allows the researcher to be free of mental and practical constraints imposed by the "forced choice dichotomy between positivism and constructivism" (Creswell & Plano Clark, 2007:27). Indeed researchers are held prisoner to particular research methods because of these two main contrasting research paradigms (positivism and

interpretivism).Therefore the researcher is of the view that pragmatism integrates these worldviews; as a result broadening the understanding of reality.

Pragmatists are "anti-dualist" (Rorty, 1999: ixx) questioning the difference between positivism and interpretivism and calling for a convergence of quantitative and qualitative methods, repeating that they are not different at an epistemological or ontological level and that they share many commonalities in their approach to inquiry (Feilzer, 2010:8). This view is shared by Dewey (1925:47) who asserts that the main paradigms of positivism and subjectivism derive from the same paradigm family, that they seek to find "the truth" – whether it is an objective truth or the relative truth of multiple realities. In other words, the pragmatists are challenging the difference between the two main research paradigms and they see it as superficial thus advocating the engagement of the two approaches in any research.

Furthermore, the pragmatic paradigm advocates a direct link of the research approach to the purpose and the nature of the research questions asked. In other words, what is important to the pragmatist is; which method of research is suitable for which research question. In support of this view, Creswell (2003) cited in Pansiri (2005:198) argues that, instead of methods being important, the research problem is the most important issue and individual researchers have freedom of choice regarding the methods, techniques of research that best meet their needs and purposes. Armitage (2007:5) also argues that research is often multi-purpose and a "what works" tactic will allow the researcher to address questions that do not sit comfortably within a wholly quantitative or qualitative approach to design and methodology. Pragmatism rejects the forced choice between positivism and interpretivism with regard to methods, logic and epistemology (Pansiri, 2005:198).

In addition to that, pragmatists also hold an "anti-representational view of knowledge" asserting that research should no longer aim to most precisely represent reality, to offer an accurate account of how things are in themselves but to be useful, to aim at utility for us (Rorty, 1999:xxvi). The notion of utility calls for reflexive research practice. Consequently, any investigation begs the question of "what it is for" and "who it is for" and "how do the

researchers' values influence the research", and it is these questions that have to be considered by researchers to make investigation more than an attempt to "mirror reality" (Feilzer, 2010:8).

In terms of approach of inquiry, pragmatism regards "the research problem" as central and applies all approaches to understanding the problem (Creswell, 2003:11). Since the research question is 'central' in the pragmatic paradigm it means that data collection and analysis methods are selected as those that are likely to provide insights into the question with no philosophical loyalty to any alternative paradigm. According to Pansiri (2005:197), pragmatism has been hailed as the foundation of the mixed-method approach. In other words, the pragmatic paradigm provides the underlying philosophical framework for mixed-methods research. However, mixed-methods could be used with any paradigm (Mackenzie & Knipe, 2006:196). According to Creswell et al. (2003:212), mixed-method studies are those studies involving the collection or analysis of both quantitative and qualitative data in a single study in which the data are collected concurrently or sequentially, are given a priority, and involve the integration of the data at one or more stages in the process of research.

#### 3.2.1.3.1 Why the study adopted the pragmatic paradigm

The aim of this study is to investigate factors that impede continuing professional development of teachers in Junior Secondary Schools. The study further intends to establish whether there are structures in school which facilitate continuing professional development of teachers in Junior Secondary Schools. This study investigates a practical situation, which is the professional growth of teachers in Junior Secondary Schools. Therefore, an appropriate research paradigm for studies of this nature is pragmatism. In support of this argument, Feilzer (2010:8) proposes that pragmatism is oriented toward solving practical problems in the "real world" rather than on assumptions about the nature of knowledge. Therefore the pragmatic research paradigm suits this study.

The study adopted the pragmatic paradigm because it does not confine the researcher to a particular research method or technique but rather allows the researcher the latitude to choose the methods (or combination of methods) that work best for answering the question. The pragmatist

is free to study what interests him and is of value to him, study it in different ways that he can deem appropriate, and utilize the results in ways that can bring about positive consequences within his value system (Tashakkori & Teddle, 1998:30). In the view of Morgan, (2007:73) pragmatism offers the researcher an opportunity to produce a properly integrated methodology for the social research acknowledging the value of both quantitative and qualitative research methods.

Pragmatism has gained considerable support as a stance for mixed methods researchers (Feilzer, 2010). Mixed methods research is the type of research in which a researcher or team of researchers combine elements of qualitative and quantitative approaches (e.g., use of quantitative and qualitative view points, data collection, analysis, inference techniques) for the purposes of breadth and depth of the understanding and corroboration (Johnson et al., 2007:123). In other words, the pragmatic paradigm enables the researcher to engage a mixed-method approach and which allows the researcher to engage both qualitative and quantitative methodologies. The benefit of engaging mixed-method approach in this study is that the weakness of one approach can be covered by the strength of another approach. Sieber (1973) cited in Onwuebuzie & Leech (2005:377) articulated that because both approaches have inherent strengths and weaknesses, researchers should utilize the strengths of both techniques in order to better understand social phenomena. Pragmatism is treated as a new orthodoxy built on the belief that not only is it allowable to mix methods from different paradigm of research but also desirable to do so because good social research will almost certainly require the use of both quantitative and qualitative research in order to provide an adequate answer (Denscombe, 2003 :7).

In order to get a broader picture with regard to the factors that impede and structures in school which facilitate continuing professional development of teachers in Junior Secondary Schools the study engaged quantitative methods of data collection and analysis. However, the inflexible belief of the positivist does not have the capacity to accommodate the aspect of the study which deals with the social and human experiences. Teachers have their own perception and views regarding continuing professional development, which quantitative methods of data collection are too limited to access. As a result the qualitative methodologies were also incorporated into the research design

The three paradigms (positivism, interpretivism and pragmatism) discussed above are linked to different research approaches. The positivism paradigm is associated with the quantitative research approach. This approach employs inquiry strategies such as experimentation and survey. The most common data collection method for this approach is the questionnaire. The qualitative approach tends to be linked to the interpretivism/constructivism paradigm. It engages strategies of inquiry such as case study or narrative. It uses interview method for data collection resulting in textual data. The pragmatism paradigm is associated with mixed methods approach. The approach engages strategies that are drawn from quantitative and qualitative approaches to collect data concurrently or sequential in a manner that best address the research question (Armitage, 2007:6). These stated approaches are discussed below.

## 3.3 RESEARCH APPROACHES

Qualitative and quantitative research approaches have dominated educational research for a number of years. The trend has been to engage one approach at a time. The use of one approach at a time could have been due to the debates regarding these two approaches and the underlying paradigmatic differences (Mbengwa, 2010:115). The quantitative approach on the one hand strives to discover laws that are generalizable and can govern the universe. It is informed by realism, idealism and critical realism. The qualitative approach strives to understand and describe human nature. It is underpinned by heuristic and phenomenological ideologies. The proponents of each of the two approaches view their approach as better than the other. New developments in research have however established that each of the approaches has both weaknesses and strengths and neither of the approaches seem to be better in relation to another. McEvan & McEvan (2003:21) assert that regardless of the research problem under investigation, no approach is superior to another.

A researcher is not in any way obliged to choose between the two approaches, and where appropriate, an integrated approach can be applied (Walliman, 2005:271). This in a way shows that the two approaches harmonize one another – although some researchers find the "opposing" paradigmatic foundations irreconcilable.

For this study, the researcher explicitly decided on a mixed method approach in which both quantitative and qualitative approaches are used. In the researcher's perspective, the mixed method approach leaves sufficient room for a diversity of understandings of reality, which balance each other and are not in direct opposition. On the surface level, quantitative and qualitative researchers base their conclusions on different kinds of information and employ different techniques of data analysis (Durrheim, 2006:47). Mixed method data have different characteristics and also require different techniques of analysis thus enhancing the understanding of reality.

What follows is a separate discussion of the quantitative and qualitative components of the mixed method approach so as to give the reader an understanding of what each entails in terms of focus, merits and demerits. Consequently, the discussion will be on the Mixed Method Approach.

### 3.3.1 Quantitative Approach

The Quantitative Research Approach started off in the physical sciences and is entrenched in the Positivistic Paradigm (Kgothule, 2006:112; Wienreich, 2006:1). In the positivist paradigm, precise, measurable and verifiable observations are counted as truth (Saunders et al., 2003:37-38). In other words, Quantitative Research assumes that it is through scientific measurements and explanations that objective truth about the world can be reached. The research designs in the Quantitative Approach are usually survey, co-relational, experimental and causal comparative. Techniques for data gathering can be questionnaires, observations, tests and experiments (Polit & Hungler, 1997:258). Furthermore, the quantitative approach is grounded in numerical presentation of information where data is collected and analyzed through statistical means. According to Muijs, (2004:1), it is a research approach used for explaining phenomena by collecting data that are analyzed using mathematically based methods, in particular, statistics.

Many other assumptions about the Quantitative Approach have been established (McMillan & Schumacher, 2001:15-16; Abawi, 2008:4). These include assumptions about: (a) the world that reality can be studied objectively, as long as the study is independent of the researcher's feelings

and beliefs; (b) research purpose – the research seeks to develop generalisations that contribute to the theory that allows the researcher to forecast, explain and understand a phenomenon; (c) research methods and process – the researcher is guided by established logical procedures and he or she may decide on the methods as part of pre-established design before collection of information; (d) prototypical studies – through experiments or correlations, the quantitative research is used to produce valid and reliable results; (e) research role – the researcher remains distant to avoid subjectivity, and (f) the importance of the context in the study – the research aims to make conclusions which are not context bound.

Research had established that the quantitative research approach has both strengths and limitations (Weinreich, 2006:2; Silverman, 2003:3 and Mbengwa, 2006:111). It is appropriate that researchers engaging this approach appreciate the weaknesses and strengths of this approach. Below are some of the strengths and weakness of the quantitative approach.

#### 3.3.1.1 Strengths

- Methods employed in the quantitative paradigm produce reliable data that are usually generalizable to some larger population (Weinreich, 2006:2);
- Through the quantitative approach data gathered is subjected to highly sophisticated analysis and modelling procedures that can uncover interesting and important relationships that are not visible to the naked eye (Mbengwa, 2006:111);
- The quantitative approach states the research problem in very specific and set terms;
- It clearly and precisely specifies both the dependent variables under investigation;
- The approach eliminates or minimises subjectivity of judgement; and
- The approach allows for longitudinal measures of subsequent performance of research subjects (Silverman, 2003:3).

### 3.3.1.2 Limitations

- The approach decontextualizes human behaviour in a way that removes the event from its real world setting and ignores the effects of variables that have not been included in the model (Weinreich, 2006:2);
- It uses a static and rigid approach and so employs an inflexible process;
- It fails to provide the researcher with information on the context of the situation where the studied phenomenon occurs;
- The approach has an inability to control the environment where the subjects provide the questions in the study;
- It has outcomes limited only to those outlined in the original proposal due to the closed type of questions and structures format; and
- It fails to encourage the evolving and continuous investigation of a research phenomenon (Silverman, 2003:5-7).

### 3.3.2 Qualitative Research Approach

The qualitative research approach makes every effort to comprehend and explain human nature. It involves studying human behaviour within its own setting and it is described as multi-method in focus, involving an integrative, naturalistic approach to its subject matter. In other words, the qualitative researcher studies things in their natural settings, attempting to make sense of or interpret phenomenon in terms of the meaning people bring to them (Denzin & Lincoln undated as cited in Mbengwa, 2010:119). The research design or strategies associated with qualitative approach are usually ethnography, naturalistic, grounded theory, case studies, participatory action research and institutional ethnography (Babbie, 2008:321). Data gathering in the qualitative approach is achieved through interviews, participation observation, case studies, diaries, pictures and documents. In this approach, knowledge is subjective and ideographic because what counts as truth is context dependent.

There are many other assumptions which form the bases of the qualitative approach such as: (a) assumptions about the world – the constructed realities exists in the minds of the individuals and cannot be broken into parts but must be examined as a whole where the investigation has to be carried out under natural conditions; (b) assumption about the research purpose – the researcher interacts to some degree with participant(s) with the aim to gain insight into the participant's point of view (Kgothule, 2004:116); (c) assumption about research methods and process – flexibility in design, data collection and analysis of research is strongly recommended to enable an in-depth understanding and valid representation of the participants' perspective (Silverman, 2008:8); (d) assumption about prototypical studies – data analysis and interpretation is guided by the researcher's capability to identify inter-subjective themes, and the patterns of observed behaviours or events in order to realise exceptional results (Mbengwa, 2010: 210); (e) assumption about the researcher – the researcher is immersed in the situation and the aspect of under investigation, and (f) assumption about the context in the study – it is assumed that human behaviours are strongly influenced by natural environments, and as such the qualitative research is context-bound (Abawi, 2008:6).

To broaden the comprehension of the methodology, the study will briefly discuss the four qualitative approaches and also highlight the approach employed. The four qualitative research approaches are ethnography, phenomenology, grounded theory and case study.

- **Ethnography Approach**

Ethnography is a qualitative research approach that originated in the discipline of anthropology around the turn of the twentieth century. Ethnography literally means *"writing about people"* (*ethnos* means people, race, or cultural group and *graphia* means writing or representing) (LeCompte & Preissle, 1993 as cited in Johnson & Christensen, 2008:320). Ethnography is traditionally or classically defined as the discovery and comprehensive description of the culture of a group of people (Johnson & Christensen, 2008:320). This view is shared by Harris (1968) as cited in Creswell (2007:68) who understand ethnography as a qualitative design in which the researcher describes and interprets the shared and learned patterns of values, behaviours, beliefs, and language of a cultural-sharing group

Ethnography relies on extended fieldwork. The researcher spends a long time with the people being studied. The researcher becomes a participant or nonparticipant observer. In fact, the extended fieldwork and "participant observation" are the most distinguishing characteristics of a classical or ideal type of ethnography (Johnson & Christensen, 2008:320). Creswell (2007:68) asserts that, as a process, ethnography involves extended observations of the group, most often through participant observation, in which the researcher is immersed in the day-to-day lives of the people and observes and interviews the group participants. This means that the primary data collection methods are observation and in-depth interviews. Data collection and analysis in ethnography are said to be concurrent, or alternating.

- **Phenomenology**

Phenomenology refers to the description of one or more individuals' consciousness and experience of a phenomenon, such as the death of a loved one, viewing of oneself as a teacher, the act of teaching, the experience of being a minority group member, or the experience of winning a soccer game (Johnson & Christensen, 2008:315). Phenomenological study describes the meaning for several individuals of their lived experiences of a concept or phenomenon (Creswell, 2007:57). The rationale of phenomenology is to gain access to individuals' life-worlds and to describe their experiences of the phenomenon. The description consists of "what" they experienced and "how" they experienced it (Moustaks, 1994 as cited in Creswell, 2007:58).

Data is collected from individuals who have experienced the phenomenon. Often data collection in phenomenological studies consists of in-depth interviews and multiple interviews with participants (Creswell, 2007:61; Johnson & Christensen, 2008:317). Polkinghorne (1989) as cited in Creswell (2007:61) recommends that researchers interview from 5 to 25 individuals who have experienced the phenomenon.

- **Grounded Theory**

Grounded theory is a qualitative research design in which the inquirer generates a general explanation (a theory) of a process, action, or interaction shaped by the views of a large number

of participants (Strauss & Corbin, 1998 as cited in Creswell, 2007:63).It is a methodology for developing theory that is grounded in data systematically gathered and analysed. The key idea is that theory development does not come "off the shelf" but rather is generated or 'grounded" in data from participants who have experienced the process (Strauss & Corbin, 1990 as cited in Creswell, 2007:63). For example, if someone outside education wanted to learn about teaching, this person could go to real classroom, observe a teacher for several weeks, and then draw some tentative, data-based conclusions about teaching. Strauss & Corbin (1990:23) as cited in Johnson & Christensen (2008:332) point out the inductive nature of grounded theory research when they say that one does not begin with a theory, then prove it. Rather, one begins with an area of study and what is relevant to that area is allowed to emerge.

During a particular grounded theory research study, some data are collected and analysed and, as the theory is being developed, additional data are gathered and analysed to further explain, build up and validate the theory. Data analysis in grounded theory starts at the moment of initial contact with the phenomenon being studied, and it continues throughout the development of the grounded theory (Johnson & Christensen, 2008:335). In other words, data collection and analysis in grounded theory are simultaneous and continual activities. Open-ended interview is the most commonly used data-collection method in grounded theory, even though other approaches, especially direct observations, are often used to collect original data.

- **Case Study**

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Case study research is a qualitative approach in which the investigator explores a bound system (a case) or multiple bounded systems (cases) over time, through detailed, in-depth data collection involving multiple sources of information (e.g., observations, interviews, audio-visual material, and documents and reports), and reports a case description and case-based themes (Creswell, 2007:73; Johnson & Christensen, 2008:327). A typical case could be a child with a learning disability; a pupil with a special need; a language arts classroom; and a charter school.

One of the objectives of this study is to investigate the factors that impede continuing professional development of teachers in Junior Secondary Schools. The research will engage the

phenomenological qualitative approach in its investigation. Phenomenological study describes the meaning for several individuals of their lived experiences of a concept or phenomenon (Creswell, 2007:57). This approach is appropriate for the study because teachers use their experience to highlight the barriers to their professional growth. Similarly, school heads, senior teachers and in-service education officers are former classroom teachers. They use their experience to raise challenges teachers encounter regarding their professional development.

The qualitative approach has both strengths and limitations just like the quantitative research approach. In order to produce quality research, researchers should be made aware of the strengths and limitations of the Qualitative Research Approach.

### 3.3.2.1 Strengths

The strengths of qualitative research include the following:

- Qualitative research enables researchers to elicit rich, detailed data that allows participants' ideas to remain intact: theory providing the context for healthy behaviour (Weinreich, 2006:2);
- Through the qualitative research approach results obtained have sufficient details that enable the reader to understand the idiosyncrasies' of the situation (Neill, 2006:3);
- Qualitative research attempts to depict the fullness of experience in a meaningful and comprehensive way (Winget, 2005:3); and
- Data collection, analysis and interpretation are performed in flexible ways. It has also been observed that the qualitative research approach does not detach research from the natural settings as well as the operational terms (Silverman, 2003:8).

### 3.3.2.2 Limitations

- When using the qualitative research approach it is very difficult to avoid subjectivity which compromises the reliability and validity of approaches and results (Mbengwa, 2006:113);

- It is not easy to detect or prevent bias from the researcher;
- Data collection and analysis may be labour intensive and time consuming;
- The researcher may deviate from the original objectives of the research in response to the changing nature of the context; and
- It requires highly experienced researchers to obtain the targeted information from respondents (Weinreich, 2006:2).

Having discussed the qualitative and quantitative approaches, the study intends to highlight the Mixed Method Approach.

### 3.3.3 Mixed-Methods Approach

Mixed methods research has now been recognized as a justifiable methodological alternative and is used by many academics and researchers from across a variety of discipline areas. Nevertheless, it appears there is no one definition of mixed method research as pointed out by Thurston et al. (2008:3) who argue that mixed methods studies can either combine methods from different paradigms or use multiple methods within the same paradigm or multiple strategies within methods.

A number of researcher scholars over the years have come up with several definitions of mixed-methods research which include different components of methods, philosophy, research design and research processes. Early definition of mixed methods research was put forth by Greene et al. (1989:256) who define mixed-method designs as those that include at least one quantitative method (designed to collect numbers) and one qualitative method (designed to collect words), where neither type of method is inherently linked to any particular inquiry paradigm. In their definition, Greene et al emphasized the mixing of methods and philosophy (i.e. paradigm). Ten years later, Tashakkori and Teddlie (1998) as cited in Creswell and Plano-Clark (2011:3) define mixed method research as the combination of quantitative and qualitative approaches in the methodology of a study. This definition put forth by Tashakkori and Teddlie (1998) shifted from mixing methods to mixing all phases of the research process.

Johnson et al. (2007:123) assert that mixed methods research is the type of research in which a researcher or team of researchers combine elements of quantitative and qualitative research approaches (e.g., use of quantitative and qualitative viewpoints, data collection, analysis, inference techniques) for the purposes of breadth and depth of understanding and corroboration. The focus of the definition by Johnson et al is the purpose of mixing methods. According to Creswell and Plano – Clark (2007:5), mixed methods research is a research design with philosophical assumptions as well as methods of inquiry. As a methodology, it involves philosophical assumptions that guide the direction of the collection and analysis and the mixture of qualitative and quantitative approaches in many phases of the research process. As a method, it focuses on collecting, analyzing, and mixing both quantitative and qualitative data in a single study or series of studies. Its central premise is that the use of quantitative and qualitative approaches, in combination, provides a better understanding of research problems than either approach alone. This definition combines methods, a philosophy and a research design orientation. These different stances are summarised in Table 3.1.

**Table 3.1:** Authors and the Focus or Orientation of Their Definition of Mixed Methods

| **Author(s) and Year** | **Focus of the Definition** |
|---|---|
| Greene, Caracelli and Graham (1989) | Methods<br>Philosophy |
| Tashakkori and Teddlie (1998) | Methodology |
| Johnson, Onwuegbuzie and Turner (2007) | Qualitative and quantitative research<br>Purpose |
| Creswell and Plano-Clark (2007) | Methods<br>Philosophy |

Adapted from Creswell and Plano-Clark (2011:3)

According to Creswell and Plano-Clark (2011:69), there are four basic mixed methods research designs. These designs are; the convergent parallel design, the explanatory sequential design, the exploratory sequential design and the embedded design. Each of these designs will be briefly discussed in the study and highlight the design it adopted.

- **Convergent Parallel (Concurrent Triangulation) design**

The convergent parallel design is probably the most familiar of the four mixed-method designs. It is selected as the model when a researcher uses two different methods in an attempt to confirm, cross-validate, or corroborate findings within a single study (Morgan, 1998:367). This design generally uses separate quantitative and qualitative methods as a means to offset the weaknesses inherent within one method with the strengths of the other method. In this case, the quantitative and qualitative data collection is concurrent and happening in one phase of the research study. Ideally, the priority would be equal between the two methods but in practical application priority may be given either to the quantitative or the qualitative approach. The strategy usually integrates the results of the two methods during the interpretation phase (see figure 3.1a).

- **Explanatory Sequential design**

The explanatory sequential design takes place in two different interactive phases (see figure 3.1b). This design is characterised by the collection and analysis of quantitative data followed by the collection and analysis of qualitative data. The priority typically is given to the quantitative data, and the two methods are integrated during the interpretation phase of the study. The purpose of the sequential explanatory design typically is to use the qualitative results to assist in explaining and interpreting the findings of a primarily quantitative study. It can be especially useful when unexpected results arise from a quantitative study (Morse, 1991:200). In this case, the qualitative data collection that follows can be used to examine these surprising results in more detail.

- **Exploratory Sequential design**

The sequential exploratory design has many characteristics which are similar to the explanatory sequential strategy. It is carried out in two phases, with the priority generally given to the first phase, and it may or it may not be put into practice within a prescribed theoretical perspective. In contrast to the explanatory sequential approach, this model is characterised by an initial phase of qualitative data collection and analysis. Therefore, the priority is given to the qualitative aspect of the study. The findings of the two phases are then integrated during the interpretation phase.

The essential purpose of the exploratory sequential design is to make use of quantitative data and results to aid in the interpretation of qualitative findings. Its main focus is to explore a phenomenon. Morgan (1998:367) suggests that this design is appropriate to use when testing elements of an emergent theory resulting from the qualitative phase and that it can also be used to generalise qualitative findings to different samples.

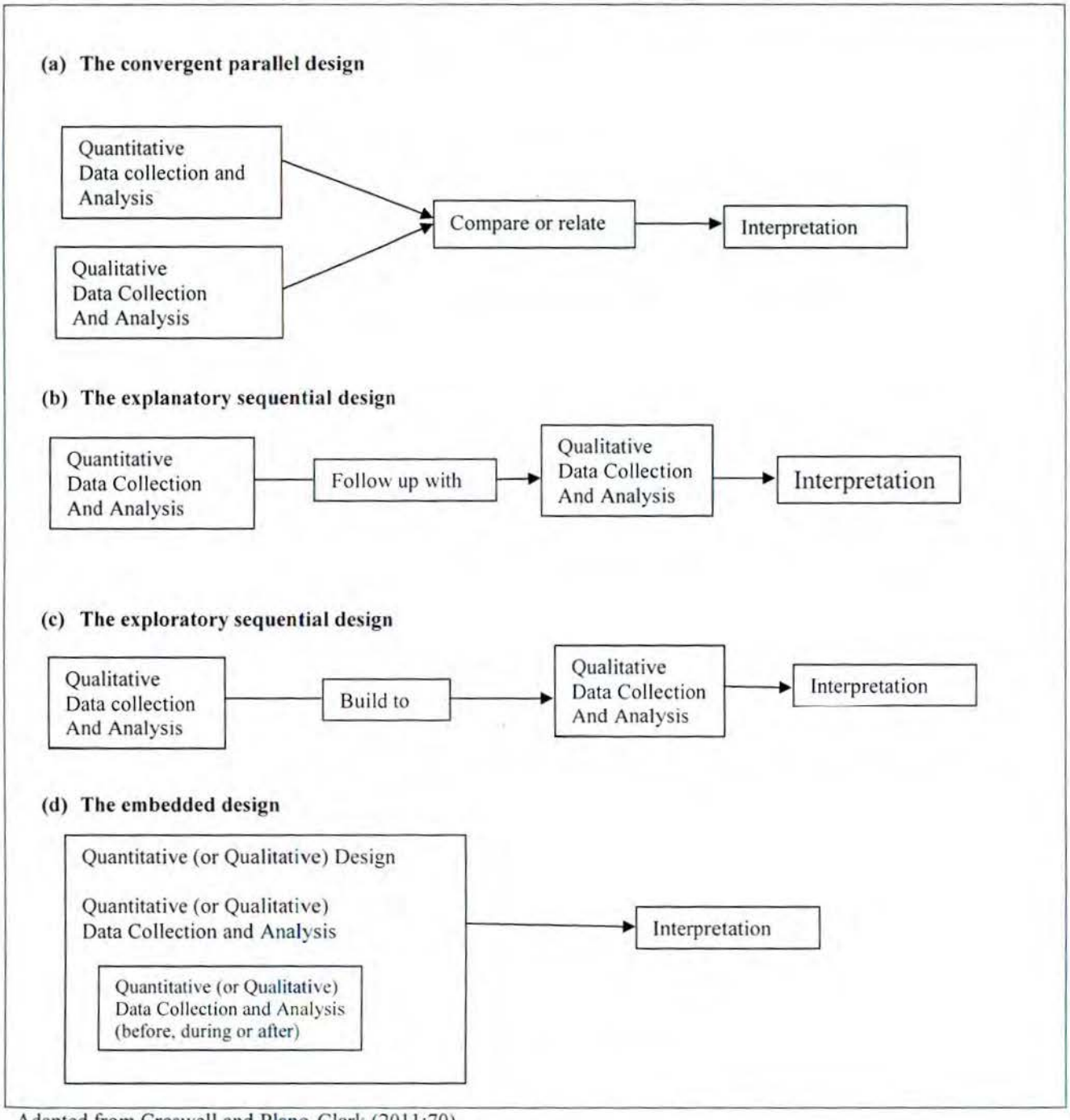
- **Embedded (Concurrent Nested)**

Similar to convergent design, the embedded model can be identified by its use of one data collection phase, during which both quantitative and qualitative data are collected at the same time (see figure 3.1d). The embedded approach has a principal method that leads the project unlike the traditional triangulation model. The method (qualitative or quantitative) is embedded with the leading method (qualitative or quantitative). This nesting may mean that the embedded method addresses a different question or seeks information from a different level. The data collected from the two methods are mixed the analysis phase of the project. This strategy may or may not have a guiding theoretical perspective.

The concurrent nested design may be used to serve a variety of purposes. This design is often used so that a researcher can gain a broader perspective as a result of using the different methods as opposed to using the predominant method alone. For example, if an organisation is being studied, then employees could be studied quantitatively, managers could be interviewed qualitatively, entire divisions could be analysed with quantitative data, and so forth. Tashakkori & Teddlie (1998:67) describe this approach as a multilevel design

The embedded design has much strength as two types of data are collected simultaneously during a single data collection phase. It provides the study with the advantages of both quantitative and qualitative data. In addition the researcher can gain perspectives from the different types of data or different levels within the study. However, there are also limitations researchers have to consider when choosing this approach. The data need to be transformed in some way so that they can be integrated within the analysis phase of the research. There is very little written about this approach which can guide the researcher. The other disadvantage is that the two methods are unequal in their priority; this approach also results in unequal evidence within the study, which may be a disadvantage when interpreting the final results.

**Figure 3.1** Portray the prototypical versions of these four designs.




Adapted from Creswell and Plano-Clark (2011:70)

The mixed method approach also has both strengths and limitations which researchers need to be aware of. Below are some of the strengths and weaknesses of this approach.

### 3.3.3.1 Strengths

Creswell and Plano – Clark (2007:9) identify the benefits of using a mixed approach as follows:

- Mixed methods research provides strengths that offset weakness of both quantitative and qualitative research;
- Mixed methods research provides more comprehensive evidence for studying a research problem than either quantitative or qualitative research alone;
- Mixed methods research helps answer questions that cannot be answered by quantitative or qualitative approaches alone;
- Mixed methods encourage researchers to collaborate across the sometimes adversarial relations between quantitative and qualitative researchers and;
- Mixed methods encourage the use of multiple worldviews or paradigms rather than the typical association of certain paradigms for quantitative researchers and others for qualitative researchers.

### 3.3.3.2 Limitations

Johnson & Onwuegbuze (2004:21) identified some of the limitations as follows:

- It could be taxing for a single researcher especially if more approaches are expected to be completed simultaneously – it may require team work;
- Little knowledge and understanding of multiple methods and approaches and how to use them concurrently may somehow jeopardise validity of the research;
- Methodological purists contend that one should always stick to one paradigm (either positivist or interpretivist);
- It is often expensive; it is more time consuming; and

- Some of the mixed method research remain to be worked out fully by research methodologies (e.g., problem of paradigm mixing, how to qualitatively analyse quantitative data, how to interpret conflicting results).

#### 3.3.3.3 Why the study used mixed-methods approach

The characteristics, merits and demerits of a Mixed Method Approach discussed earlier motivated the researcher to employ the approach during the study. The study used Mixed Method Approach in order to gather different but harmonizing data to best understand the situation regarding factors which impede continuing professional development of teachers in Junior Secondary Schools and structures in schools which support professional growth of teachers. In support of this view, Morse (1991) cited in Creswell and Plano – Clark (2011:77) argues that the purpose of the convergent parallel mixed methods design is to obtain different but complementary data on the same topic. In other words, the mixed methods approach aids the researcher to best understand the problem.

Another factor that motivated the researcher to employ a mixed methods approach is that the method allows the researcher to triangulate the methods. Triangulation involves the application and combination of several researcher methodologies in one study (Taylor et al., 2003 cited in Mitchel, 2008:45). In this study data from with interviews teachers, senior teachers, school heads and in – service education officers were utilised to reinforce and complement the data from closed – ended quantitative questionnaire of teachers. Triangulation of methods enables the researcher to compare and contrast quantitative statistical data results with qualitative findings for verification and justification of the results. According to Halcomb and Andrew (2005) cited in Mitchel (2008:45), the use of multiple data sources and methods to cross – check and validate findings, increases depth and quality of the results and also provides valuable guidance in nursing.

Professional growth has some personal element. It requires commitment from the individual. To fully establish the factors that impede professional growth of teachers it will be necessary for the researcher to interact with individual teachers to express their opinions closer to personal feelings hence the qualitative approach. Muijs (2004:10) is of the view that for the study to really

get under the skin of the phenomena, ethnographic approaches, interviews, in depth case study and other qualitative techniques should be employed. The combination of qualitative and quantitative approaches provides a better understanding of research problems than either approach alone, hence the researcher's choice of a mixed method approach. Johnson and Onwuegbuze (2004:18) are of the opinion that gaining insight into the merits and demerits of the traditional quantitative and qualitative paradigms puts the researcher in a position to employ a mixed method approach.

Research problems suited for mixed methods are those in which one data source may be insufficient, results need to be explained, exploratory findings need to be generalised, a second method is needed to enhance a primary method, a theoretical stance needs to be employed, and an overall research objective can be best addressed with multiple phases or projects (Creswell & Plano – Clark, 2011:8). In this study the use of one approach will not be sufficient.

**Table 3.2**: The Emphasis of Quantitative, Mixed, and Qualitative Research Approaches (adopted from Johnson & Christensen, 2007:2)

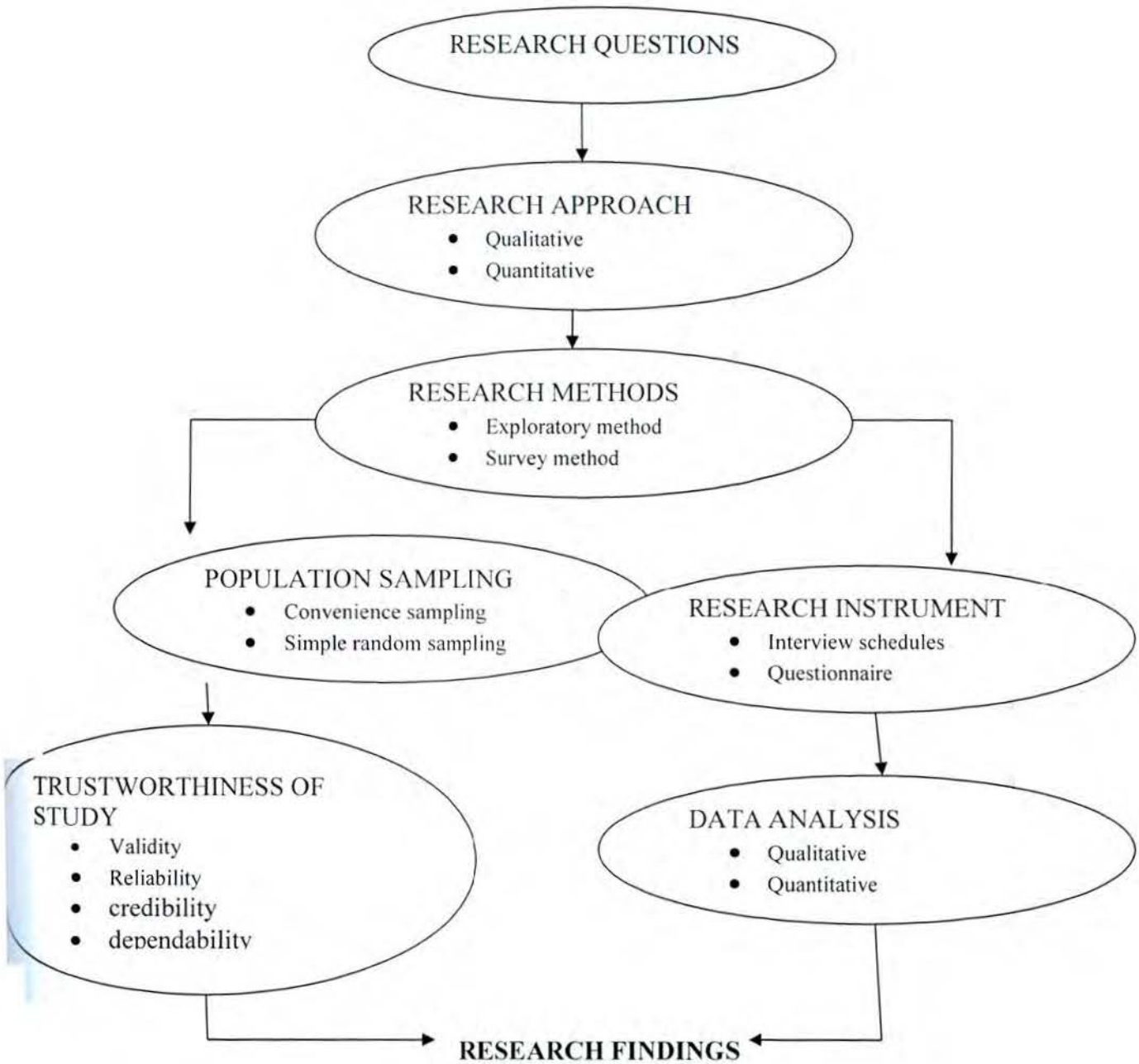
| | **Quantitative research** | **Mixed research** | **Qualitative research** |
|---|---|---|---|
| **Scientific method** | Deductive or 'top-down'. The researcher tests hypothesis and theory with data | Deductive and inductive | Inductive or bottom-up. The research generates hypothesis and ground theory from data collected during field work. |
| **View of human behaviour** | Behaviour is regular and predictable | Behaviour is some-what predictable | Behaviour is field, dynamic, situational, social, contextual, and personal |
| **Most common research objectives** | Description, explanation and prediction | Multiple objectives | Description, explanation, and discovery |
| **Focus** | Narrow-angle lens, testing specific hypothesis | Multi-lens focus | Wide-angle "deep-angle" lens, examining the breadth and depth of phenomenon to learn more about them |
| **Nature of observation** | Attempt to study behaviour under controlled conditions | Study behaviour in more than one context or condition | Study behaviour in natural environments. Study the context in which the behaviour occurs |
| **Form of data collected** | Collect quantitative data based on precise measuring using structured and validated data collection instruments (e.g. closed-ended items, rating scales, behavioural responses) | Multiple forms | Collect qualitative data (e.g. in-depth interviews, participant observation, field notes, and open-ended questions). The researcher is the primary data collection instrument. |
| **Nature of data** | Variables | Mixture of variables, words and images | Words, images, categories |
| **Data analysis** | Identify statistical relationships | Quantitative and qualitative | Search for patterns, themes, and holistic features |
| **Nature of reality** | Objective (different observers agree on what is observed) | Commonsense realism and pragmatic view of world (i.e., what works is what is "real" or true) | Subjective, personal and social constructed |
| **Results** | Generalisable findings | Corroborated findings may generalise | Particularistic findings. Representation of insider (i.e., "emic")view point. Present multiple perspectives |
| **Form of final report** | Statistical report (e.g., with correlations, comparisons of means, and reporting of statistical significance of findings) | Eclectic and pragmatic | Narrative report with contextual description and direct quotations from research participants |

## 3.4 RESEARCH DESIGN

Research design is a general strategy or a plan that a researcher will engage when conducting research (Johnson & Christensen, 2008; Gay et al., 2006). For example, the researcher may have to decide on a time frame for the research, the target population, sampling procedures, the research methods, data collection methods and analysis strategies and techniques. The significance of drawing a research plan (design) is to take the initial research problem and decide how it will be researched. Some of the aspects to be considered in the design are available time, financial resources, facilities, availability of data, possible methods of analysis, and the researcher's own development in terms of research skills (Walliman, 2005:248). The research design is central in any investigation to be conducted because it determines how data will be collected and analysed. Furthermore, the research design guarantees that evidence obtained enables the researcher to answer the research question as unambiguously as possible. Figure 3.1 presents the research design which incorporated the steps and processes required to answer the research questions.

**Figure 3.2: Research Design of the Study**

The Organisational chart shows the research design procedures and it is titled "*Continuing Professional Development of Teachers in Junior Secondary Schools in Northern Region-Botswana*". (Adopted from Lalitha, 2005:112)



As indicated, the study engaged in a mixed method approach and it adopted a combined exploratory quantitative-qualitative research design. Two reasons justified this choice.

Firstly, the quantitative approach was suitable to give a broad picture regarding continuing professional development of teachers in Junior Secondary Schools. It nevertheless left out participant's meanings and interpretations from the data collected (Gephart, 1999:1-9). This is why mixing it with the qualitative approach was the best way to investigate the issues involved as it enabled the collection of rich data.

Secondly, a qualitative approach was deemed suitable as it allowed the researcher to enter the participants' life-worlds and study their lived experiences (De Vos, 1998:38). This was the case when teachers, school heads and in-service education officers expressed their views regarding professional development of teachers in Junior Secondary Schools. This research was keen to capture this holistic aspect of teacher professional development, in its totality, within the context of those who are experiencing it.

In order for the researcher to gain different perspectives, descriptive research methods were employed in this study. The descriptive type of the quantitative design was adopted in this study since it determines and describes the way things are (Gay et al., 2006:76).

Although the descriptive research design has various categories, this study engaged in the survey method. Johnson & Christensen (2008:197) argue that a survey is a non-experimental research in which questionnaires or interviews are used to gather information and the goal is to understand the characteristics of a population. A survey research systematically gathers information about a situation, an area of interest, a series of events, or about people's attitudes, opinions, behaviour, interests or practices (Chilisa & Preece, 2005:100). Furthermore, Cohen et al. (2007:204), argue that a survey research typically gathers data at a particular point in time with the intention of describing the nature of the existing conditions. In this study, the survey method was appropriate because it depicts the current situation regarding in-service training of teachers in Junior Secondary Schools. In contrast, a phenomenological type of qualitative design was engaged

because this approach is directly concerned with the lived experiences of people (Brown & Schulze, 2001:1-2).

## 3.5 POPULATION AND SAMPLING PROCEDURES

The population of this study was mainly teachers, school heads, and senior teachers in thirty three Junior Secondary Schools as well as in-service education officers, in the Northern Region of Botswana.Numerically these translate to one thousand three hundred and seventy six research participants (1,376). Table 3.3 shows the breakdown of the population.

**Table 3.3** Breakdown of Population of Study

| | Schools | Teachers | Senior teachers Staff Development | School heads | In-service Education Officer in North Region |
|---|---|---|---|---|---|
| Population | 33 | 1,300 | 33 | 33 | 10 |

Ideally, the researcher would have liked to study the entire population of Junior Secondary Schools in Botswana to investigate the phenomenon from a broader perspective, but the limited scope of the research as a treatise influenced the researcher's decision in this regard. The population demographic information gives gender, age, experience, academic qualifications and level of responsibility.

### 3.5.1 Sampling Procedures

It was not possible for the researcher to study the whole population due to constraints such as time and finance. In these circumstances, the researcher studied a small group of the population called a sample. Descombe (2003:11) describes the sample as a small portion of the whole- a small group of individuals who participate in the research. The process of selecting a small group from the population is called sampling. Gay et al. (2006:99) define sampling as a process of selecting a number of participants for a study in such a way that they represent the larger group from which they were selected.

This research involved both a qualitative and a quantitative phase; therefore, separate sampling procedures were followed. The sampling procedures followed for the quantitative and qualitative phase, respectively, are explained.

#### 3.5.1.1 Quantitative Phase

The researcher employed the convenience sampling method. There are thirty three (33) Junior Secondary Schools in the Northern Region of Botswana and the researcher used convenience sampling and selected seven (7) schools in Francistown for the study. The primary reason for the researcher to have used convenience sampling was because the schools in this region are widely dispersed. Any other sampling approach will not have been efficient. Some schools in this region are about two hundred (200) kilometres apart, which would have been very costly for the researcher to engage participants from those schools. Cluett & Bluff (2005:56) argue that one guiding principle when selecting convenient sampling is that all participants must have experienced the phenomenon under investigation. The research participants in the sampled schools are professional teachers; therefore they provided credible information on issues that relate to professional development of teachers.

Two hundred and forty (240) teachers from the seven (7) sampled Junior Secondary Schools in Francistown were sampled to complete the questionnaire. Although 240 copies of questionnaires were distributed to teachers in the seven Junior Secondary Schools in Francistown, the researcher managed to collect only 126 copies of completed and usable questionnaires. After making several follow-ups to schools, the researcher managed to collect the above stated number of questionnaires. Non-response by some participants was attributed to misplaced or lost questionnaires. However, the researcher gave the participants the questionnaire again but still participants failed to complete them. Despite the challenges, the response rate stood at 52.5% and it should be recognised that the number of teachers who replied gave information which was much-needed for the study. Consequently, data from the questionnaires was confidently used to draw conclusions for the research.

### 3.5.1.2 Qualitative Phase

For the qualitative phase a sample comprising school heads, staff development teachers, teachers and in-service education officers was conveniently drawn and interviewed. From the seven (7) conveniently sampled schools, the researcher randomly selected four (4) Junior Secondary Schools by the "blind draw" or with the "closed eyes" method (Babbie & Mouton, 2009:259). The researcher listed the names of the schools, cut the individual names and put them in a hat for the draw and the hat was shaken before the draw. Four school names were drawn from the hat. Four (4) school heads and four (4) senior teacher for staff development and four (4) teachers of the randomly selected schools comprised the sample for the interview. In addition to that, two (2) in-service education officers were randomly selected from a total of ten (10) in-service officers in Northern Regional office following the same process as the one used to select the four schools above. The total number of participants who were interviewed was fourteen (14) and all of them were willing to be interviewed. Brown and Schulze (2001:3-4) assert that in qualitative research, broad coverage of a sample is unimportant given that the intention is to understand and describe a phenomenon rather than establish cause and effect relationship under rigorous conditions. As a result, the number of participants selected for this phase was regarded to be sufficient.

The reason for the inclusion of schools heads, senior teacher staff development and in-service education officer as source of data is because they are teachers by profession; they are in posts of responsibility and were deemed rich in information because they are in charge of professional development of teachers. The researcher considered their views vital on issues of factors that impede professional development of teachers.

## 3.6 METHODS OF DATA COLLECTION

Data is the information that lies closest to the source of the ultimate truth underlying the phenomena (Leedy & Ormrod, 2001:100). Data collection is the procedure through which the researcher gathers information required for his/her research.

In view of the fact that this research involved the use of a mixed method of qualitative and quantitative approaches, data collection procedures followed suit. Two types of research instruments were employed, that is, survey questionnaires and semi-structured interviews. Webster & Mertova (2007:24) argue that there is a potential in combining questionnaires and interviews as the researcher draws from the strengths of both methodological approaches.
The questionnaire gathered information from teachers in junior schools and its purpose was to give a general picture about barriers to continuing professional development of teachers. The semi-structured interviews provided an opportunity for the researcher to dig deep into the participants' mind and their frame of reference. On the whole, the data collected from the questionnaire survey presented preliminary answers to factors that impede the continuing professional development of teachers; while the interview presented qualitative data that augment the strength and reliability of the study. The data collection instruments and how they were employed in the study are discussed below

### 3.6.1 Questionnaire

According to Gall et al. (2007:156), a questionnaire is a self-reporting data collection instrument that each research participant fills in as part of the study, while Leedy & Ormrod (2005) view them as a type of communication instrument from which respondents are asked information about a research phenomenon under study. In this study, the questionnaires were guided by a closed structured five-point Likert-scale approach (see Appendix E). In closed-ended questions, the answers are prepared to allow only those answers which fit into categories that have been established in advance by the researcher. Respondents are instructed to answer by selecting from a range of two or more options supplied on the questionnaire. The researcher used questionnaires in the study because this helped in the sequencing of the questions and also because it allowed for the collection of data from a large coverage of the population in a shorter period of time.

The questionnaire for teachers was developed using the literature review as well as the research questions so that the focus of the research was maintained. Furthermore, the researcher used some of the ideas and questions from other research papers (Mestry et al., 2009:478). However, it would have been more helpful if standardised questionnaires on factors that impede teacher

development could have been found and used. The design of the questionnaires were such that the first section captured biographical details of the participants and other sections investigated factors that impeded on professional development of teachers and also established if there were structures in schools that facilitated professional growth of teachers (see Appendix E).

The questionnaire consisted of thirty (30) items. The primary reason not to have many questions is to avoid wearing out respondents and also to ensure a high level of participation. The items were divided into two sections: Section A has four (4) items which gathered information about the personal details of the teachers who took part in the research study. Teachers provided information to the researcher on aspects such as their gender, experience, professional qualification, and teaching post. This information was very important because it provided background information of the respondents.

Section B of the questionnaire comprised thirty (30) closed-ended questions structured according to the Likert-scale on a five grid system: strongly agree (SA), agree (A), not sure (N), disagree (D) and strongly disagree (SD). These items gathered information to answer the following questions:

(i) Are there any programmes that facilitate continuing professional development of teachers in Junior Secondary Schools?

(ii) What factors impede continuing professional development of teachers in Junior Secondary Schools?

Items 1– 17 and 18 – 30 of the questionnaire will gather information on question (ii) and (i), respectively.

#### 3.6.1.1 Strengths of Questionnaire

Knupfer & McLellan (2001:5) observed that:

- Questionnaires enable researchers to reach large numbers of people from wide geographical areas;
- Questionnaires allow participants time to reflect on their answers or check information prior to responding, thereby leading to more accurate information and
- They are cost-effective in terms of money and time.

Walliman & Baiche (2001:236) also concluded that:

- Questionnaires allow the same questions for each respondent, and the researcher has no influence there-upon;
- Questionnaires are fixed-they do not change according to how the replies develop and
- Questionnaires allow for anonymous responses, allowing for some embarrassing questions to be asked with a fair chance of getting a true response.

### 3.6.1.2 Limitations of Questionnaire

Knupfer & McLellan (2001:5) established that:

- Questionnaires have a lower response rate especially if they are mailed;
- Questionnaires need special care with designing questions that will be self-administered;

Mbengwa (2006:88)

- Respondents may misinterpret questions and therefore may not give useful responses
- Some respondents may not have much interest in completing the questionnaire and may not attend to all questions
- Some respondents may see the completion of a questionnaire as time consuming especially if the tool is long and
- The return rate may be low either due to misplaced or delayed posted questionnaires

### 3.6.1.3 Piloting of Questionnaire

A pilot study is a small preliminary investigation designed to acquaint the researcher with the flaws and problems that need attention before the major study (Macheng, 2004:48). Conducting a pilot study is a very important step before attempting a major research. Piloting gives the researcher an opportunity to identify and address the possible limitations inherent in the instrument beforehand. Gray (2004:205) argues that questionnaires, unlike interview schedules, cannot be edited during the actual data gathering stage. It is therefore imperative that they are previously piloted so that they are accurate, unambiguous and simple to complete.

For this research, the questionnaire was reviewed by the researcher's colleagues at work (two holders of doctoral degrees). In addition, the questionnaire was pilot tested among twenty teachers in a Junior Secondary School in Tonota village for the purposes of checking the appropriateness, clarity and effectiveness of the questions. The researcher used teachers in junior secondary schools to pilot test the questionnaire because they are familiar with issues which relate to continuing professional development of teachers in Junior Secondary Schools. Peterson & Chambers (2005:119) are of the opinion that pilot testing can be done on a convenience sample that can include different groups of people and individuals who are reasonably similar to targeted study participants. Furthermore, Muijs (2004:51) recommends that colleagues should be involved in the reading of the instrument, after which the instrument could be used with a small group of people from the population intended for sampling who should be requested to provide feedback.

### 3.6.1.4 Covering Letter

This tool has been used to introduce the questionnaire to the respondents. The purpose of the letter is to indicate the aim of the study, to convey to the respondents its importance, to assure them of confidentiality and encourage their participation (Borg & Gall, 1989 as cited in Macheng, 2004:48). A sample covering letter (Appendix D) that explained the purpose and the topic of the study accompanied the questionnaire.

### 3.6.1.5 Questionnaire Administration

Regarding the aspects of the distribution and collection of questionnaires, the researcher distributed two hundred and forty (240) questionnaires in the seven (7) Junior Secondary Schools in Francistown. Issuing of questionnaires in each school was done over a period of one (1) day because the researcher had appointments with each school and explained the purpose of the research study to all the teachers. He also negotiated appointments for the collection of questionnaires. During such meetings, the researcher established a contact person in each school who collected the completed questionnaires on behalf of the researcher. The researcher time and again contacted the contact persons in schools to check the progress of the participants and to remind them of the date of collection of completed questionnaires. The feedback that the researcher got from contact persons was that teachers were not willing to complete questionnaires. However, despite the challenges of teachers being reluctant to complete the questionnaires the return rate was 52.5%.

To enhance the confidence of the findings of the study, a different strategy, namely the interview, was also employed to gather data from school heads, staff development teachers, in-service education officers and teachers. Johnson & Onwuegbuze (2004:18) assert that collecting multiple data using different strategies is likely to result in complementary strengths and non-overlapping weakness. It is on the basis of this argument that the research interviews were also employed to collect data.

### 3.6.2 Interviews

The other instrument the researcher employed in the collection of data was interviews (Appendix, F,G,H &I). Auerbach & Silverstein (2003:54) describe interview as one-to-one conversations conducted in a naturalistic, social situation, allowing for many facets of information to be gathered. Interviews allow respondents to articulate their beliefs in their own words and organization and thus are predominantly helpful for gaining insight.

There are different kinds of interviews. Cohen et al. (2000:270) assert that the categories depend on the sources one consults. Some of the categories include: structured, semi-structured and unstructured. In this study, semi-structured interview schedules were used for teachers, staff development teachers, school heads and in-service education officers. Semi-structured interviews were found suitable because of the advantage of allowing a more flexible approach. It allowed the interviewees freedom to express themselves according to their frame of mind and the interviewer to probe freely beyond the answers where need be. Winget (2005:5) is of the opinion that, while its nature of 'semi-ness' allows a level of freedom in questions and responses, the 'structure' part provides a means to ensure consistency across interviews. In addition to that, the semi-structured interview allowed the interviewer to develop a relationship with the participant where negotiation, discussion and expansion of the responses occurred.

The interview schedule was developed based on the literature reviewed and research questions. Four interview schedules were developed for teachers, senior teacher staff development, school heads, and in-service education officers. All interview schedules were developed in line with the questionnaires. The interview schedules had about four (4) open ended questions. The following are some of the questions the participants responded to:

- Are there any structures in your school which facilitate teacher development?
- What are the barriers to continuing professional development of teachers?

Like any other instrument of measurement, interviews have both advantages and limitations and it is important that the researcher understands these beforehand. Some of these advantages and limitations are highlighted below.

### 3.6.2.1 Advantages of Interviews

According to Denscombe (2003:87), the following are some of the advantages of an interview:

- Questioning can be flexible as needed
- Direct contact during the interview allows for easy checking of accuracy and relevance (validity)
- High response rate as a result of flexibility scheduling

- Rewarding for interviewee because of the personal contact
- Produces particularly good depth of information and detail
- Valuable insights can be gained based on the depth of information generated
- Interviewee's priorities as to what they wish to emphasize can be respected.

### 3.6.2.2 Limitations of Interviews

Firstly, the effects of the interview may endanger the validity and the reliability of the results. Regarding this, Patton in McEvan & McEvan (2003:81) argues that responses could be distorted due to personal bias, anger, anxiety, politics and simple lack of awareness since interviews can be greatly affected by the emotional state of the interviewee at the time of the interview. Interview, data are also subjected to recall error, reactivity of the interviewee to the interviewer, and self-serving responses. In support of this view, Connolley (2007:5) asserts that a participant may respond differently to a question if interviewed by a woman compared to a man. This may specifically be seen when sensitive questions are asked. Secondly, because of time and financial challenges as well as the distance the researcher had to travel to carry out the interviews, only a small sample was used for the research – and a small sample may not be representative of the target population.

Interviews need to be conducted by experienced and skilled personnel who can correctly ask questions and make follow-ups if necessary. Marshall & Rossman (1999:110) argue that due to lack of expertise or familiarity with local language or because of lack of skill, the interview may not yield the intended results. Fourthly, some participants may be threatened by the presence of the interviewer with regards to the anonymity and consideration of the personal life of the participant. The effect is that respondents will not feel comfortable to give an appropriate answer (Bless & Higson-Smith, 1995:111). Muijs (2004:42) opines that an interview may be seen as intrusive and may result in non-cooperation.. This will be unfortunate because cooperation is viewed as one of the important 'ingredients' for successful interview (Marshall & Rossman, 1999:110).

Lastly, an interview will require that an appropriate place and time should be chosen. This is done to avoid distraction in the process and to avoid hurrying through the interview since these will really affect the results. In effect, the general preparation for the interview is very important and it includes preparation for recording the responses (Walliman & Baiche, 2001:240).

### 3.6.2.3 Piloting of Interviews

The interview instrument was not pilot tested. Two colleagues from the English Department at Tonota College of Education proofread the instrument. The interview instrument can be modified if certain questions appear to be ineffective (Gray, 2004:205). The researcher modified and rephrased some questions that the interviewees seemed not to understand easily during the interview. The researcher is of the view that if the interview instrument was piloted, the interviews may have run more smoothly. Strydom as cited in De Vos, (2005:294) is of the idea that if pilot tested, researchers have the chance to familiarise themselves with the modalities and practical aspects of "establishing access, making contact when conducting the interview, as well as becoming alert to their own level of interviewing skills".

### 3.6.2.4 Administration of Interviews

Fourteen participants were interviewed (four teachers, four senior teacher staff development, four school heads and two in-service education officers). Four schools were randomly selected from the seven schools in Francistown. One teacher was randomly selected from each of the four selected schools and two in-service education officers were randomly selected from ten in-service officers in Francistown Regional Office.

**Table 3.4:**Summary of Participants in the Study

| | Schools | Teachers | Senior teachers Staff Development | School heads | In-service Education Officers in North Region |
|---|---|---|---|---|---|
| Population | 33 | 1,300 | 33 | 33 | 10 |
| Sample responded to questionnaire | 7[a] | 240 | | | |
| Sample interviewed | | 4 | 4 | 4 | 2 |

a) Only schools in Francistown (7) were used in the study.

The researcher sent invitation letters to all participants inviting them to participate in the interview in support of the study. The interviews were conducted at times and locations convenient to the participants.

All interviews were carried out in the schools except for in-service education officers whose interviews were conducted in their offices. Participants were first made aware of the purpose of the interview, the questions that would be asked and that the discussions would be treated confidential. Each interview took approximately 45 minutes. It took the researcher approximately 10 days to complete interviews with the respondents.

A voice-recorder was used during the interview. McMillan & Schumacher (1993:432) assert that tape recording the interview ensures completeness of the verbal interaction and provides material for reliability checks. The researcher transcribed the recordings and compiled notes, which formed the basis for data analysis immediately after completing the interview. All participants responded in English.

## 3.7 CREDIBILITY AND DEPENDABILITY ISSUES

Concerns of validity (credibility) and reliability (dependability) of the results of the study are necessary for consideration when conducting research.

### 3.7.1 Validity

In the field of educational measurement, validity refers to the degree to which a test, tool or technique measures what it is supposed to measure. The definition is further extended to mean whether researchers can draw meaningful inferences from scores obtained about a sample population (Creswell, 2005:523). Validity of the findings can be checked in several ways and can be identified by taking into account the following:

- Checking to ensure that the findings have not been oversimplified and the conclusions are justified.
- Recognizing the researcher could have had an influence on the research, but ensuring this influence did not spill over causing biased findings.
- Exploring alternative explanations for the findings.
- Triangulating the findings with alternative sources.
- Providing the opportunity for the findings to be given to participants to obtain sufficient feedback.
- Considering how the findings and the conclusion fit with reference to the literature (Denscombe, 2003:97).

To ensure validity of the results of the current study, the researcher employed more than one instrument to collect data; questionnaires, interviews and literature review. The use of more than one instrument to collect data is called triangulation. According to Bryman (2007:16) triangulation is the use of more than one approach to the investigation of a research question in order to enhance confidence in the ensuing findings. By combining multiple methods and empirical materials, researchers can anticipate prevailing over the limitation or built-in biases and the problems that come from single method study.

Furthermore, the instruments were given to two independent language experts and two doctoral degree holder colleagues for content and face validity. This was meant to overcome two challenges: the uncovering of ambiguities and the certification of whether or not the tool would measure what it is supposed to.

In addition to that, a pilot test of the questionnaire was carried in one junior secondary school with a similar background to those intended for the study. The intention of this exercise was to detect and eliminate any ambiguities that might have been overlooked by colleagues and language experts to enhance the consistency of the tool. All data gathering instruments should be piloted to test how long it takes recipients to complete them, to check that all questions and instructions are clear and to enable the removal of any items which do not yield usable data (Bell, 2009:147).

Piloting of instruments enables the researcher to carry out a preliminary analysis to establish whether the wording and format of the questions present any difficulties when the main data is analyzed. Cohen et al. (2007: 241) argue that a pilot test has several functions, principally to increase the reliability, validity and practicability of the questionnaire. The questionnaire was piloted with twenty (20) Junior Secondary Schools teachers in Tonota and two items were removed from the questionnaire because they were impacting negatively on the reliability of the instrument.

### 3.7.2 Reliability

The reliability of a measurement refers to its consistency; that is, the extent to which a measuring device will produce the same results when applied more than once to the same person under the same conditions. If the data gathered by an instrument is not consistent, then the instrument is not reliable. Dependability or reliability refers to how one can be sure that one's findings are consistent and reproducible (Smith, 2003:2). McNeill & Chapman (2005:9) argue that if a method of collecting evidence is reliable it means that anybody else using this method or the same person using it at another time would come up with the same results. In other words, reliability means consistency or dependability of the method of collecting evidence.

This study used a Likert-type scale questionnaire for teachers. The measure of reliability employed in this study was Cronbach's alpha coefficient which measures the internal consistency for the scales or subscales used. Cronbach's alpha coefficient ($\alpha$) is designed as a measure of internal consistency; it helps to address questions such as: Do items within the

instrument measure the same thing? (George & Mallery, 2005:223). The value of Alpha varies between 0 and 1. The closer α is to 1.00 the greater the internal consistency of items in the instrument being assessed. Alpha (α) examines the homogeneity or cohesion of the items that comprise each scale. It is a measure that is equivalent to splitting data into two (just like split-half) in every possible way and computing the correlation coefficient for each split (Field, 2009). To improve on the value of α, Field (2009) recommends that items that do not add much value to the α-coefficient should be deleted from the scale. These items can be identified from the SPSS output under the column "Cronbach's Alpha if item deleted", and any item that has a corresponding value of alpha (α) that is substantially greater than the one for the overall α, should be deleted from the scale. According to Thompson and Shrigley (1986:336), a Likert-type attitude scale should have a mean between 2.00 and 4.00 with a standard deviation hovering around 1 and with neutral responses below 35%.

The teachers' questionnaire was piloted for reliability with a group of 20 teachers; using SPSS version 20 software, it yielded a reliability coefficient of 0.560 which is acceptable in education research. The mean for the items ranged between 2.182 and 4.636.

Data from teachers, senior teacher staff development, school heads and in-service education officers was collectively analysed. Methods of data analysis are discussed below.

### 3.8 DATA ANALYSIS

Data analysis is creating meaning out of raw data. The researcher analysed data in order to make the raw data more understandable to the readers. Bodgdan & Biklen (2007:175) argue that data analysis means a process of systematically searching and arranging the interview transcripts, field notes and materials that the researcher has accumulated to present findings. Data analysis involves working with data, organizing data, breaking data into manageable units, coding data and searching for patterns. In short, it is making sense of data in terms of the participants' understanding of the situation, by noting patterns, categories, themes and regularities. For the analysis to make more sense the analysis of the data collected must be performed in relation to the research problem and specific aims of the study.

Due to the fact that mixed method design was employed in this study and to accommodate both the quantitative and qualitative aspects of the research, the researcher engaged two techniques to analyse the data. Creswell (2005:520) states that, in using the mixed method design, the results from the quantitative data collection are directly compared with results from qualitative data collection, and quantitative and qualitative data are combined to form new variables.

### 3.8.1 Quantitative Data Analysis

Quantitative analysis implies the use of mathematical operations and statistical measures to investigate the properties of data gathered (Mbengwa, 2010:144). Quantitative analysis was employed to analyse responses from the closed questions of the questionnaires using Statistical Package for Social Sciences (SPSS version 20). The process of quantitative analysis started when the researcher coded the data, followed by capturing it in a spread sheet, cross checking for mistakes, analysing and interpreting. The analysis engaged both descriptive and inferential statistical analysis.

Descriptive statistics are mathematical techniques for organizing and summarizing a set of numerical data. Furthermore, descriptive statistics help to describe or show data in a meaningful way such that in case there are any emerging patterns from the data, these can be interrogated further and also allow for simpler interpretation of data. With regard to the data collected in this study, descriptive statistical analysis was mainly used to get the feel of the data set, its central tendency and its spread. Mean values, correlations and standard deviations were used.

To explore this data were presented in cross-tabulations. Cross-tabulation is a presentational device, whereby one variable is presented in relation to another with relevant frequencies inserted into each cell (Cohen et al., 2007:508). In other words, cross-tabulation is a way of showing whether or not there is a relationship between variables. For example, to establish if there is a relationship between a particular barrier to professional growth of the teacher and gender, a cross-tabulation of nominal data (male and female) in rows and ordinal data (the 5-point scale) in the columns would be generated using SPSS software.

The bulk of the data in this study comes from the 5-point Likert-Scale (30 items). The analysis for this part of the questionnaire went beyond describing the characteristics of the data and the examination of correlations between variables. Specifically, tests of statistical significance were employed to analyse this part (section B) of the questionnaire.

Tests of statistical significance can be grouped into two domains, parametric and non-parametric tests. Parametric statistical analysis tests rely on assumptions about the shape or variance of population scores. For example, scores being analysed are assumed to have been derived from a measure that has equal intervals or it is assumed the score are normally distributed and centred about the mean. Non-parametric statistics on the other hand are tests of statistical significance that do not rely on any assumptions about the nature of the data.

Furthermore, measures that yield categorical scores as is the case in this project are analysed using one of the non-parametric test statistics. In particular, Pearson Chi-square test ( $\chi^2$ ) was used. According to Robson (2002:160), Pearson Chi-square, in a contingency table, is a measure of the degree of association or linkage between two variables. It compares the observed frequencies to the expected frequencies one would get by chance if everything else is held constant (Field, 2009). A summary of the computation of $\chi^2$ is outlined below.

$$Chi-Square = \sum \frac{(observed_{ij} - Expected_{ij})^2}{Expected_{ij}}$$

Symbolically $\chi^2 = \sum \frac{(O_{ij} - E_{ij})^2}{E_{ij}}$

Where O- observed frequency

E- expected frequency

$i$ - represents rows in the contingency table

$j$ - Represents the columns

The expected frequencies are provided by SPSS when running the $\chi^2$ *test,* however, their computation from the contingency table follows the formula $\frac{(row\ total)(column\ total)}{grand\ total}$.

Degrees of freedom ($df$) = (number of rows -1)(number of column-1)

The $\chi^2$- value obtained from the calculations is then compared to the critical value corresponding to the level of significance. For this analysis the $\chi^2$- value is tested using a conventional significance level of $\alpha=0.05$.

The hypotheses guiding this analysis are:

$H_0$: The cross-tabulated variables are independent

$H_1$: The cross-tabulated variables are dependent

Assumptions of the Chi-square test

1 Each item should belong to only one cell of the contingency table (this is an assumption about the independence of data – mutually exclusive).
2 The expected frequencies should be greater than 5. (If frequencies are less than 5, cells can be combined.

Another reported statistic with the $\chi^2$- test is the Odds Ratio. This will be reported only for the statistically significant outcomes as a measure of effect magnitude (practical significance). The odd is the ratio of the probability of an event occurring to the probability of the event not occurring. In the context of this study, it is the number of cases in a specific category of a variable to the number of cases in the remaining categories of the variable. If the chances of an outcome occurring are equal to the chances of it not occurring, the odds are exactly 1. The further (or the higher) the odds ratio is from 1, the stronger the relationship is between the two variables (Field, 2009; Grimm & Yarnold, 2001:10).These will answer questions such as "What are the odds of someone being a Senior Teacher 1 given that the person is female?"

### 3.8.2 Qualitative Data Analysis

Qualitative data are information in non-numeric form. The data usually appear in textual or narrative format. Qualitative data analysis is the process of interpreting and understanding the qualitative data collected. Lacey & Luff (2005:3) explain qualitative data analysis as the mass of words generated by the interview or observational data which needs to be described and summarized. Gray (2004:319) argues that words have a more concrete and vivid flavour that is

more convincing to the reader as compared to information presented in numbers. However, there are challenges which researchers who analysed qualitative data have noted during the process of analysis. There are critics in terms of lack of approaches to analyse and narrate qualitative data. Moreover, there is an element of the researcher's subjectivity in data analysis and presentation. Researchers also noted that it is difficult to come up with common categories or headings.
In this study the sources of the narrative data were interviews of school heads, staff development teachers and in-service education officers. The researcher employed an inductive process of organizing data into categories and headings and noting relationships among patterns and seeking reasonable explanations.

In analysing qualitative data, firstly the researcher identified "present themes" (Taylor-Powell & Renner, 2003:3) as the initial stage of the analysis process. The researcher used the present themes already identified in the quantitative data analysis (Appendix E) to give direction on what to look for in the data. Blanche et al. (2006:322) identify the following steps for qualitative data analysis: familiarisation and immersion, inducing themes, coding, elaboration and interpretation and checking. The researcher followed these steps to analyse qualitative data. The Researcher familiarised himself with the collected data by reviewing field notes and listening repeatedly to audiotapes. The audiotapes were then transcribed into written text which was repeatedly read in order to get a general sense of what those interviewed said. After reading transcribed text, categories were worked out which were then coded.

In coding the qualitative data to match the present themes from the quantitative data, the researcher read the narratives a number of times underlining key words, phrases and sentences. Furthermore, a comparison of data from both qualitative and quantitative sources was prepared to merge and bring out findings on factors that impede continuing professional development of teachers in Junior Secondary Schools.

## 3.9 ETHICAL CONSIDERATIONS

All research involving groups of people interacting with each other has an element of ethical dimensions, and educational research is no exception. Ethical issues arise in quantitative, qualitative and mixed method approaches and in all stages of the research process, beginning with the researchers' choice of topic (Punch, 2009:50). Regarding ethical considerations, Wilson (2009:66) is of the view that ethical issues include obvious things such as acting with honesty and integrity; acting within the law, and 'doing what is right' and 'doing things right'. Punch (2009:51) summarizes the main ethical issues in social research as harm, consent, deception, privacy and confidentiality of data.

### 3.9.1 Informed Consent

Informed consent relates to the communication of all possible information, as accurately as possible to the research participants (De Vos, 1998:25-26). The research participants of this study are adults who have capacity to give consent directly. As a result, the research availed all the necessary information about the research to teachers, school heads, staff development teachers and in-service education officers and formally requested their permission to participate in the investigation through the Ministry of Education and Skills Development (APPENDIX A). The researcher shared with respondents' issues that relates to the goals, procedures of investigation and possible advantages and disadvantages of the study. Furthermore, prior to the interviews, the interviewees were informed of the researcher's intention to tape record the proceedings of the interview. Gray (2004:279) asserts that participants should be made aware of any recording or monitoring methods used during the entire interview processes so as to enable the interviewee a chance to decide to proceed with the interview or not. Gray (2004:279) further argues that the recorded material should not be released by the researcher unless permission has been sought and granted by the participants and that the tape recorded information should be used for research purposes only. The researcher assured the respondents of this and has so far held to the promise.

### 3.9.2 Voluntary Participation

Participation in this research was strictly voluntary. Respondents were at liberty to withdraw from the study at any time. This information was communicated to the participants before the research commenced.

### 3.9.3 Anonymity and Confidentiality

Thomas (2004:104) argues that research participants have the right to confidentiality and therefore "...the individual responses cannot be attributed to the respondent". The researcher also adhered to confidentiality and anonymity by assigning numbers instead of school names to questionnaires when capturing the data into the spreadsheet. To achieve this, the names and addresses of the data sources were not recorded, and every attempt was made to group the data collected so that personal characteristics or traceable details of the participants were not possible (Gray, 2004:389). The names of the interviewees were not disclosed during transcribing and analysis process.

## 3.10 SUMMARY

The methods of investigation used in the research were fully described and special attention was given to the description of the research strategy, design, and methodology. A detailed description of the teacher questionnaire and the interview schedule as instruments used to gather data and the justification of their use in the study have been provided. The chapter also highlighted the need to follow procedures in order to protect respondents' interest as well as other issues relating to ethical considerations. These procedures were strictly adhered to during the data collection phase of the research. As for the analysis of the results of the empirical investigation a description of the techniques for the analysis of qualitative and quantitative data was presented.

# CHAPTER FOUR

# RESULTS AND DISCUSSIONS

## 4.1 INTRODUCTION

The key purpose of this study was to investigate factors that impede professional development of teachers and establish if there are structures that facilitate teacher development in Junior Secondary Schools. Based on reviewed literature and the findings of the research, the study will propose continuing professional development models for Junior Secondary Schools. This chapter reflects on and discuses the major findings of the study and draws conclusions.

The presentation and discussion of the results in this study is divided into two sections: the first section presents the results from the questionnaire and interviews and the second section discusses the results from both instruments.

## 4.2 QUANTITATIVE DATA ANALYSIS

The questionnaire comprised two sections. Section A had four items on demographic issues and Section B had 30 Likert-type items. Out of the 240 questionnaires that were distributed, a total of 126 questionnaires (79 female respondents and 47 male respondents) were analysed. Questionnaire results are presented and discussed per research question.

### 4.2.1 Research Question 1

- **Are there any professional development programmes in your school?**

Items 18-30 in the questionnaire were developed to address the first research question. The responses to these items were captured on a five-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (5). These yielded categorical data which were analysed using Pearson's chi-square test ($\chi^2$-*test*) of goodness of fit. This was to investigate if the observed responses were as anticipated, to check if the observed frequencies were uniformly distributed

across categories of the responses. Before applying the $\chi^2$-*test*, categories were reduced from five to three by combining related options. Specifically, options SD and D were combined into just D and was rated 1; Neutral- remained neutral and was rated 2; SA was combined with A into just A with a rating of 3.This was to eliminate the ambiguous differences between not so different options such as 'agree' and 'strongly agree'. The results of the $\chi^2$-*test* are depicted in Table 4.1, under the column labelled $\chi^2$.

**Table 4.1:** *Results of the observed frequencies, $\chi^2$- test of goodness of fit, cross-tabulation of items with gender and mean values of the items*

| | | D | N | A | $\chi^2$ | $\chi^2$ Gender | $\bar{x}$ |
|---|---|---|---|---|---|---|---|
| 18 | At our school teacher development is considered important. | 27 | 38 | 61 | 14.33** | 5.41 | 2.27 |
| 19 | Teachers in my department are committed to staff development activities. | 33 | 27 | 66 | 21.00** | 9.70** | 2.26 |
| 21 | In my school there are staff development programmes in place which teachers are engaged in most of the time. | 54 | 29 | 43 | 7.48* | 4.70 | 1.9 |
| 22 | In my school, I have participated in different staff development activities such as workshops, meetings, seminars, team teaching, etc. | 11 | 15 | 100 | 20.33** | 1.06 | 2.7 |
| 23 | In my school the head fully supports teacher development. | 21 | 35 | 70 | 30.33** | 2.124 | 2.39 |
| 24 | There is a well-established mentoring system in my school. | 51 | 40 | 35 | 3.19 | 3.64 | 1.87 |
| 25 | As a department we do team teaching. | 27 | 24 | 75 | 39.0** | .222 | 2.38 |
| 26 | In my school newly-appointed teachers are assigned an experienced teacher to work with for a period of time. | 74 | 20 | 32 | 38.29** | 1.645 | 1.67 |
| 27 | In my school the head conducts classroom visits. | 40 | 17 | 69 | 32.33** | 7.184* | 2.23 |
| 28 | In my school there is an induction programme which all new teachers go through on arrival. | 29 | 15 | 86 | 59.48** | 4.402 | 2.42 |
| 29 | All new teachers should go through an induction programme for them to develop professionally. | 6 | 10 | 110 | 65.33** | .072 | 2.82 |
| 30 | In my school, I usually engage in conversations about ways to improve professionally. | 17 | 30 | 79 | 50.9** | 3.17 | 2.49 |

*Note.* * Significant at $p < .05$

**Significant at $p < .01$

All results were significant except for item 24 "*There is a well-established mentoring system in my school*".

| | Observed (0) | Expected (e) | (o-e) | $\frac{(o-e)^2}{e}$ |
|---|---|---|---|---|
| Disagree | 51 | 42 | 9 | 1.92 |
| Neutral | 35 | 42 | -7 | 1.17 |
| Agree | 40 | 42 | -2 | 0.095 |

The analysis for these items gave $\chi^2$ = 3.19; df = 2; p = .203. The $\chi^2$-value was very small, indicating that the observed frequencies and the expected frequencies were not very different. There was no significant difference. The low mean value ($\bar{x}$ = 1.87) in Table 4.1 for this item (item 24) indicated that generally teachers were in disagreement with the statement. There seem to be no appropriate mentoring system in schools. In addition, item 21 on the same subject "*In my school there are staff development programmes in place which teachers are engaged in most of the time*" although significant, the results were not overwhelming. It had a $\chi^2$ = 7.48, showing almost a uniform distribution of responses across categories. In addition, the teachers' responses were negative (less than the neutral value "2"). Teachers were disagreeing with the statement.

Overall, there are no staff development programmes in place in which teachers are engaged most of the time. That aside, generally the teachers viewed the listed items as appropriate structures which are (or should be) in place for staff development. Items that received negative responses are highlighted in the table and they indicate statements in which the teachers are disagreeing ($\bar{x} < 2$)

Measure for Research Question 1, were cross-tabulated with the demographic variables and significant results were observed only for the gender variable. Results for gender versus each of the items under Research Question 1 are shown in Table 4.1 under the column "$\chi^2$ - gender".

In general, the responses to most of the items were independent of gender except for two items (19 and 27). The two items with significant results were "*Teachers in my department are committed to staff development activities*" and "*In my school the head teacher conducts classroom visits*"(items 19 and 27, respectively). For these two items, the responses were associated with gender. Item 19 was highly significant with $p < .01$. The odds ratio (4.0) for item 19 indicated that the odds of a teacher agreeing that teachers in his/her department were committed to staff development activities were four times higher if the teacher was male than if female. On the issue of school visits, male teachers agreed more than their female counterparts that the head teacher conducted classroom visits.

In summary, the items that were listed in the questionnaire as measures for research question 1 "*Are there any programmes that facilitate continuing professional development of teachers in Junior Secondary Schools*?" were identified as significant indicators of the underlying construct in the question. That said, item 24, "*there is a well-established mentoring system in my school*", did not yield significant results. The mean value of teachers' responses on this item was negative ($\bar{x} = 1.87$ on a scale of 1 to 3) indicating that the mentoring systems in schools, if any, were not well established. Also, the observed frequencies were not significantly different from the expected frequencies. For this research question, a number of items were rated negatively (21, 24 and 26) indicating that the identified structures or programmes were not in place. That is, teachers were not in agreement that "in my school there are staff development programmes in place which teachers are engaged in most of the time" (21). Neither were they in agreement that "there is a well-established mentoring system in my school" (24).They also did not agree that "in my school newly-appointed teachers are assigned an experienced teacher to work with for a period of time" (item 26). The differences between the observed frequencies and the expected ones were statistically significant.

The analysis of quantitative data in relation to research question 1 revealed that there are no structures or programmes in Junior Secondary Schools which facilitate continuing professional development of teachers. Teachers are faced with many challenges in the process of teaching and learning in their schools. Therefore, there should be established structures in schools which assist teachers to grow professionally in order for them to be able to overcome these challenges

### 4.2.2 Research Question 2

- **What factors impede continuing professional development of teachers in Junior Secondary Schools?**

Items 1 – 17 in the questionnaire were developed as measures for the second research question. The responses to these items were also captured on a five-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (5) just like the other items analysed under research question 1. The same analyses which were carried out under Research Question 1 were similarly applied here. The response categories were also reduced from 5 to 3 (Disagree, Neutral, Agree) and $\chi^2$-*test* of goodness of fit was used. The results are in displayed in Table 4.2.

**Table 4.2:** *Results of the observed frequencies (D;N;A), $\chi^2$- test of goodness of fit, cross-tabulation of items with gender and mean values of the items*

| **Items (indicators) for research question 2** | | D | N | A | $\chi^2$ | $\chi^2$ Gender | $\bar{x}$ |
|---|---|---|---|---|---|---|---|
| 1 | School schedule are so tight that there is no time to engage myself in professional development activities. | 36 | 21 | 69 | 28.7** | 2.42 | 2. |
| 2 | Lack of appropriate rewards discourages me to partake in professional development activities | 14 | 10 | 92 | 91.6** | 1.03 | 2. |
| 3 | Senior Teacher Staff Development always facilitates staff development programmes. | 21 | 28 | 77 | 44.3** | 4.8 | 2. |
| 4 | Lack of support by school management in staff development activities hinders professional growth of teachers. | 36 | 25 | 65 | 20.3** | 2.4 | 2. |
| 5 | Staff development programmes I participated in made a significant impact on my student learning. | 19 | 29 | 78 | 47.5** | 1.5 | 2. |
| 6 | Lack of input by teachers in professional development activities designed for them hinders their professional growth. | 28 | 18 | 80 | 52.8** | 2.8 | 2. |
| 7 | Insufficient funding hinders professional development activities in our department. | 17 | 15 | 94 | 96.6** | .865 | 2. |
| 8 | In-service training opportunities are frequently available to only a few teachers. | 30 | 10 | 86 | 73.9** | .753 | 2. |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 9 | Externally organized staff development programmes add much value to professional growth of teachers. | 18 | 25 | 83 | 60.6** | 3.97 | 2 |
| 10 | I have a clear understanding of what teacher development entails. | 21 | 27 | 78 | 46.7** | 11.03** | 2 |
| 11 | Lack of input by teachers in the design and selection of in-service training programmes hinders professional growth. | 19 | 23 | 84 | 63.2** | 5.0 | 2 |
| 12 | Most in-service training initiatives are far much removed from school situation. | 29 | 39 | 58 | 9* | 1.96 | 2. |
| 13 | There is lack of continuity in the planning and execution of in-service training activities for teachers. | 21 | 27 | 78 | 46.7** | .187 | 2. |
| 14 | Staff development activities are inappropriately timed. | 27 | 33 | 66 | 21** | 8.95* | 2. |
| 17 | School- based staff development programmes address the teachers' areas of need in terms of professional growth. | 32 | 29 | 65 | 36.7** | 6.73 | 2. |

*Note*. * Significant at p <.05

**Significant at p < .01

The results for the goodness of fit test were all significant under each of the seventeen items. That is, the teachers responses across the three options (D; N; A) per item were not evenly distributed as would be the case with the expected frequencies. In other words, the observed frequencies in the three categories were different from the expected frequencies (42 per cell). The frequencies also indicate that the majority of the respondents were in the affirmative that the items listed in the questionnaire (1-17) were indeed some of the factors that impede continuing professional development of teachers in selected Junior Secondary Schools in the northern region in Botswana. This affirmative response was reiterated by the mean values which were all higher than 2 (on a 3-point scale)[1] with standard deviations ranging from .71 to .87 which indicated clustered responses (not many varied responses). Taking a few of the items as examples, the teachers viewed tight schedule (lack of time) as a significant barrier to their professional development. They also agree that lack of appropriate rewards discourage them from taking part in professional activities. All the items were highly significant at $p < 0.01$ except item 12 "*most of in-service training initiatives are far removed from school situation*" which was not that highly significant.

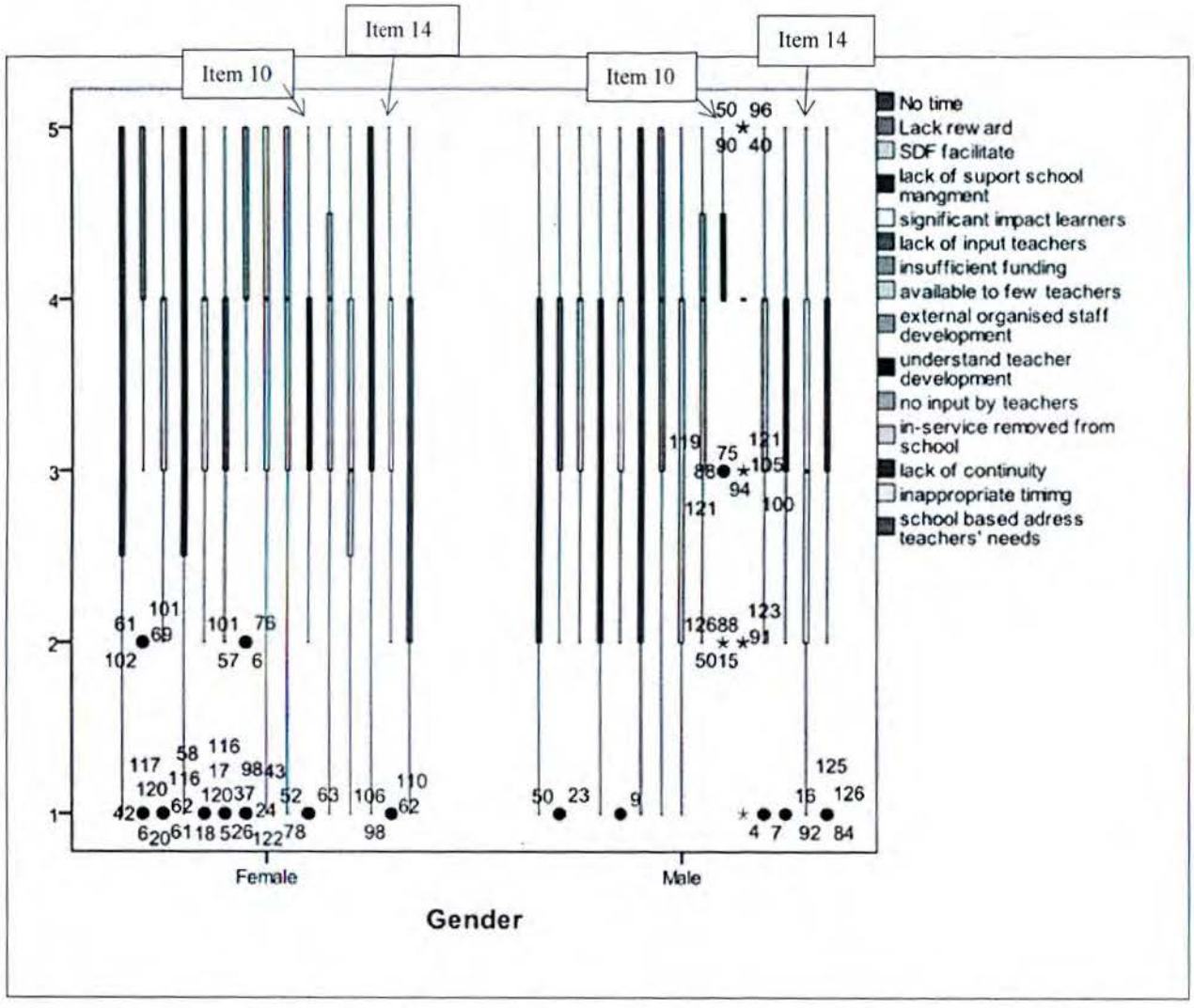
[1] Disagree = > 1; Neutral => 2; and Agree => 3. A mean value below 2 indicates a negative response and a value above 2 indicates a positive response.

To further explore the data, cross tabulation was done with the demographic variables. The results presented are only those that yielded significant outcomes. Gender differences yielded significant results for some items under the second research question.

(i) Results for *gender* versus each of the 17items under Research Question 2 (results in Table 4.2)

Generally, the responses to most of the items were independent of gender except for two items (10 and 14). Thus, teachers viewed the seventeen items as significant barriers to their teacher development irrespective of gender except for items 10 and 14.The results are in Table 4.2 under column "Gender". Item 10 was highly significant with $p < .01$. The odds ratio (3.45) indicated that the odds of a teacher *having a clear understanding of what teacher development entailed* were 3.45 times higher if the teacher was male. A visual representation of the 15 items grouped by gender is depicted in Figure 4.1 in the form of box-whisker diagram. Item 10, identified with labels and arrows in the gender graph above, indicates more positive responses from male teachers (almost all the male teachers had high ratings 4 & 5 for this item except for the few outliers) than from female teachers whose ratings stretched from 2 (negative response) to 5.

**Figure 4.1**: Boxplots for the 15 items grouped by gender.




With regard to item 14, (the boxplot before last, indicated on the graphs), the responses from the female teachers indicate a more positive response than male teachers. The boxplot for the female teachers has its median (black bar in the box) at 4while the one for the male teachers covered the whole range of responses uniformly from 1 (SD) to 5 (SA) with the median at 3. Overall, the male teachers were undecided on this item. This made the female teachers voices stronger. The odds for this item were such that female teachers would view *staff development to be inappropriately timed* twice as much as male teachers would.

In summary, all the items listed in the questionnaire in relation to the second research question were identified as significant barriers to continuing professional development of teachers in

selected Junior Secondary Schools in the northern region in Botswana. The participants' responses were not trivial on any of the items. In addition, most of the items were gender independent. That is, both male and female teachers viewed the listed items as barriers to continuing professional development of teachers. That said, some significant gender effects were noted for two items "*I have a clear understanding of what teacher development entails*" which indicated a more positive response from male teachers than from the female ones and "*staff development activities are inappropriately timed*" in which female teachers viewed staff development activities to be inappropriately timed more than did male teachers. Another revelation on the same item about staff activities being inappropriately timed was that more senior teachers than junior teachers viewed the staff development activities to be inappropriately timed. These two findings about this item are in agreement because there were more women in senior management (Senior Teacher I & II combined) than men.

The outcomes of the analysis of quantitative data established the following as some of the barriers to continuing professional development of teachers in selected Junior Secondary Schools in northern region in Botswana:

- Tight school schedule;
- Insufficient funding;
- Lack of support by school leadership;
- In-service training available to only a few;
- Lack of appropriate reward for professional growth;
- Lack of input by teachers in continuing professional development initiatives;
- In-service activities out of touch with school situation and
- Lack of continuity of continuing professional development activities

## 4.3 QUALITATIVE DATA ANALYSIS

To validate and authenticate the data obtained from teacher questionnaires relating to factors that impede and structures in school that facilitate continuing professional development of teachers: the researcher interviewed teachers, school heads, senior teacher staff development and in-

service education officers. In this section of the analysis the researcher presents the data obtained from interviews.

Interviews were held with four (4) teachers, four (4) senior teacher staff development, four (4) school heads of the seven (7) Junior Secondary Schools and two (2) in-service education officers in Francistown. Semi-structured interview questions covering the following areas were asked:

- Factors that impede continuing professional development of teachers in Junior Secondary Schools; and
- Structures in schools which facilitate continuing professional development of teachers in Junior Secondary Schools.

Included in this section is the analysis and interpretation of the responses of the participants with regard to the two key areas of the research which are stated above.

### 4.3.1 Research question 1

- **Are there any programmes/structures in schools that facilitate continuing professional development in Junior Secondary Schools?**

Below are views of the respondents with regard to the structures in schools that facilitate continuing professional development of teachers

> *Well its only staff development committee and that is the only one. (Teacher 1)*
> *Aah! We do have a staff development officer and somebody not trained. Once in a while there are in-service workshops sometimes in some schools there is induction of new teachers to familiarise them with what is going on in school. Basically that is all (Teacher 3).*

> *We have staff development committee (School head 1). We bank on staff development committee who do intensive induction programmes and we do lesson observation (school head 2).*

*To tell the truth the only structure we have currently will be staff development committee only. It is the one which host workshops (Senior Teacher Staff Development 1).*

Generally, there was agreement among the interviewees that the only available structure in schools that facilitates continuing professional development of teachers is the staff development committee. It could be deduced from the above statements that there are limited structures in schools which facilitate professional growth of teachers. There should be structures in schools which support teachers to overcome challenges they encounter in their profession. The issue of lack of structures in schools which facilitate professional growth of teachers as indicated verbatim by study participants is supported by Kolnik (2010) in section 1.1 of the study.

### 4.3.2 Research question 2

- **What factors impede continuing professional development of teachers in Junior Secondary Schools?**

The respondents indicated the following as factors that impede continuing professional development of teachers:

- **Insufficient Funding of Staff Development Programmes**

The general view of the interviewees with regard to the funding of the in-service education programmes was that it is insufficient. The funds availed to schools for continuing professional development of staff is far from being adequate. Interviewees pointed out that:

*Staff development programmes are not adequately funded. When you look at the vote that had been funded by the government that is used to resource or to fund such activities they do not amount to that much. ....there is a lot that teachers still need to do and the kind of information that they need. The vote is insufficiently funded (Teacher 4).*

*Sometimes the vote for staff development is three thousand pula (P3000-00). What can you do with three thousand pula (P3000-00) for workshops (Teacher 2)?*

*Insufficient funding is a hindering factor to teacher development. I will give you a typical example. This year we were given four thousand pula (P4000-00) to be used in twelve (12) months and we are supposed to hold various workshops for all the needs that we have identified. This money is going to be used in two (2) months. Funds are just limited (senior teacher staff development 1).*

*You find that teachers go for ten (10) to fifteen (15) years without being developed because there are no funds. (School head 3).*

It is clear that the respondents are of the view that in-service training programmes are not adequately funded and this is a barrier to teacher development. The quality of the education provided by any education system depends on the quality of the teacher. For a teacher to be of good standing is a continuous process. Therefore, it is imperative that sufficient funds should be availed for staff development programmes in schools. The issue of insufficient funding as indicated verbatim by research participants is supported by Ntapo (2009) in section 2.8 of the study.

- **Time**

It also emerged from the views of the participants that time is a barrier to continuing professional development of teachers. They believe that school programmes are congested and there is limited time for them to engage in professional development activities. Respondents said:

*School programmes are so congested that teachers volunteer to teach in the afternoons, weekends and even during vacation. So if they were to develop themselves or even if they were to plan for staff development workshop, time is so limited and it is restricted for results and results from students (Teacher 3).*

*School programmes are congested such that there is no room for teacher development (Teacher2).*

*Time is a barrier to professional growth of teachers because the nature of a teacher's duty is very engaging; you are engaged throughout the day. Nonetheless, on the other hand if you want to you can create time, more so that they are evening studies, schools. It is all about commitment (School head 1).*

It is evident from the views raised by the respondents that tight school schedules are a barrier to continuing professional development of teachers. Teachers need time to develop professionally for them to be able to execute their duties effectively and efficiently. Time as a barrier to professional growth of teachers as highlighted verbatim by research participants is supported by Boaduo (2010) and Kolnik (2010) in section 1.1 of the study.

- **Untrained Senior Teacher Staff Development**

Senior Teacher Staff Development teams are not trained on issues of professional development. As such they are not knowledgeable, skilled nor confident enough to handle issues of in-service training. Teachers are of the view that this incompetence is a barrier to teachers continuing professional development.

*No! No! Not at all. Senior teacher staff development is a teacher like anybody else. They also need to be taken for professional development in that field. They need to do human resource management courses or something of that kind so that they can know how deliver what is expected of them (Teacher 3).*

*Aah! We do have a staff development officer and somebody not trained (Teacher 1).*

*Ever since the post was implemented we have never really under gone any training to develop us or to prepare us sufficiently for the post (Senior teacher staff development 1).*

The responses of the participants clearly points out that Senior Teachers Staff Development are not competent on issues of teacher development. Therefore, they are unable to fulfil their mandate as facilitators of teacher development in schools. This hinders professional growth of teachers. The issue of untrained senior teachers staff development as a barrier to continuing

professional development of teachers as pointed out verbatim by the participants is supported by Boaduo (2010) and Kolnik (2010) in section 1.1 of study.

- **Teacher Motivation**

Lack of motivation by teachers also emerged as a barrier to continuing professional development of teachers. One teacher said:

> *It starts with the individual on joining the profession. The teacher forgets about research, reading, and about being involved on any other thing that develops them and just focuses on going to the class room teaching students (Teacher 1).*

Teacher motivation was viewed as another impediment to continuing professional development of teachers. Teachers' motivation is the most important factor that influences continuing professional development of a teacher. The teacher should see and accept the need to develop professionally. The issue of teacher motivation as an impediment to continuing professional development of teachers as highlighted by participants is supported by Kolnik (2010) in section 2.8 of the study

- **In-service Officers not trained for the Job**

The respondents indicated that they are not adequately skilled to fulfil their role of facilitating professional development of teachers.

> *We are failing because we do not have the knowledge. We do not have the skills to impart to the teachers. We still need to be trained in a way (In-service education officer2).*

> *The challenge that we have, so far as an in-service officer, we need to be in-serviced before you can go out and in-service other teachers... there is very little that we get from the office which can support us to go and support the teachers (in-service education officer1).*

What emerges from the views expressed by the in-service education officers is that they are not adequately trained to fulfil their mandate of facilitating in-service education in schools. The incompetency of in-service education officers to support in-service education in schools is therefore a barrier to teacher development because people who are supposed to be facilitating their growth are not skilled for the job. In-service education officers are a link between schools and the Ministry of Education and Skills Development on all issues relate to continuing professional growth of teachers. They are not able to do their job effectively and therefore issues of professional development of teachers are not well-represented at an appropriate forum where decisions are made. Lack of trained personnel as a barrier to professional growth of teachers as pointed out verbatim by the participants is supported by Boaduo (2010) and Kolnik (2010) in section 1.1 of study

- **Insufficient Manpower**

Another challenge that comes into view is that of inadequate manpower. One officer is responsible for more than three subjects which he/she has to facilitate professional growth of all teachers of these subjects.

> *We are thin on the ground. In my case I will be one officer looking after all the science subjects, Physics, Chemistry, Biology and Maths but I am a Biology officer. I am not well informed on issues that concern to Physics, Chemistry and Maths which means I have very little input in these subjects and this hinders professional development of teachers in these subjects(In-service education officer 2).*

> *Every subject should be represented. Instead of one officer doing five subjects that is a big problem (In-service education officer 1).*

It is evident from the responses of the respondents that in-service education officers in the Northern Region are not adequately resourced in terms of manpower. For the in-service education office to meaningfully fulfil its mandate, each subject must have an in-service education officer and the subjects specialists are better placed to understand the challenges of teaching and learning of the subject.

- **Unstructured in-service Education Programmes**

Participants indicated that in-service education programmes are not structured so that all officers in different regions do almost the same thing.

> *Another thing that I have realised is that our in-service education is not regularised. We do not know quite clearly that when a teacher comes into a school what should be done to this teacher. I have learned in other countries a teacher who is new at a school is given a mentor, the person she/he would be with all the time.....guiding this new teacher all the time in all aspects of teaching and learning. Also there are professional development programmes for teachers at different levels of teaching experience such as beginners (3years), five (5) years etc. I think that is what we need to do with our in-service training. Right now what is happening is that I do what I think is right; because even me I have never been inducted then I would be saying this is right when it is not (In-service officer 2).*

It is evident from the responses of the participants that there is no clear in-service training structure which guides in-service officers how to go about giving in-service training to teachers in schools. Every officer comes up with whatever he/she believes will support the teachers in the teaching and learning process and implementation. Clear teacher development programmes should be in place in order for teachers to be learning continuously. Teachers at different levels of teaching experience have different challenges with regard to the teaching and learning process. Targeted programmes for teachers of varying experience should be in place to address their challenges. Unavailability of professional growth structure as a barrier to teacher development as pointed out verbatim by study participants is supported by Kolnik (2010) in section 1.1 of the study.

The outcomes of the qualitative data analysis established the following as factors that impede continuing professional development of teachers in selected Junior Secondary Schools in the Northern region in Botswana:

- Tight school schedule;
- Insufficient funding;

- Inadequately skilled personnel;
- Unstructured in-service education;
- Demotivated teachers and
- Insufficient manpower

## 4.4 DISCUSSION OF THE RESEARCH FINDINGS

The findings of the study are discussed below. The first section of the discussion looked at the outcomes of research question 1 and the second part discussed the findings of research question 2.

### 4.4.1 Research Question 1

- **Are there any professional development programmes in your school?**

The outcome of quantitative data analysis reveals that there are no structures or programmes that facilitate continuing professional development of teachers. The qualitative findings indicate that the only available structure which facilitates teacher development is the staff development committee. Based on the outcomes of both qualitative and quantitative research findings, it could be deduced that there are limited structures that facilitate continuing professional growth of teachers in Junior Secondary Schools in Francistown area. The outcomes of this study concur with Bulawa (2003:87) and Bredeson (2003:98) who also established that there are no structures in schools which support professional development of teachers.

The basis of teacher quality is the provision of adequate opportunities for personal and professional growth of teachers. These prospects include amongst others structures or programmes in schools which will facilitate professional growth of teachers. Feinman-Nemser (2001:1014) argues that teachers require access to serious and sustained learning opportunities at every stage in their career if they are to be able to teach in ways that meet demanding new standards for student learning or to participate in the solution of educational problems. Liberman & Miller (1996:1050) classified CPD programmes into three types:

- direct teaching (such as courses, workshops and so on);

- learning in school (such as peer coaching, mentoring, action research, lesson study, group study) and
- out of school learning (such as learning networks, visits to other schools, school-university partnerships and so forth)

Programmes such as those outlined above by Lieberman & Miller (1996:1050) should be available in schools to enhance teacher development. Programmes such as coaching, mentoring, peer observation and lesson study should be established in schools to facilitate teacher development. The results of a study on lesson study model in United States of America showed that teachers exhibited increased subject matter knowledge, increased knowledge of instruction and increased capacity to observe students. Teachers also took part in stronger collaborative networks and made connections between their daily practice and their long-term goals (Perry et al., 2002:17). Furthermore, peer observations provide a supportive, blame-free environment that encourage and facilitate professional growth of teachers. In support of this view, Armour & Yelling (2004:209) argue that the process of observation and feedback facilitates discussion and exchange of practical and relevant ideas, which many teachers report as being crucial to the fruitfulness of the continuing professional development experience. Key to these professional development programmes discussed above is that they take place within the school situation and can be improved by sharing dialogue with colleagues.

The above discussed teacher development programmes i.e. learning in-school programme is aligned with the two theories of learning underpinning this study. The social constructivists are popularly held to be proponents of the central role of the social environment and interaction in learning (Liu & Mathews, 2007:388) and andragogy is a student-centred, experience-based, problem-oriented and collaborative approach to learning (Burns, 1993:52). In other words, these two learning theories promote teacher development models which embrace teacher collaboration and active participation of teachers in their design and implementation. Smith & Gillespie (2008:219) assert that professional development cannot be perceived as an event that happens on particular days in the school year but instead it must be part of the daily work of teachers, administrators and other stakeholders. Acquisition of new knowledge by teachers occurs every day as they interact with their colleagues and students. Continuing professional development

activities which are collaborative in nature and in which teachers actively participate include amongst others; lesson study, peer observation, coaching/mentoring and group study.

### 4.4.2 Research question 2

- **What factors impede continuing professional development of teachers in Junior Secondary Schools?**

The analysis of quantitative and qualitative data revealed that there are factors that impede continuing professional development of teachers in selected junior secondary schools in northern region in Botswana. Table 4.1 provides a summary of the barriers established by the study.

**Table 4.3:** Established barriers to CPD of teachers in selected junior secondary schools

| **Quantitative findings** | **Qualitative findings** |
|---|---|
| • insufficient funding | • insufficient funding |
| • tight school schedule | • tight school schedule |
| • lack of input by teachers in development of CPD programmes | • untrained senior teacher staff development |
| • lack of support by school leadership | • low teacher morale |
| • inappropriate timing of CPD programmes | • insufficient manpower |
| • available to few teachers | • unstructured in-service education |
| • lack of appropriate reward | • untrained in-service education officers |

The outcomes of both qualitative and quantitative analysis revealed that the time constraint and insufficient funding are factors that impede continuing professional development of teachers in selected junior secondary schools in northern region in Botswana. One can conclude that teachers in selected junior secondary schools in Northern region in Botswana regard these two barriers as major impediments to their professional growth. The findings of this study partly concur with King's (2004:3) research on continuing professional development in Higher Education which revealed that most of the respondents were of the view that time is the major barrier to undertaking continuing professional development. However, there are other barriers to

continuing professional development of teacher which were revealed by analysis of quantitative and qualitative data (see table 4.3).

What the study established as factors that impede continuing professional development of teachers in selected junior secondary schools in northern region in Botswana concurs with outcomes of studies conducted by Bezzina (2002), Bredeson (2003), King (2004), and Kolnik (2010) which also identify the following as barriers to teacher development:

- Inadequate funds available to support courses;
- In-service training opportunities frequently available only to few or a small number of teachers;
- Time constraints;
- Lack of trained personnel to oversee continuing professional development of teachers;
- Lack of support by school leadership; and
- Lack of ownership by teachers in professional development initiatives

#### 4.4.2.1 Time

It emerged from the results of the study that time is a constraint with regard to teacher development. It is very important that time should be availed for teachers to engage in teacher development programmes. Teachers need time both to make professional development an on-going part of their work on a daily basis (Bush, 1999:63) and to see the results of their efforts (Dorph & Holtz, 2000:70). Education systems of some countries, for example Germany, avail a significant amount of time to teachers to engage in professional development programmes. Teachers in these countries teach fewer classes and spend an average of 30 to 40 percent of their day out of the classroom conferring with students and colleagues in other professional activities (Darling-Hammond, 1996:6). These education systems avail time for teacher development because they recognise and appreciate the significance of continuing professional development of teachers for the provision of quality education for their nations.

The researcher is of the view that Botswana's education system should emulate approaches adopted by these countries in reducing the work load of teachers in order to make time available

for teacher development in schools. Currently, teachers in Junior Secondary Schools are over-loaded and this makes it difficult for teachers to embark on continuing professional development activities, neither can they visit colleague's lessons to observe and learn or guide. They are simply overwhelmed by all their different duties and responsibilities.

#### 4.4.2.2 Insufficient Funding

The results of the study revealed that inadequate funding of teacher development activities is a barrier to continuing professional development of teachers in selected schools in Northern region in Botswana. Funding of teacher development programmes is another critical component of continuing professional development of teachers. Teachers cannot become better teachers unless they continue to learn in their career. Therefore, funds must be availed for teachers to engage in teacher development programmes. Despite the fact that funding for teacher development is vital in effective professional development, available literature on teacher education reveals that it is a major challenge faced by teachers and educators worldwide. It was established that funding for professional development of teachers is low in many countries, as it is one of the first items to be removed from school budgets when resources are scarce.

However, in some parts of the world, schools have been creative in dealing with this challenge. Applewhite (1999) reports that a high school in Colorado created a Professional Development fund through the initiative of a group of teachers. In addition to that, Geiger (1996:183) suggests some form of professional development strategies that can help to keep costs down. These strategies include amongst others: to develop research teams or study groups in school; to have teachers teach other teachers in a particular aspect of teaching.

#### 4.4.2.3 School Leadership

Lack of support by school leadership emerged as one of the barriers to continuing professional development of teachers in Junior Secondary Schools. The leader's role is one of the influencing factors in the learning organisation. Quality professional development programmes usually begin with the instructional leaders. Haycook (1999:215) argues that one of the key roles of

instructional leaders is providing opportunities for continuing professional development of teachers.

Support by school management is very important for promoting teacher development and high quality education. If school managers are empowered, they will be able to play their social and technical roles more effectively (Mosha, 2006:163). The capacity of school management is the ability of the leadership to carry out its duties including supporting continuing professional development of teachers at school level.

#### 4.4.2.4 Lack of ownership by teacher

Another barrier to continuing professional development of teachers established by the study is lack of ownership by teachers of professional developmental initiatives. This means that teachers have minimal or no input in the decisions about the design of professional development activities and even when to participate in the activities. Continuing professional development is a learning process. The two theories underpinning this study are constructivist and andragogy. The constructivist and adult learning theorists argue that learning is a developmental process which requires active participation of the learner. These two theories advocate teacher development activities that promote active participation of the recipients in the design and implementation of the activities. In other words, teachers should have an input in the design and implementation of a teacher development programme for it to make a meaningful contribution to their professional growth and development.

Ownership of professional development programmes by teachers can be in the form of teachers reflecting on their field experience. Reflection is a means by which practitioners can develop a greater level of self-awareness about the nature and impact of their performance that creates opportunities for professional growth and development (Osterman & Kottkamp, 2004:100). It is through reflection that teachers can develop an understanding why certain teaching methods work and others do not work in their teaching. In support of this view, Lawler (1993:87) asserts that professional development that offers teachers choices about how and when to learn is likely to produce greater interest and more sustained involvement in learning. Furthermore, Smith & Gillespie (2008:219) assert that professional development cannot be viewed as an event which

takes place on particular days in the school year but instead it must be part of the daily work of teachers, administrators, and other stakeholders. Acquisition of new knowledge by teachers happens every day as they interact with their colleagues and students. Examples of teacher development programmes where teachers can actively participate in terms design and implementation are lesson study, group study, mentoring, coaching, and peer observation.

#### 4.4.2.5 Untrained personnel to oversee CPD of teachers

The outcomes of the study established that there is lack of trained personnel to manage continuing professional development of teachers is another barrier to teacher development in selected Junior Secondary Schools in northern region of Botswana. Education managers are essential in capacitating school management. Their responsibility is to interpret and supervise the implementation of education policy at their level of administration (URT 1995). Education managers have to plan and develop teachers as well as guide, direct and advise the school management on teacher professional development. The planning of teacher development programmes should be guided by the need of the teachers, examination evaluation, inspectorate and monitoring reports.

In the education system of Botswana, there are two officers managing continuing professional development of teachers. These two officers are the senior teacher staff development and the in-service education officer. One of the roles of the in-service education officer is to link up with the senior teacher staff development and school management teams in identifying the training needs of the schools or individual teachers. The primary responsibility of senior teacher staff development is to facilitate continuing professional development of teachers in schools. For these officers to effectively and efficiently deliver on their mandate, they should be knowledgeable and skilled in their job.

#### 4.4.2.6 Unstructured in-service education programme

The research findings highlighted unstructured in-service education programmes as one of the barriers of continuing professional development of teachers in selected junior Secondary Schools

in Northern Region of Botswana. This barrier to teacher development and growth was highlighted in the qualitative findings of the research. The research finding highlights that there is no continuing professional development policy framework which guides in-service education officers how to promote continuing professional development of teachers in schools. Examples of such policy framework are the Ethiopian Education and Training Policy of 1994 and South Africa National Policy Framework for Teacher Education and Development of 2006. The policy framework highlights all aspects relevant to continuing professional development of teachers such as: objectives of continuing teacher professional development; types of CPD; time for CPD; responsibilities of CPD stakeholders; and resources and materials to support CPD.

Based on the outcomes of the study and reviewed literature, the study proposes some teacher development models which selected junior secondary schools in the northern region in Botswana could adopt.

## 4.5 PROPOSED MODELS FOR CONTINUING PROFESSIONAL DEVELOPMENT OF TEACHERS

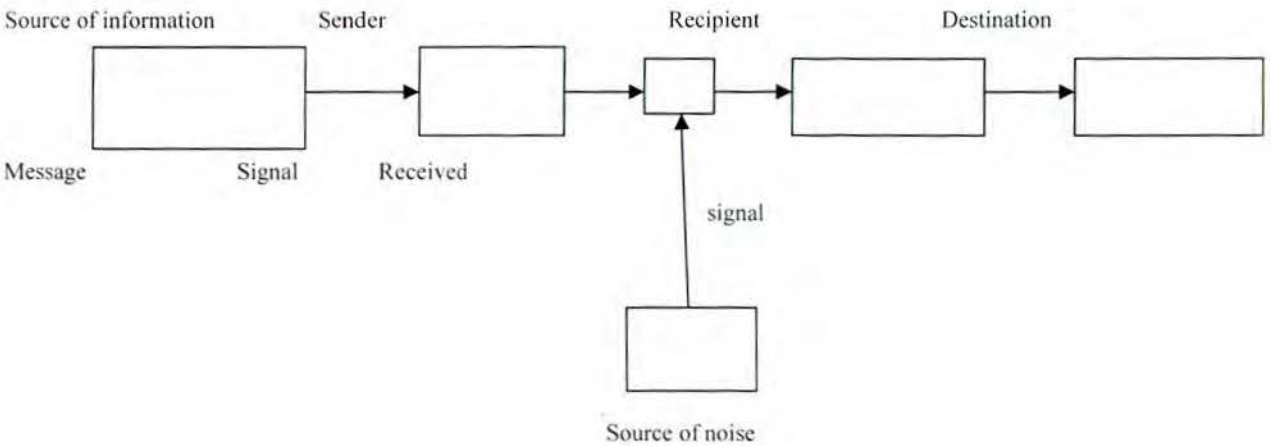
One of the aims of this research was to propose a model for continuing professional development of teachers in selected Junior Secondary Schools in the northern region in Botswana. Currently there is no model which the Ministry of Education & Skills Development has adopted for continuing professional development of teachers in Junior Secondary Schools. The researcher used information obtained from the literature as well as the outcomes of the study as the basis for the proposed model for teacher development in Junior Secondary Schools. It would be appropriate to deliberate on the concept of 'model' before the study proposes a model for continuing professional development of teachers in Junior Secondary Schools.

### 4.5.1 What is a model?

A model is an attempt to represent the dynamic aspects of the phenomenon by illustrating the relationships between its elements in a simplified form (Mouton, 2002:198). According to

Collins Cobuild English Dictionary (1987:1078), a model of a system or process is a theoretical description that can help you understand how a system or process works or how it might work. Steinmuller (1993) as cited in Kuhne (2005:1) understands a model as information: on something (content, meaning); created by someone (sender); for somebody (receiver) and for some purpose (usage text). In other words a model is a systematic drawing representing reality or a diagrammatic representation of a concept. Figure 2 below illustrates the concept of a model

**Figure 4.2**: Shannon and Weaver's (1984) model of communication (adopted from Mouton, 2002:197)




### 4.5.2 Proposed Model for Continuing Professional Development of Teachers

There is not one form or model of professional development which is superior to others. Therefore, schools and educators must assess their needs, cultural beliefs and practices in order to make a decision regarding the professional development model that would be most useful to their particular situation. It is apparent in literature that diverse factors within a workplace (one significant variable of the 'context'), such as school structure, can influence the teachers' sense of efficiency and professional motivation (Scribner, 1999:256). In other words, professional development has to be considered within the framework of social, economic and political trends and events. Furthermore, it should be noted that most professional development initiatives use a combination of models simultaneously, and the combinations vary from setting to setting.

This study is underpinned by constructivism and andragogy learning theories. The two theories of learning promote active participation and collaborative teacher development programmes. According to Liu & Mathews (2005:388), social constructivists are popularly held to be the proponents of the central role of the social environment and interaction in learning. Andragogy is a student-centred, experience –based, problem-oriented and collaborative approach to learning (Burns, 1995:233). These two theories popularise teacher development programmes which gives teachers a platform to work together and engage their experience. This view is shared by Smith & Gillespie (2008:219) who argue that professional development cannot be perceived as an event that happens on particular days in a school year but instead it must be part of the daily work of teachers, administrators, and other stakeholders. Acquisition of new knowledge by teachers occurs every day as they interact with their colleagues and students.

The teacher development model which embraces the two theories underpinning this study is the site-based/job-embedded. This model of continuing professional development embraces the learner-centred and collaborative learning approaches. Hord (1998) argues that professional development under the job-embedded model is located within the school programme or other local context as part of an effort to create on-going professional communities. The model is associated with the following professional development activities; lesson study, group study, and coaching or inquiry groups.

Teachers need to learn *in* and *from* practice (Ball & Cohen, 1999:20). Learning in and from practice allows other important components of effective professional development to occur. According to Ball & Cohen (1999:20), effective professional development has these important components:

- it gives teachers time to collaborate with other teachers and school colleagues
- it allows more sustained learning and professional development to occur since it becomes part of the work rather than an "additional" piece of work
- it allows work to be well-integrated in a very meaningful, concrete way that addresses specific problems teachers have in their own classroom

In support of this view, Putnam & Borko (2000:6) argue that the importance of grounding teacher training and learning in on-going practice is a necessary component in developing teachers' expertise.

Darling-Hammond (2006:10) argues that the approaches to teacher professional development such as study group, teacher networks, mentoring, coaching and other collaborative endeavours are believed to have more success in changing teaching practice. Furthermore, these approaches to teacher development incorporate components of effective professional development programmes. These components include amongst others; collective participation, content focus, promoting active learning, continuity and fostering of coherence.

For a professional development program to be effective, it must offer serious intellectual content, take explicit account of the various contexts of teaching and experiences of teachers, offer support for informed dissent, be on-going and embedded in the purposes and practices of schooling, help teachers to change within an environment that is often hostile to change, and involve teachers in defining the purposes and activities that take place in the name of professional development (Shanker, 1996:222). Effective professional development engages teachers in learning opportunities that are supportive, job-embedded, instructional, focused, collaborative, and on-going (Hunzicker, 2010:9). For example, in Lesson Study Model, teachers convene in small groups to set goals and plan a particular lesson together then one of the teachers' presents the lesson while others observe the presentation taking notes. The group then discusses how the lesson progressed and decisions are made whether to revise it or write it up in a form that can be shared with others. From the example described above, components of effective professional development can be established. These models were fully discussed in Chapter 2 of this study.

The outcomes of the study revealed that there are barriers to continuing professional development of teachers in junior secondary school in Northern region of Botswana. It further established that there limited structures in schools which enhance the continuing professional development of teachers.

The factors that impede continuing professional development of teachers which the study established included ; insufficient funding, time constraints, lack of input by teachers in development of CPD activities, and lack of relevance of CPD activities to school situations. The site-based model of professional development which the study proposed for the schools will minimise the effect of these barriers established by the study. Site-based teacher professional development activities are located within the schools, at departmental levels in some instances. Therefore, there are no costs for teachers' transport, lodging and/or meals. At departmental level, teachers can share challenges they encounter in their classrooms and come up with solutions to these challenges formally or informally. This could save time.

The site-based model of teacher development enhances the spirit of team work which leads to teacher commitment to work, encourages teachers to be reflective practitioners and enhances the school's culture as a learning organisation. When teachers plan lessons together, or observe each other's lessons, they motivate each other. The teacher's motivation is the most important factor that influences continuing professional development of a teacher. A teacher's intrinsic drive towards self-improvement cannot be matched with any amount of pressure from educational mangers. The teacher should see and accept the need to develop professionally (Komba & Nkumbi, 2008:72).

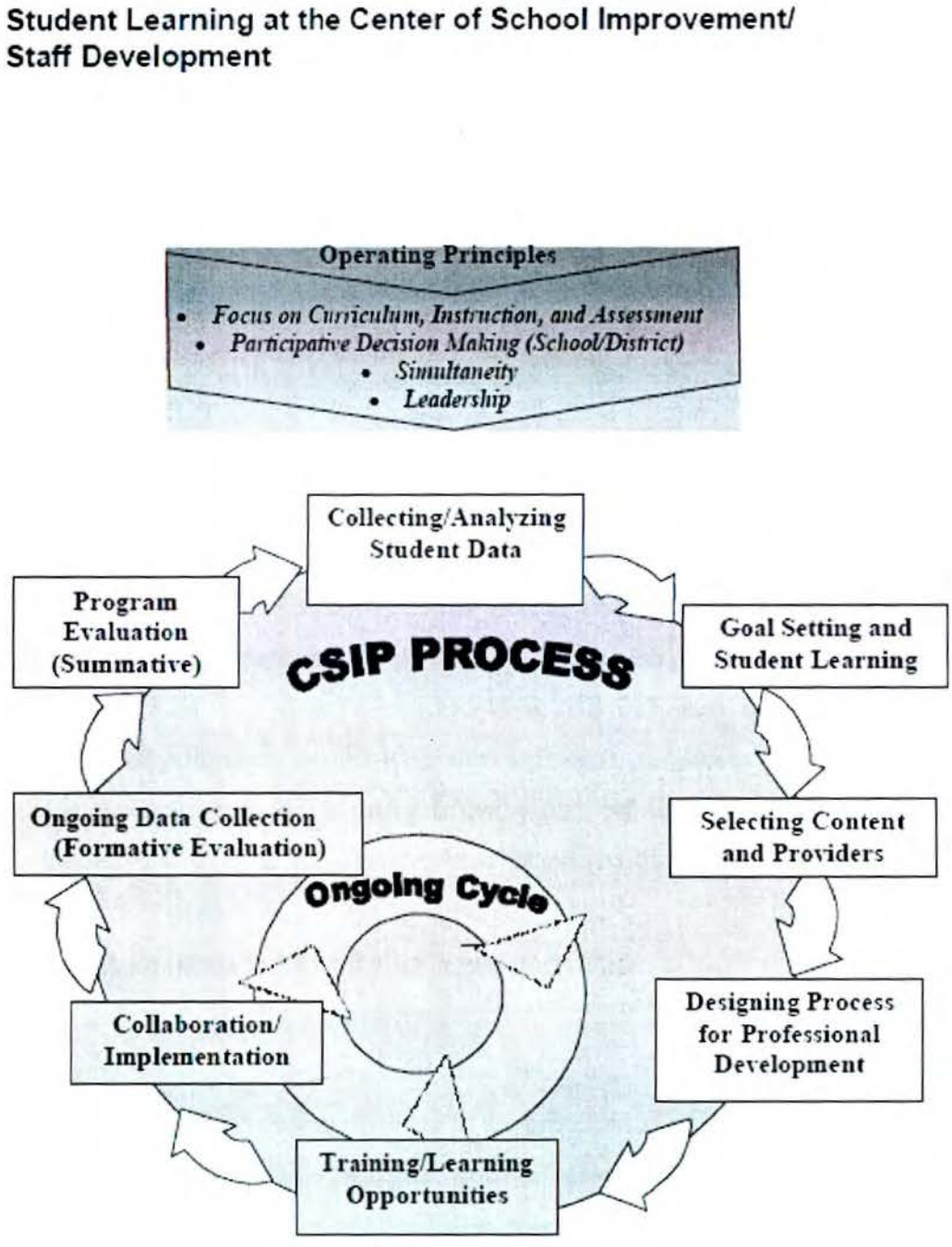
Sharing of knowledge by teachers through site-based models of professional development creates a supportive environment for the school's culture as a learning organisation. Culture is the way we do things and relate to each other (Hargreaves & Fullan, 1992). The site-based model promotes a culture of team work and learning from each other which is an ingredient for successful professional development. Education systems have adopted/developed different site-based models of teacher development. The Department of Education in the State of Iowa, USA, developed The Iowa Professional Development Model for teachers. The study proposes that Junior Secondary Schools in Northern Botswana should adopt The Iowa Professional Development Model. The model is fully discussed below.

#### 4.5.2.1 Iowa Professional Development Model

Although professional development may take many forms and follow many processes, this model is appropriate for Junior Secondary Schools for several reasons. First, it advocates professional development which supports "best teaching practice" and translates into improved student learning in all areas. This is in line with the Revised National Policy on Education of 1994 which calls for quality teaching in schools. Secondly, the intent of this model is to provide a structure for continuing professional development that is focussed, collaborative, and that directly supports school improvement goals for student achievement. The third reason is that the model is a collaborative effort of all stakeholders which includes amongst others, representatives of the Department of Education, professional organisations (teachers, administrators, and school boards), local education agencies (LEA), higher education and other providers of professional development in the state of Iowa. The model reflects their study, collaboration, reflection, and negotiation and provides an invaluable roadmap to staff development for the educators in Iowa (Iowa Department of Education, 2002:1). Stakeholder involvement is very important in the development of a teacher development model.

**Figure 4.3: THE IOWA PROFESSIONAL DEVELOPMENT MODEL.**

(adopted from Iowa Department of Education, 2002:3)




CSIP – Comprehensive School Improvement Plan

The model depicted graphically in Figure 4.3 is comprised of two sections: the Operating Principles and the Cycle of Professional Development. The components are described below.

**The Operating Principles**

The Iowa site-based professional development model is built on four operating principles. These principles are; focus on the curriculum, instruction and assessment; participative decision making; strong leadership; and simultaneity

- **Focus on Curriculum, Instruction, and Assessment**

The ultimate goal of effective continuing professional development of teachers is to improve student learning. Professional development programmes are systematic efforts to bring about change in the classroom practices of teachers, in their beliefs and attitudes, and in the learning of students (Guskey, 2002:381). To achieve this broad aim of improving student learning, professional development programmes should focus on the curriculum, instruction and assessment. In support of this view, Kennedy (1998:100) indicates that, compared to more general professional development, professional development that focuses on specific content and how students learn content has a larger positive effect on student achievement outcomes, especially achievement in conceptual understanding. In addition, professional development should:

- deepen teachers' knowledge of the subjects being taught;
- sharpen teaching skills in the classroom;
- keep up with developments in the individual fields, and in education generally;
- generate and contribute new knowledge to the profession; and
- increase the ability to monitor students' work in order to provide constructive feedback to the students and appropriately redirect teaching (The National Commission on Mathematics and Science Teaching for the 21$^{st}$Century, 2000 as cited in Harwell, 2003:4).

Based on the arguments raised above, professional development of teachers should focus on the curriculum, instruction and assessment. These three components are essential in the enhancement of student learning.

- **Participative Decision Making**

This study established that one of the factors that hinder professional development of teachers is lack of teacher participation in the development of professional development activities. In other words, teachers are not part of the decision-making process regarding their professional growth. Participative decision-making is one of the cornerstones of the Iowa Professional Development model. The argument for participative decision-making to govern collective staff development efforts is deeply rooted in our democratic traditions, namely that those affected by laws and policies should have a voice in shaping those laws and policies (Iowa Department of Education, 2002:12).This principle emphasises the need for teacher involvement in teacher development programmes planned for them.

- **Leadership**

The outcomes of this study revealed that one of the impediments to continuing professional development of teachers in junior secondary schools is lack of support by school leadership. This revelation by the study highlights the significance of school leadership in professional development of teachers. The Iowa Professional Development Model recognises the importance of school leadership in effective professional development of teachers. The importance of leadership, at all levels, cannot be overemphasised for the success of school improvement efforts in which increased student learning is the goal (The Iowa professional Development Model, 2002:13). In support of this view, Mclaughlin & Marsh (1978) as cited in Harwell (2003:2) asserts that professional development can succeed only in settings, or contexts, that support it. Probably the most critical part of the support must come from administrators. The outcome of every professional development initiative will depend ultimately on whether its administrators consider it important. For this reason the buy-in on the part of administrators (whether state directors, superintendents, or principals) is critical to success. Furthermore, Dillion-Peterson

(1986) argues that the overall effectiveness of the school is directly influenced by the school head. Her /his role includes facilitating, brokering, providing resources, encouraging, commanding, questioning, coaching and cheerleading.

- **Simultaneity**

This operating principle of the Iowa professional development model advocates a holistic approach to teacher continuing professional development. In some instances teacher development activity may focus on the content to the exclusion of the context. To accomplish student achievement gains, focusing on new content is the priority but simultaneously issues of context (e.g., leadership and resources, the development of a learning community) and process (e.g., data collection and analysis, design of training and collaboration) may also need to be addressed (Iowa Department of Education, 2002:12).

**The Cycle of Professional Development**

The second section of the Iowa Department of Education Professional Development Model is the cycle of professional development. The cycle of professional development highlights all the key stages of teacher development in the model. These stages include: collecting and analysing student data; goal setting; selecting content; designing the process; on-going cycle and programme evaluation (see figure 4.3).

- **Collecting and Analysing Student Data**

The role of the teacher in the success of every student is of paramount importance in all educational situations. Wei et al. (2009:4) assert that effective professional development focuses on improving instructional practice by giving teachers new knowledge and techniques for assessing learning with the ultimate goal of improving the learning of students. The Iowa Department of Education Professional Development Model proposes that the first step in designing professional development which intends to improve student learning is to identify student needs. In order for the school to set priorities for the development of teachers it has to

collect and analyse data about students' performance in areas of interest. Teacher development programmes should be aligned with student needs so that they meaningful contribute to student learning.

- **Goal Setting**

The next stage of teacher continuing professional development as proposed by the Iowa Department of Education is the stating of goals from the analysed student information. In other words, what has the analysed student data revealed as the gap with regard to student learning? For example, when the analysis of student data highlights poor mathematics achievement, close examination of test data (e.g., item analysis) can assist schools to establish if the challenge is generalised across all areas of mathematics or specific to problem solving, number concepts, algorithms or application of mathematics skills in real-world situations. Definite objectives allow departments in schools to make an exact decision on what they need to learn and provide focus all the way through an improvement effort (Iowa Department of Education, 20002:17).If the analysis of student data reveal multiple needs it is important that the school or department focuses on only one or two goals at a time.

- **Selecting Content**

After establishing the area of need, the next stage in the cycle of professional development of the Iowa Professional Development Model is the selection of the content and content providers. The content is the knowledge required to achieve the set goal. The knowledge is then scrutinised to establish if external assistance is required. Once content and process are determined, a school/department is then prepared to choose the person or persons who can offer training in the new content and to negotiate the process they want in order to learn the new material. For example, if analysed student data revealed that science process skills is an area of need by student then the school approaches providers of instruction in science process skills and bargains for adequate instruction and demonstrations to ensure mastery of the new instructional tactics (Iowa Department of Education, 2002:19).

- **Designing the Process**

The designing process stage in the cycle of professional development advocates for teachers to have opportunities to learn and implement new curriculums, instructional strategies and assessments. If teachers have opportunities to learn new content and implement it in their classrooms, the investment in professional development will pay off in increased student learning (Iowa Department of Education, 2002:20). In other words, time must be availed in schools for teachers to participate as well as implement what they acquired in professional development initiatives. Teachers need time both to make professional development an on-going part of their work on daily basis (Bush, 1999:62) and to see that the results of their effort (Dorph & Holtz, 2000:71).

One of the challenges of continuing professional development of teachers established by this study is time constraint. Teachers have limited or no time to engage in professional development activities and implement new instructional tactic or assessment they have learnt because of their tight school schedule. The depth of knowledge and practice expected of a teacher has increased over the years. As a result, teachers, researchers, and policy makers consistently indicate the greatest challenge to implement effective professional development is lack of time (Abdal-Haqq, 1996:71).

- **Training/learning Opportunities**

This stage in cycle of professional development of the Iowa Professional Development Model advocates training/learning opportunities for teachers. Training settings (learning opportunities) are the time set aside for the participants to come together and learn new content they have selected to address student achievement concerns (Iowa Department of Education, 2002:21).Teachers in countries such as Germany, Japan and China have a significant amount of time to engage in their professional development programmes. In these countries, teachers teach few classes and spend an average of 30% to 40% of their day out of the classroom conferring with students and colleagues on their professional activities (Darling-Hammond, 1996:6). The

outcomes of this study revealed that training/learning opportunities of teachers in northern region of Botswana is one of the challenges of teacher continuing professional development.

New learning requires a longer time than the typical one-shot workshop if the new learning is to have a meaningful impact in the classroom. It has been established that conventional approaches to professional development, such as one-time workshops, usually do not lead to noteworthy change in teaching methodologies (Hawley & Valli, 1992:21)

- **Collaboration/Implementation**

This stage of the cycle of professional development promotes collaboration of teachers as an effective tool for the implementation of what teachers have learned in their training. Teachers working to put into practice changes in their classroom tradition need the colleagueship of peers to overcome challenges inherent in learning new behaviours and teaching them to their students. A plan of implementation of practices that bring change in classroom tradition will provide the structure for teacher collaboration. This includes the time for teachers to meet on a regular basis and the structure for the tasks to be addressed during the time (Iowa Department of Education, 2002:22).

The aspect of teacher collaboration is critical in continuing teacher professional development. The advantage of teachers working together is the opportunity to deliberate on problems that arise during professional development initiatives. Ball & Cohen (1999:15) argue that collective participation in the same activity can provide a forum for debate and improve understanding which enhances teachers' capability. Furthermore, collective participation in professional development may help to contribute to a shared, professional culture. This is when teachers in a school or teachers who teach the same grade or subject develop a general understanding of instructional goals, methods, problems and solutions (Talber & McLaughing, 1993:199).

- **On-going data collection**

Another key stage of the cycle of professional development of the Iowa professional Development Model is the on-going collection of data when a professional development initiative is implemented. School require data-gathering instruments about student reactions to changes in the instructional program when they put into practice new curriculums and instructional strategies aimed at enhancing students' learning in specific areas (Iowa Department of Education, 2002:23)

- **Programme Evaluation**

Programme evaluation provides feedback on whether the professional development initiative was effective or not. Programme evaluation addresses the question "Does this intervention work?" (Iowa Department of Education, 2002:24). Analysis of summative evaluation and formative evaluation data provides feedback on whether the intervention worked or not. There are two factors that determine the effectiveness of a professional development programme. These factors are: was the content implemented as planned or not, and did the students attain the required knowledge/skills/behaviours. Student learning outcomes are the measuring tool of the effectiveness of a teacher professional development program. In other words, a professional development programme is successful when it achieves its student learning goals.

- **On-going Cycle**

The on-going cycle in the Iowa Department of Education Professional Development Model highlights the factor that teacher professional development is a continuous process rather than a one-time event. In other words the Iowa Professional Development Model recognises that teacher development is a continuous process. Reviewed literature also recognises this critical component of teacher professional development. Kolnik (2010:54) argues that during their careers, teachers face strong demands to update their knowledge and skills continuously due to the introduction of new curricula; changes in technology; changes in learning needs by students or in the light of new research on teaching and learning. This view is shared by Feinman-Nemser

(2001:1014) who asserts that teachers require access to serious and sustained learning opportunities at every stage in their career if they are to be able to teach in ways that meet demanding new standards for student learning or to participate in the solution of educational problems. Therefore teachers need appropriate on-going in-service training which enables them to build fruitfully on the foundations of their initial training.

Reviewed literature classified teacher development models into three categories; site-based, self-directed and standardised teacher professional development (Gaible & Burns, (2005) cited in Hooker, 2008:3). The site-based teacher professional development model advocates on-going teacher professional development. Hord (1998) posits that professional development under the job-embedded model is located within the school programme or other local context as part of an effort to create on-going professional development communities. In support of this view, Smith & Gillespie (2008:219) argue that proponents of this model claim that professional development cannot be viewed as an event that occurs on certain days in the school year but rather must be part of the daily work of teachers, administrators, and other stakeholders in the system. Teachers acquire new knowledge everyday as they interact with their students and their colleagues. Teachers informally sharing with colleagues what transpired in their classrooms are an example of the daily professional growth of teachers. Furthermore, the aim of the site-based teacher development model is to develop teacher knowledge in content area, analysing student thinking, and identifying how the knowledge can be applied to changes in instructional practices tailored to the local education context (Smith & Gillespie, 2008:219). Professional development activities associated with this model include amongst others, lesson study, coaching, peer observation, and group study.

If new content is to be learned and implemented in classrooms so that students benefit, teachers need on-going training, the colleagueship of peers as they plan and develop lessons and materials and study their implementation, and interim measures to judge the success of their efforts(Iowa Department of Education; Executive Summary, n.d.). Therefore this model of teacher professional development is more inclined to the site-based category of teacher professional development.

However, even though this research proposes site-based teacher professional development models to be adopted by Junior Secondary Schools it does not discard outright the traditional teacher professional development models. The traditional teacher professional development models are widely criticised because they are seen as detached from the classroom realities and focussed on mastering new and complex curriculum terminology rather than on the essence of the teaching - learning process. There are instances where these standardised teacher professional development models are effectively engaged in the professional growth of teachers. For example, if the education system introduces a new syllabus, the most appropriate approach to effectively share information with regard to the new syllabus would be through the traditional teacher professional development approach. These models are best utilised to disseminate information and skills to a large number of teachers.

When training approaches are built into a long-term professional development plan with follow-up time regularly scheduled for discussion and reflection, or when they are designed as part of a larger professional development plan that includes other types of activities such as curriculum modification or case discussion, they can have an impact on both teacher practice and student achievement (Loucks-Horsley et al., 1998:102).

## 4.6 SUMMARY

The findings of the research established that there are factors that impede continuing professional development of teachers in selected schools. These factors include amongst others, tight school schedules, insufficient funding and untrained staff development teachers. The findings also revealed that there are limited structures to facilitate teacher development in the selected Junior Secondary Schools. Finally the study proposed the site-based/job-embedded Iowa Professional Development Model to be adopted in selected Junior Secondary Schools in the Northern region in Botswana.

# CHAPTER FIVE

# SUMMARY, CONCLUSION AND RECOMMENDATIONS

## 5.1 SUMMARY

The aim of this study was to establish if there are structures or programmes which facilitate continuing professional development of teachers and to investigate factors that hinder teacher development in Junior Secondary Schools in Botswana. Based on the reviewed literature and the study findings, it proposed continuing professional development models which Junior Secondary Schools could adopt.

This section presents a summary of the findings of the study. The summary is divided into two sections, each section providing a snapshot of the results on a particular research question.

Research questions:

1. **Are there any structures or programmes that facilitate continuing professional development of teachers in Junior Secondary Schools?**

With regard to the above research question the findings revealed that:
There are no structures in schools which facilitate continuing professional development of teachers in Junior Secondary Schools. The study outcome nullifies hypothesis number (i). For this Research question, a number of items were rated negatively (21, 24 and 26) indicating that the identified structures or programmes were not in place. That is, teachers were not in agreement that *"in my school there are staff development programmes in place which teachers are engaged in most of the time"* (21). Neither were they in agreement that *"there is a well-established mentoring system in my school* (24).They also did not agree that *"in my school newly appointed teachers are assigned an experienced teacher to work with for a period of time"* (item 26).

2. **What factors impede continuing professional development of teachers in Junior Secondary Schools?**

The findings of the study revealed that there are factors that impede the continuing professional development of teachers in Junior Secondary Schools. The outcomes nullify hypothesis number (ii). The frequencies also indicate that the majority of the respondents in the affirmative that the items listed in the questionnaire (1-17) were indeed some of the factors that impede the continuing professional development of teachers in Junior Secondary Schools. This affirmative response was confirmed by the mean values which were all higher than 2 (on a 3-point scale)[2] with standard deviations ranging from .71 to .87 which indicated clustered responses (not much varied response). The factors that hinder professional development of teachers revealed by the study include amongst others:

- Time constraints;
- insufficient funding; and
- lack of support by school leadership.

## 5.2 CONCLUSION

Continuing professional development is core in all professions. It is an instrument that keeps professionals up to date with new knowledge, skills and competencies in their profession. If professionals were not up to date with the new developments in their profession then it would result in them failing to discharge their duties effectively and efficiently. As in all other professions, continuing professional development is an important component for teachers. Therefore, for teachers to be better placed to discharge their duties effectively and efficiently, teachers should be learning continuously throughout their career to deepen their expertise and enhance their practice. Regarding this aspect, Loucks-Horsley et al. (2002) argues that teachers need to engage with others to learn what works under what circumstances to develop as *"connoisseurs of effective practice"*.

Nevertheless, this research established that there are challenges with regard to continuing professional development of teachers in selected junior secondary schools in the northern region of Botswana. It surfaced from the study that there are factors that impede professional development of teachers in Junior Secondary Schools. These hindering factors include amongst others: tight school schedules for teachers; insufficient funding of teacher development programmes; unstructured teacher development programmes; inadequate staff development and in-service education officers, and lack of motivation by teachers. Furthermore, it emerged from the study that the only available structure in schools which could facilitate teacher development was the staff development committee. Based on the outcomes of the research findings, the study proposed models of teacher development which schools could adopt. These models included amongst others: Lesson Study Model, Coaching/Mentoring Model and Group Study Model.

The research concluded that there are factors that impede the professional development of teachers in Junior Secondary Schools and also that structures which could facilitate teacher development are almost non-existent in schools

## 5.3 RECOMMENDATIONS

The following recommendations were made with regard to barriers to continuing professional development of teachers in Junior Secondary Schools.

- **Adequate Funding for Teacher Continuing Professional Development Programmes**

The Department of Teacher Training & Development should review the budget for teacher development so that more funds can be availed for teacher development programmes.

- **Formulation of a National Policy Framework for Continuing Professional Development of teachers**

The Department of Teacher Training and Development in conjunction with all other stakeholders should formulate a National Policy Framework for continuing professional development of Teachers. This policy framework will act as a guide for all teacher development programmes.

- **Training of In-service and Senior Teacher Staff Development Officers**

Teachers who are appointed to positions of responsibility need to be equipped with necessary knowledge and skills in order for them to be able to discharge their duties effectively and efficiently. The supervisory department, in this case the Department of Secondary Education should ensure that there are programmes in place so that newly appointed officers can be trained in their respective areas of appointments.

- **Tight School Schedule**

The Ministry of Education and Skills Development should seriously consider reducing the workloads for teachers in schools. A lighter workload for teachers will give room for teachers to embark on teacher development programmes, particularly site-based ones. As a result schools will have better teachers and hence an improved student performance.

- **Site-based Professional Development Model**

Based on the outcomes of the study, a site-based teacher continuing professional development model is recommended. The recommended model should take the form of the Iowa Professional Development Model

- **Suggestions for Further Research**

  - Research should be conducted to establish how effective teaching practice is for student teachers of Tonota and Molepolole College of Education.
  - Do teacher education programmes in colleges of education sufficiently equip student teachers with knowledge and skills that help them to engage in self-directed teacher development programmes?

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**APPENDIX A**

**REQUEST LETTER TO THE PERMANENT SECRETARY (PS) MINISTYR OF EDUCATION AND SKILLS DEVELOPMENT**

P/Bag T3
Tonota
12/01/12

The Permanent Secretary
Ministry of Education & Skills Development
P/Bag 005
Gaborone
Dear Madam

**REQUEST FOR PERMISSION TO CONDUCT A RESEARCH IN CONTINUING PROFESSIONAL DEVELOPMENT OF TEACHERS FOR DOCTORAL DEGREE**

This serves as a formal request to your office that I be permitted to conduct a research in seven Junior Secondary Schools in Francistown. The sample schools that will be involved in the study are:

Goldmine JSS, Motsamaisa JSS, Selepa JSS, Donga JSS, Setlalekgosi JSS, Selolwe JSS and Mmei JSS.

I am a lecturer at Tonota College of Education and currently doing part-time studies at the North-West University in South Africa for my doctoral degree (PhD) Educational Management.

The research title for my thesis:

**CONTINUING PROFESSIONAL DEVELOPMENT OF TEACHERS IN JUNIOR SECONDARY SCHOOLS IN NORTHERN BOTSWANA.**

The intended research participants for this study will be teachers, school heads, staff development teachers of the sampled schools and in-service principal education officers in North-East Region.

Enclosed are copies of introductory letter from North-West University and letter of permission to study from Ministry of Education and Skills Development.

I am looking forward for a positive response.

Thanking you in anticipation,

Yours faithfully,

Phylles Macheng

## APPENDIX B

## CONSENT LETTER TO CHIEF EDUCATION OFFICER

Private Bag T3
Tonota
February 12, 2012

Dear Sir/Madam

**RE: SEEKING FOR CONSENT TO CONDUCT RESEARCH**

I am a student doing PhD with the North-West University in South Africa. I wish to conduct a research entitled "**Continuing professional development of teachers in Junior Secondary Schools**". I therefore kindheartedly ask for your permission regarding this matter.I have been granted permission by the Permanent Secretary (PS)-Ministry of Education & Skills Development (see attached) to conduct research in Junior Secondary Schools in Francistown. Data collection will be done through a questionnaire and interviews of teachers, school heads and senior teacher staff development

Thanking you in anticipation

Yours faithfully

Phylles Macheng (Tel: 2482295 – work; 71673626 – mobile)

(Researcher)

## APPENDIX C

## CONSENT LETTER TO SCHOOL HEADS

Tonota College of Education
P/Bag T3
Tonota

The School Head

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Dear Sir/Madam

**RE: SEEKING FOR CONSENT TO CODUCT RESEARCH IN YOUR SCHOOL**

I kindly seek your consent to conduct research in your school. I am studying for doctoral degree with North-West University in South Africa and have been granted permission by the Permanent Secretary (PS) – Ministry of Education and Skills Development to conduct the study Junior Secondary Schools in Francistown (copy attached).

This study covers all teachers in your schools who will be requested to complete a questionnaire. I will hand delivery the questionnaire. I will kindly request to interview you, senior teacher staff development and one teacher who I will randomly select in your school. Confidentiality is assured.

As stated earlier, the researcher is currently studying for doctoral degree with the North-West University in South Africa. In order to acquire the qualification, it is the requirement of the institution that the student complete the thesis. I am undertaking a research on "Continuing professional development of teachers in Junior Secondary Schools in Northern Botswana".

I will be thankful if my appeal for conducting the research in your school is satisfactorily considered.

Thanking you in anticipation.

Yours truly

Phylles Macheng (71673626)

## APPENDIX D

## CONSENT LETTER TO TEACHERS

28 May 2012

Dear Colleague,

I am a lecturer at Tonota College of Education currently studying for my Doctoral degree in Education (PhD) at the North-West University in South Africa. To fulfil the requirement of the program, I am conducting a research in Junior Secondary Schools. The area of study is:

**CONTINUING PROFESSIONAL DEVELOPMENT OF TEACHERS IN JUNIOR SECONDARY SCHOOLS IN NORTHERN BOTSWANA**

I am requesting your participation in the study and it will be highly appreciated. See below for your pertinent information. Thanking you in anticipation,

Sincerely,

Phylles Macheng

**Confidentiality Statement:**

The records of this study will be kept private. In any sort of report that might be published, we will not include any information that will make it possible to identify a subject or a specific school. Research records will be stored securely and only researchers will have access to them.

**Voluntary Participation**

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with North-West University or other researchers.

**Contact and Questions:**

The researcher conducting this study is Phylles Macheng. If you have questions regarding this study, you are encouraged to contact him at Tonota College, 2484295 or 71673626 or phyllesmacheng@yahoo.com

## APPENDIX E

## QUESTIONNAIRE FOR TEACHERS

**NORTH WEST UNIVERSITY (MAFIKENG CAMPUS)**
**FACULTY OF EDUCATION**
**TEACHER QUESTIONNAIRE**

**Research title:**
**CONTINUING PROFESSIONAL DEVELOPMENT OF TEACHERS IN JUNIOR SECONDARY SCHOOLS IN NORTHERN BOTSWANA**

This research study intends to investigate:

- Factors that impede professional development of teachers
- If there are structures in schools that facilitate continuing professional development of teachers and
- Propose effective professional development model for junior secondary schools.

**Confidentiality**
All information that is collected in this study will be treated confidentially. You are guaranteed you will not be identified in any report of the results of the study. Your participation in this study is voluntary and you are allowed to withdraw from the study any time.

**About the Questionnaire.**

- This questionnaire asks for information about continuing professional development of teachers.
- This questionnaire should take approximately 15 minutes
- Guidelines for answering the questions are typed in italics. All questions can be answered by marking the one most appropriate answer.

**THANK YOU VERY MUCH FOR YOUR COOPERATION!**

## SECTION A

## PERSONAL DETAILS.

*These questions are about you, your qualification, teaching post and time spent in teaching. In responding to the questions, please tick (√) the appropriate box.*

1. Gender:

| | |
|---|---|
| 1.Female | |
| 2. Male | |

2. Professional Qualification.

| | |
|---|---|
| 1. Diploma | |
| 2. Degree | |
| 3. Masters degree | |
| 4. Doctorate | |
| 5.Other qualification | |

3. Teaching Post.

| | |
|---|---|
| 1. Teacher | |
| 2. Senior teacher II | |
| 3. Senior Teacher I | |

4. Teaching experience.

| | |
|---|---|
| 1. 0 – 5 years | |
| 2. 6 – 10 years | |
| 3.11 – 15 years | |
| 4.16 – 20 years | |
| 5. ≥ 20 yrs | |

**SECTION B**

## BARRIERS TO CONTINUING PROFESSIONAL DEVELOPMENT OF TEACHERS

**I would like to ask you about factors that impede continuing professional development of teachers in junior secondary schools. To what extent do you agree or disagree with the following statements?**

*Place a tick (√) or (x) on the appropriate box.*

*SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly Agree*

| Statements | | SD | D | N | A | SA |
|---|---|---|---|---|---|---|
| 1 | School schedules are so tight that there is no time to engage in professional development activities | | | | | |
| 2 | Lack of appropriate rewards discourages me to partake in professional development activities | | | | | |
| 3 | Senior Teacher (Staff Development) always facilitate staff development programmes | | | | | |
| 4 | Lack of support by school management in staff development activities hinders professional growth of teachers | | | | | |
| 5 | Staff development programes I participated in made of significant impact in my student learning | | | | | |
| 6 | Lack of input by teachers in professional development activities designed for them hinders their professional growth | | | | | |
| 7 | Insufficient funding hinders professional development activities in our department | | | | | |
| 8 | In-service training opportunities are frequently available to only a few teachers | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 9 | Externally organized staff development programmes add much value to professional growth of teachers | | | | | |
| 10 | I have a clear understanding of what teacher development entails. | | | | | |
| | **Statements** | **SD** | **D** | **N** | **A** | **SA** |
| 11 | Lack of input by teachers in the design and selection of in-service training programmes hinders professional growth. | | | | | |
| 12 | Most of in-service training initiatives are far much removed from the school situation. | | | | | |
| 13 | There is lack of continuity in the planning and execution of in-service training activities for teachers. | | | | | |
| 14 | Staff development activities are inappropriately timed. | | | | | |
| 15 | Senior teacher staff development lack appropriate skills and knowledge to coordinate in-service training activities. | | | | | |
| 16 | There is no official policy document guiding schools on the provision of professional development programmes. | | | | | |
| 17 | School based staff development programmes address the teachers' areas of need in terms of professional growth. | | | | | |

## STRUCTURES IN SCHOOL THAT FACILITATE PROFESSIONAL DEVELOPMENT

**I would like to ask you on the availability of structures in your school about professional development of teachers in junior secondary schools. To what extent do you agree or disagree with the following statements?**

*Place a tick (√) or (x) on the appropriate box.*

*1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree*

| | **Statements** | **SD** | **D** | **N** | **A** | **SA** |
|---|---|---|---|---|---|---|
| 18 | At our school, teacher development is considered important | | | | | |
| 19 | Teachers in my department are committed to staff development activities | | | | | |
| 20 | In my department, there is too much individualism | | | | | |
| 21 | In my school, there are staff development programs in place which teachers are engaged in most of the time. | | | | | |
| 22 | In my school, I have participated in different staff development activities such as workshops, meetings, seminars, team teaching etc | | | | | |
| 23 | In my school, the head fully support teacher development | | | | | |
| 24 | There is a well established mentoring system in my school. | | | | | |
| 25 | As a department, we do team teaching | | | | | |
| 26 | In my school newly appointed teachers are assigned an experienced teacher to work with for a period of time. | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 27 | In my school, the head conducts classroom visits | | | | | |
| 28 | In my school, there is an induction program which all new teachers go through on arrival. | | | | | |
| 29 | All new teachers should go through an induction program for them to develop professionally | | | | | |
| 30 | In my school, I usually engage in discussions about ways to improve professionally. | | | | | |

## APPENDIX F

## SEMI STRUCTURED INDIVIDUAL INTERVIEWS WITH TEACHERS

1. Do you regard continuing professional development of teachers as an important integral of the teaching profession?

2. What do you think are the factors that hinder professional development of teachers?

3. Are there any structures in your school that facilitate professional development of teachers?

4. Do you think school management is supportive of teacher professional development at school level?

5. Should teachers be involved in planning for professional development activities?

6. What do think can be done to help teachers to grow professionally?

## APPENDIX G

## SEMI STRUCTURED INTERVIEW SCHEDULE WITH SENIOR TEACHER STAFF DEVELOPMENT

1. What is the primary role/responsibility of senior teacher staff development?

2. What are the factors that impede continuing professional development of teachers?

3. Are there any structures in your school that facilitate professional development of teachers?

4. What are your suggestions for improvement of continuing professional development of teachers?

## APPENDIX H

## SEMI STRUCTURED INTERVIEW SCHEDULE WITH SCHOOL HEAD

1. Do you regard continuing professional development as an important component of the teaching profession?

   The RNPE of 1994, states that School Head as an instructional leader is responsible for professional growth of teachers within their schools.

2. Is there any official which guides school heads on the implementation of the policy of teacher development?

3. What do you think are the factors that hinder continuing professional development of teachers?

4. Are there any structures in your school that facilitate professional development of teachers/

5. Should teachers have an input in the design of staff development activities?

6. What are your suggestions regarding the enhancement professional growth of teachers?

## APPENDIX I

## SEMI STRUCTURED INTERVIEW SCHEDULE WITH IN-SERVICE EDUCATION OFFICER

One of your roles as an in-service education officer is to facilitate professional growth of teachers in junior secondary schools.

1. Are you able to fulfil your primary responsibility of facilitating professional development of teachers in schools?

2. What challenges do you encounter when pursuing your responsibility as an in-service training officer?

3. What suggestions would you put forward to enhance the professional growth of teachers?