COPYRIGHT AND CITATION CONSIDERATIONS FOR THIS THESIS/ DISSERTATION

- Attribution — You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

- NonCommercial — You may not use the material for commercial purposes.

- ShareAlike — If you remix, transform, or build upon the material, you must distribute your contributions under the same license as the original.

How to cite this thesis

EDUCATORS’ EXPERIENCES OF CONTINUOUS PROFESSIONAL DEVELOPMENT ON THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGY IN JOHANNESBURG SECONDARY SCHOOLS

By

Philbert Khumalo
(2012 13415)

MINOR-DISSERTATION

Submitted in partial fulfillment of the requirements for the degree MAGISTER EDUCATIONIS in DEPARTMENT OF EDUCATION MANAGEMENT AND LEADERSHIP in the FACULTY OF EDUCATION at the UNIVERSITY OF JOHANNESBURG

Supervisor: Professor. P. Du Plessis

Johannesburg November 2015
Should be completed and submitted by ALL STUDENTS

The Department DELM places specific emphasis on integrity and ethical behaviour with regard to the preparation of all written work to be submitted for academic evaluation.

Although academic personnel will provide you with information regarding reference techniques as well as ways to avoid plagiarism, you also have a responsibility to fulfil in this regard. Should you at any time feel unsure about the requirements, you must consult the lecturer concerned before you submit any written work.

You are guilty of plagiarism when you extract information from a book, article or web page without acknowledging the source and pretend that it is your own work. In truth, you are stealing someone else’s property. This doesn’t only apply to cases where you quote verbatim, but also when you present someone else’s work in a somewhat amended format (paraphrase), or even when you use someone else’s deliberation without the necessary acknowledgement. You are not allowed to use another student’s previous work. You are furthermore not allowed to let anyone copy or use your work with the intention of presenting it as his/her own.

Students who are guilty of plagiarism will forfeit all credit for the work concerned. In addition, the matter can also be referred to the Committee for Discipline (Students) for a ruling to be made. Plagiarism is considered a serious violation of the University’s regulations and may lead to suspension from the University.

For the period that you are a student at the Department DELM, the under-mentioned declaration must accompany all written work to be submitted. No written work will be accepted unless the declaration has been completed and attached.

I (full names)  __________________________________________________
Student number       __________________________________________________
Subject/Module of the work            __________________________________________________

Declaración
1. I understand what plagiarism entails and am aware of the University’s policy in this regard.
2. I declare that this ______________________ (e.g. essay, report, project, assignment, dissertation, thesis etc) is my own, original work. Where someone else’s work was used (whether from a printed source, the internet or any other source) due acknowledgement was given and reference was made according to departmental requirements.
3. I did not make use of another student’s previous work and submitted it as my own.
4. I did not allow and will not allow anyone to copy my work with the intention of presenting it as his or her own work.

Signature ________________________________ Date: ______________________
ACKNOWLEDGEMENTS

Writing a Masters minor dissertation is an enormous task and countless hours are expended in the process. It is worth noting that many people contributed immensely towards the production of this minor dissertation and I should acknowledge them. I am, therefore, highly indebted to the following people:

- My supervisor, Professor Pierre Du Plessis, for his professional academic guidance and motivation throughout the entire writing process of this minor dissertation.
- My wife, Thobekile, for her support, love and tolerance.
- My dear children, Mziwethu and Sinegugu, for their continued support, patience and understanding.
- The principals and educators (participants) in the two secondary schools where I conducted research.
- Some inspiring colleagues at work who continued to encourage me to complete the minor dissertation.
- The University of Johannesburg Library staff for their assistance with books.
- Everyone who contributed towards my success in this endeavour.
ABSTRACT

Education has continued to evolve since time immemorial. This has resulted in South Africa investing in the modern ways of teaching and learning such as incorporating Information and Communication Technology (ICT) in education. The introduction of Information and Communication Technology (ICT) in education has transformed the education landscape. Teaching and learning has now become more interactive and engaging to the learners. Therefore, educators need to be empowered with relevant Information and Communication Technology (ICT) skills to be effective in their teaching. This can only be realized if the education authorities conduct a needs analysis to determine the relevant prerequisite Information and Communication Technology (ICT) skills that should be taught to educators.

The purpose of this study is to explore and describe educators’ experiences of continuous professional development on the use of Information and Communication Technology (ICT) in Johannesburg secondary schools.

To help the researcher achieve the aim of the research study, the following objectives are set:

- to explore educators’ experiences of continuous professional development in the use of ICT.
- to examine the current continuous professional development of educators in the use of ICT offered in schools.

However, the researcher employed the qualitative research paradigm in this study to explore and describe educators’ experiences of continuous professional development in the use of Information and Communication Technology (ICT). This was a case study and four participants were purposefully selected from two secondary schools in Gauteng, Johannesburg. Structured interviews were conducted. The data gathered was then transcribed verbatim, coded and analysed. The findings of this study reveal that Continuous Professional Development (CPD) is an ongoing process of acquiring knowledge and skills through workshops or training or taking courses to improve educators in Information and Communication
Technology (ICT). Furthermore, the researcher found that schools have Information and Communication Technology (ICT) equipment which is used by educators for communication, administration, and to provide creative and stimulating teaching and learning experiences in the classrooms. The findings also revealed that the School Management Teams (SMTs) should provide opportunities for educators to attend training, conferences and courses in Information and Communication Technology (ICT). In addition, the Department of Education and schools should conduct a needs analysis on the use of Information and Communication Technology (ICT) in teaching before offering training to educators. However, the major impediments cited by the participants were load shedding and technical problems that made it impossible for educators to teach using Information and Communication Technology (ICT).
KEY WORDS AND ABBREVIATIONS

1. Professional Development
2. Continuous Professional Development
3. Information and Communication Technology
4. Training
5. Experiential Learning
6. School Management Team

1. CPD : Continuous Professional Development
2. ICT : Information and Communication Technology
3. CAPS : Curriculum Assessment Policy Statement
4. HOD : Head of Department
5. DOE : Department of Education
6. IT : Information Technology
## CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>DECLARATION</td>
<td>ii</td>
</tr>
<tr>
<td>ACKNOWLEDGEMENTS</td>
<td>iii</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>iv</td>
</tr>
<tr>
<td>KEYWORDS AND ABBREVIATIONS</td>
<td>v</td>
</tr>
<tr>
<td><strong>CHAPTER ONE: INTRODUCTION AND CONCEPTUALIZATION OF THE PROBLEM</strong></td>
<td></td>
</tr>
<tr>
<td>1.1 INTRODUCTION AND BACKGROUND</td>
<td>1</td>
</tr>
<tr>
<td>1.2 PROBLEM STATEMENT</td>
<td>3</td>
</tr>
<tr>
<td>1.3 AIM OF THE RESEARCH</td>
<td>4</td>
</tr>
<tr>
<td>1.4 METHOD OF RESEARCH</td>
<td>5</td>
</tr>
<tr>
<td>1.4.1 Population Sampling</td>
<td>5</td>
</tr>
<tr>
<td>1.4.2 Data Collection</td>
<td>6</td>
</tr>
<tr>
<td>1.4.3 Trustworthiness</td>
<td>6</td>
</tr>
<tr>
<td>1.5 ETHICAL ASPECTS OF THE RESEARCH</td>
<td>7</td>
</tr>
<tr>
<td>1.6 CLARIFICATION OF CONCEPTS</td>
<td>8</td>
</tr>
<tr>
<td>1.6.1 Professional Development</td>
<td>8</td>
</tr>
<tr>
<td>1.6.2 Information and Communication Technology (ICT)</td>
<td>8</td>
</tr>
<tr>
<td>1.6.3 Training</td>
<td>8</td>
</tr>
<tr>
<td>1.6.4 Curriculum and Assessment Policy (CAPS)</td>
<td>9</td>
</tr>
<tr>
<td>1.7 PROPOSED LAYOUT OF STUDY</td>
<td>9</td>
</tr>
<tr>
<td><strong>CHAPTER TWO: LITERATURE REVIEW</strong></td>
<td></td>
</tr>
<tr>
<td>2.1 INTRODUCTION</td>
<td>10</td>
</tr>
<tr>
<td>2.2 THE CONCEPT OF PROFESSIONAL DEVELOPMENT</td>
<td>10</td>
</tr>
<tr>
<td>2.3 THE CONCEPT OF CONTINUOUS PROFESSIONAL DEVELOPMENT</td>
<td>12</td>
</tr>
</tbody>
</table>
2.4 THE CONCEPT OF INFORMATION AND COMMUNICATION TECHNOLOGY 12

2.5 CONTINUOUS PROFESSIONAL DEVELOPMENT OPPORTUNITIES FOR EDUCATORS IN THE USE OF ICT 13

2.5.1 Training 13

2.5.2 Face-to-face Learning 14

2.5.3 Professional Publications 14

2.5.4 Online Resources 14

2.6 CONTINUOUS PROFESSIONAL DEVELOPMENT OF EDUCATORS AS PRESCRIBED BY THE NATIONAL POLICY FRAMEWORK 15

2.7 CONTINUOUS PROFESSIONAL DEVELOPMENT OF EDUCATORS IN INFORMATION AND COMMUNICATION TECHNOLOGY IN SOUTH AFRICA 15

2.7.1 The Ministry of Education Support for CPD of Educators in ICT 15

2.7.2 The Role of the Principal and School Management Team in the CPD of Educators in ICT 16

2.8 EXPERIENCES OF EDUCATORS ON THEIR PROFESSIONAL DEVELOPMENT IN ICT 17

2.9 CONSTRUCTIVISM AND LEARNING IN EDUCATION 18

2.9.1 Constructivist Learning Pedagogy 18

2.9.2 Constructivist Learning Technology 18

2.9.3 Kolb’s Model of Experiential Learning and Learning Styles 19

2.9.4 Kolb’s Experiential Learning 19

2.9.5 Kolb’s Learning Styles 20

2.9.6 Application of Experiential Learning Model to CPD of Educators in ICT 21

2.10 CONCLUSION 21

CHAPTER THREE: RESEARCH METHODOLOGY AND DATA COLLECTION 23

3.1 INTRODUCTION 23
3.2 RESEARCH APPROACH

3.2.1 Qualitative Research

3.3 RESEARCH PARADIGM

3.3.1 The Postpositivist Paradigm

3.3.2 The Transformative Paradigm

3.3.3 The Pragmatic Paradigm

3.3.4 The Constructivist Paradigm

3.4 RESEARCH DESIGN

3.4.1 Case Study Design

3.5 POPULATION SAMPLING

3.6 IN-DEPTH INTERVIEWS

3.6.1 Open-ended Interview

3.6.2 Structured Interview

3.6.3 Semi-structured Interview

3.7 OBSERVATION

3.8 TRIANGULATION

3.9 TRUSTWORTHINESS

3.10 ETHICAL CONSIDERATIONS

3.10.1 Informed Consent and Voluntary Participation

3.10.2 Protection from Harm

3.10.3 Privacy, Confidentiality and Anonymity

3.11 CONCLUSION

CHAPTER FOUR: DATA ANALYSIS

4.1 INTRODUCTION

4.1.1 Content Analysis of the Interviews
4.2 STEPS IN DATA ANALYSIS

4.2.1 Data Preparation

4.2.2 Data Analysis

4.2.3 Data Coding

4.2.4 Establishing Categories, Themes and Patterns

4.2.5 Data Interpretation

4.3 QUESTION BY QUESTION DATA ANALYSIS

4.3.1 Development of codes from Questions one and two

4.3.2 Development of categories from Questions one and two

4.3.3 Development of the theme from Questions one and two

4.3.4 Development of codes from Questions three, four and five

4.3.5 Development of categories from Questions three, four and five

4.3.6 Development of theme from Questions three, four and five

4.3.7 Development of codes from Question six

4.3.8 Development of categories from Question six

4.3.9 Development of theme from Question six

4.3.10 Development of codes from Questions seven and eight

4.3.11 Development of categories from Questions seven and eight

4.3.12 The development of theme from Questions seven and eight

4.3.13 Development of codes from Questions nine and ten

4.3.14 Development of categories from Questions nine and ten

4.3.15 Development of theme from Questions nine and ten

4.4 CONCLUSION
CHAPTER FIVE: FINDINGS AND RECOMMENDATIONS

5.1 INTRODUCTION 61

5.2 RESEARCH FINDINGS AND DISCUSSION 62

5.3 LIMITATIONS OF THE STUDY 69

5.4 RESEARCH RECOMMENDATIONS 69

5.4.1 The Department of Education should develop training programmes that are tailor-made to meet the needs of educators 70

5.4.2 Schools to provide time for staff development 70

5.4.3 Schools to provide ICT equipment and infrastructure 70

5.4.4 Professional development should be subject specific 70

5.4.5 Schools should provide incentives 70

5.4.6 Schools should employ permanent ICT administrators 71

5.5 RECOMMENDATIONS FOR FUTURE RESEARCH 71

5.6 CONCLUSION 71

LIST OF REFERENCES 73

LIST OF TABLES

Table 4.1 Summary of the content analysis and its phases 33

Table 4.2 Codes, categories and themes from the questions one and two 37

Table 4.3 Codes, categories and themes from questions three, four and five 42

Table 4.4 Codes, categories and themes from question six 47

Table 4.5 Codes, categories and themes from questions seven and eight 50

Table 4.6 Codes, categories and themes from questions nine and ten 55

LIST OF FIGURES

Figure 2.1 Kolb’s Cycle of Experiential Learning 21

Figure 4.2 Coding from text 36
<table>
<thead>
<tr>
<th>APPENDICES</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appendix A:</strong></td>
<td>Letters of permission</td>
<td>80</td>
</tr>
<tr>
<td><strong>Appendix B:</strong></td>
<td>Letters to principals</td>
<td>84</td>
</tr>
<tr>
<td><strong>Appendix C:</strong></td>
<td>Consent letters to participants</td>
<td>86</td>
</tr>
<tr>
<td><strong>Appendix D:</strong></td>
<td>Interview schedule</td>
<td>89</td>
</tr>
<tr>
<td><strong>Appendix E:</strong></td>
<td>Transcripts samples</td>
<td>92</td>
</tr>
</tbody>
</table>
CHAPTER ONE

INTRODUCTION AND CONCEPTUALISATION OF THE PROBLEM

1.1 INTRODUCTION AND BACKGROUND

The education system globally has since time immemorial continued to evolve. The advent of Information and Communication Technology (ICT) has to a greater extent accelerated the pace of educational development in the world, especially in the most developed countries (Light, 2010: 39). The traditionally chalkboard has been replaced by smart boards and overhead projectors that are chalk-dust free. Teaching and learning through media is now in the fast lane since a large majority of schools and other educational institutions in the most advanced nations have adopted it as a norm. Notable examples of advanced countries that have pioneered the extensive use of Information and Communication Technology (ICT) in teaching and learning include among many others Australia, United Kingdom and Singapore (Ingleby, 2014:145). In these advanced countries, educators and learners have been equipped with the latest mobile media as their tools of acquiring and disseminating quality education. The school classrooms have been developed, refurbished and equipped with the latest Information and Communication Technology (ICT) that enhances teaching and learning. This has brought some marked dynamism, innovation and creativity in the classroom. Thus the classroom has been transformed into a laboratory of teaching and learning, an environment conducive to knowledge acquisition (Albugami & Ahmed, 2015: 36).

However, the introduction of Information and Communication Technology (ICT) in education has been so infectious in developing countries such as India and Uganda. These countries have adopted programs aimed at transforming the existing system of tertiary and vocational education through the integration of ICT tools to reinforce the acquisition of human capital (Albugami & Ahmed, 2015: 36). Furthermore, more developing African countries endowed with rich natural resources such as South Africa also continue to trail, if not try to match their educational standards to the well developed nations. This has been more evident after the fall of Apartheid in 1994 where South Africa became a democracy. The new government of South Africa inherited an unjust system of education where the Black majority were subjected to
an inferior type of education compared to their White counterparts (Msila, 2010: 169). This necessitated varied and at times revolutionary changes, to be adopted by the South African government in its quest to improve educational standards for all in the country. The adoption and integration of Information and Communication Technology (ICT) in schools and a myriad of other educational institutions in South Africa has been phenomenal to say the least, especially in private schools. Classrooms have been turned into digital havens where learners and educators make extensive use of their mobile media gadgets in the teaching and learning process. This has brought some excitement, innovation and creativity in the classrooms. Moreover, the public schools have also slowly followed the fashionable trend of using Information and Communication Technology (ICT) in the classrooms. The most notable being the Gauteng Department of Education that has aggressively embarked on an ambitious project of implementing and integrating ICT in its urban schools. However, in some provinces around the country progress has been bogged down by the limited financial resources to equip all schools with the latest information and communication technology devices (Department of Education, 2007: 4). This has also been compounded by the scarcity of computer literate educators in public schools that have slowed down the implementation of Information and Communication Technology (ICT) in the classrooms (Wells & Wells cited in Assan & Thomas, 2012: 5).

In conceptualising this study the researcher draws guidance and direction from constructivism and learning in education as a theoretical framework (Harasim, 2012: 68). Espoused in this framework is the concept of experiential learning which includes the whole person in thoughts, feelings and physical activity (Beard & Wilson, 2006: 2). Thus experiential learning will help this researcher gather data and comprehend the educators’ experiences in their Continuous Professional Development (CPD) in the use of Information and Communication Technology (ICT) in schools. In addition, Continuous Professional Development (CPD) of educators in this research study is assumed to be an experiential learning process that incorporates the participation of educators in a cyclical process comprising of four steps: experiencing, reflecting, thinking and acting through their teaching and by which they acquire and improve their knowledge, skills and attitudes (Kolb and Kolb 2005 cited in Ramango, 2014: 17).
Hence, the purpose of this research study is to explore educators’ experiences of continuous professional development in the use of Information and Communication Technology in secondary schools. It is envisaged that this study will inform the education policy makers to better comprehend the needs and expectations of educators to help empower them with relevant and useful ICT skills. This will in the long-run accelerate the implementation of the use of ICT in teaching and learning in public secondary schools in South Africa.

1.2 PROBLEM STATEMENT

During the Apartheid era Black schools were bedeviled by a serious scarcity of human and material educational resources (Msilu, 2010: 169). With revolutionary changes in education globally, South Africa has followed fashionable trends by introducing swift changes in education (National Department of Education, 2012). Changes are earmarked at improving the quality of education to match international education standards (Department of Education, 2007: 4). Educators are expected to improve themselves, update their knowledge and skills, and remain relevant in order to adapt to the new and changing roles and new teaching methods (Gartia, 2012: 1).

With the introduction of cutting edge technology in the educational system, there is a dire need to equip and empower educators with relevant skills in Information and Communication Technology (ICT) (Ciampa & Gallagher, 2013). Most South African educators are found wanting in ICT skills (National Department of Education, 2007: 1). Approximately 17% South Africans are ICT literate (Lesame, 2013: 83).

The lack of educators’ ICT skills stems from a myriad of challenges. Some educators are apprehensive about using ICT in teaching because they do not have computer skills. Others are apathetic about the use of ICT in teaching, and still others are unfamiliar with computer hardware and software (Msilu, 2010). It is imperative that educators are continuously developed to ensure that they are capable of integrating ICT in their teaching (Desimone, Smith & Ueno, 2006: 42). But is the training of educators in the use of ICT effective? Balanskat et al in Khan (2014: 23), explained that inaccurate training program is one of the hindrance for teachers to integrate technology into their teaching. This training fails to cater for the actual needs of educators (Khan, 2014: 23). Hence, the thrust of this study is to
address the actual needs of educators by exploring their experiences of Continuous Professional Development (CPD) on the use of ICT in secondary schools.

Information and Communication Technology (ICT) refers to the accessing, acquiring and communicating of information using the available technologies (Lloyd, 2005: 3). The economic imbalances, such as the affordability and possession of ICT technology between the advantaged and disadvantaged are still with us for some time, hence the huge digital divide in South Africa. This digital exclusion contributes to the digital illiteracy and the shortage of much-needed e-skills in the country (Lesame, 2013: 74). A large majority of educators have indicated that they lack confidence in the effective use of ICT because they are not adequately supported through suitable in-service training (Assan & Thomas, 2012: 9). Furthermore, research has revealed that educators who are not ready and confident to use ICT are not likely to integrate it in their teaching (Chigona et al, 2014: 2). Thus it is evident that most of the literature discuss the Continuous Professional Development of educators on the use of ICT. But there is a serious shortage of literature that discuss the educators’ views and experiences regarding their continuous professional development on the use of ICT in schools. Therefore, this study seeks to address this gap in the literature by exploring educators’ experiences of Continuous Professional Development on the use of ICT in schools. Hence it is against this backdrop that the research question was formulated:

1. What are educators’ experiences of the current continuous professional development offered in the use of ICT in secondary schools?

1.3 AIM OF THE RESEARCH

The direction of the research comes from the holistic goal of the entire study (Hesse-Biber and Leavy in Ngwenya, 2011: 7). The aim of this study is to explore and describe educators’ experiences of Continuous Professional Development in the use of Information and Communication Technology in Johannesburg secondary schools. It is envisaged that a better understanding of the educators’ experiences of Continuous Professional Development in the use of Information and Communication Technology in schools will help the education authorities design more effective
programmes that will empower educators to use ICT in teaching and learning. To help achieve the aim of the research study, the following objective has been set:

1. to examine the current continuous professional development of educators in the use of ICT offered in secondary schools.

1.4 METHOD OF RESEARCH

This study adopts the constructivist paradigm which is linked to the qualitative research design. The social constructivists believe that individuals pursue understanding of the environment in which they live and work. The researcher premised this study within a constructivist paradigm to better understand the context of the participants through visiting their environment and gathering data personally (Crotty in Creswell, 2014: 9). This will be a qualitative case study. Qualitative research is a method for exploring and comprehending the meaning individuals or groups ascribe to a social or human problem (Creswell, 2014: 4). A case study is an exploration into a specific event in its natural habitat and its purpose is to capture the complexity and situation of behaviour and contribute to action (Cohen et al, 2007: 85). A case study also entails an in-depth description of a setting and its participants, accompanied by an analysis of the data for themes, patterns, and issues (Merriam cited in Bloomberg & Volpe, 2008: 11)

1.4.1 Population Sampling

Purposive sampling will be used and it refers to the selection of people who meet the most suitable criteria of participants based on their scope of knowledge and experience (Sapsford & Jupp, 2006: 26). The researcher’s participants will be four educators from each of the two secondary schools in Johannesburg, School A and School B. These will be state schools in urban areas that have enthusiastically introduced the use of ICT in teaching and learning. Participants will be selected based on their experience in the teaching profession, and their perceived apprehension about using ICT in teaching. The researcher will elicit the assistance of the School Management Teams (SMTs) such as Heads of Subject Departments to guide him in identification and selection of participants. The researcher will also interview the participants to ascertain their suitability for this study.
1.4.2 Data Collection

Data will be collected through semi-structured individual interviews and observations of participants. Interviews allow the participants to give relevant and in-depth information (Lichtman, 2010: 145). The semi-structured interview schedules will focus on educators’ experiences of Continuous Professional Development in the use of ICT in the classroom. Participants will be interviewed in places where they feel comfortable and safe and interviews will be of 60 minutes duration. The semi-structured individual interviews will precede observations.

Observation allows the researcher to hear, see and experience reality (Henning et al, 2011: 88). The researcher will observe both the schools’ training and learning sessions on the use of ICT in the classroom and record observations in a reflective journal. Particular attention will be paid to how educators participate in both the training and learning sessions, the questions they ask and fears they express pertaining to the use of ICT in the classroom. Observation will complement semi-structured individual interviews of participants, thereby making the data collected richer.

Interviews will be audiotaped after being given the permission to do so by the participants, and transcribed verbatim. This will be followed by the categorisation of the related words or phrases in the data that capture the essence of the research study. This is known as codes (Braun & Clarke, 2013: 206). Content analysis will be used to analyse data and involves establishing categories and counting the number of instances when those categories are used in a written text (Silverman, 2011: 64). According to Creswell (2012: 243), coding is a process of segmenting and naming text to form descriptions and broad themes in the data.

1.4.3 Trustworthiness

Trustworthiness of data will be checked by means of triangulation of data collection methods and member checking (Creswell, 2014: 210). Triangulation refers to a process where two or more methods of data collection are used to examine the same phenomenon with the aim of getting as close to the purpose of the object of study as possible (Braun & Clarke, 2013: 285). Member checking refers to the practice of going back to the participants who provided the original data to obtain
their comments on the trustworthiness or authenticity of the tentative conclusions (Morgan, 2014: 147). Member checking will be done after the transcription of all interviews (Casey et al, 2013: 14). Participants will be sent a copy of the transcribed interviews and an accompanying letter requesting their response regarding the data collected and the tentative conclusions of the study. Participants will not be compelled to respond to data collected. If participants do not respond within two weeks of receipt of transcribed interviews, the researcher will assume they agree with the transcriptions.

1.5 ETHICAL ASPECTS OF THE RESEARCH

For the purpose of this study, certain research ethical principles will be adhered to, namely informed consent, privacy, confidentiality, anonymity, and protection from harm (Babbie, 2010: 66). The researcher will embrace a high standard of ethics and ethical practice which is rooted in ethical consciousness, characterised by respect for human rights and the dignity of the participants as the researcher conducts this study. The researcher will first seek permission from the Gauteng Department of Education prior to approaching the Principals of the two secondary schools. Then the researcher will request the consent from the Higher Degrees Committee of the Faculty of Education at the University of Johannesburg. Then the researcher will ask for consent from the Ethical clearance and Ethics Committee of the Faculty of Education to conduct the study. Next the researcher will brief the participants on the ethical principles, the focus of the study and its objectives, and all the procedures of the research study (Ngwenya, 2011: 10).

Furthermore, the researcher will then seek informed consent of each of the participants before interviewing and audio recording them. Thus the informed consent to participate in the research will be obtained through a letter signed by the participants. In addition, the researcher will then reassure participants that they would not be harmed and will be free to withdraw from the study at any time, without any undue pressure to provide reasons or negative impact (Braun & Clarke, 2013: 63). Participants will be assured that they will be treated fairly without any bias. Then the researcher will also emphasise to the participants that their privacy, anonymity, confidentiality and trust would be protected and not compromised (Henning et al, 2011:73). Interview questions will be given to the participants prior to
the commencement of the interviews to allow them to familiarise themselves with them. Participants will be allowed not to answer a question/s they deem to be unfair or uncomfortable with (Lichtman, 2010: 54). Ethical clearance was obtained from the University of Johannesburg’s Faculty of Education Ethical Committee before the interviews were conducted.

1.6 CLARIFICATION OF CONCEPTS

For the purpose of this research study it is necessary to have a clear understanding of the key concepts as they may imply different things in different contexts to different readers. The following concepts are clarified:

1.6.1 Professional Development

Professional development is all the experiences of natural learning that are planned, both directly and indirectly, to benefit individuals, groups or schools and which contribute to improvement of the quality of education in the classroom (Day cited in Marcelo, 2009: 8). Vemic (2007: 209) describes professional development as the best approach to complex problems that will benefit both the individual and the school system. In this study the researcher will define professional development as the experiences of acquiring knowledge and skills that will benefit the individual, groups and the institution in enhancing the quality of education.

1.6.2 Information and Communication Technology (ICT)

Information and Communication Technology is a commonly held understanding of the term Information and Communication Technology (ICT) and refers to the accessing, acquiring and communicating of information using the available technologies (Lloyd, 2005: 3). While Newby et al (2011: 8) explains educational technology as the application of technological processes and tools which can be employed to solve problems of teaching and learning. In this study the researcher will define Information and Communication Technology as the process of acquiring and disseminating information using available technological media.

1.6.3 Training

Training is a way an organisation uses a systematic process to transform the knowledge, skills and behaviour of employees so that it can achieve its objectives
(Erasmus & Van Dyk, 2003 cited in Diale, 2010: 11). Dessler (2012: 183) on the other hand, refers to training as the techniques and processes employers use to give both new and old employees the knowledge and skills they require to perform their tasks. In this study, training is defined as the development of skills, knowledge and competency levels of employees to attain the goals of the institution.

1.6.4 Curriculum and Assessment Policy (CAPS)

CAPS stands for Curriculum and Assessment Policy Statement. A National Curriculum and Assessment Policy Statement is a single, comprehensive, and concise policy document, which will replace the current Subject and Learning Area Statements, Learning Programme Guidelines and Subject Assessment Guidelines for all the subjects listed in the National Curriculum Statement Grades R – 12 (Department of Basic Education, 2012). In this study, the researcher defined CAPS as a breakdown of the curriculum guidelines of concepts to be taught, assessment and assessment procedures for educators.

1.7 PROPOSED LAYOUT OF THE STUDY

The research study will be divided into chapters. Chapter one will discuss the introduction and conceptualisation of the problem. Chapter two will address the literature review while chapter three will explain the research methodology. Chapter four will focus on the data analysis, and finally, chapter five will clarify the findings and recommendations for future research, and the conclusion of the study.
CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter seeks to engage with a wide variety of literature to support the research study. Continuous Professional Development (CPD) of educators in Information and Communication Technology (ICT) has been and is still a priority of the national government of South Africa. The Republic of South Africa has taken revolutionary concerted efforts to improve the standards of education in the country ever since the inception of democracy in 1994. Therefore, the Department of Basic Education (DBE) proposed Continuing Professional Teacher Development (CPTD) in line with the National Policy Framework for Teacher Education and Development (RSA, 2007: 16). This initiative is focused on quality professional development of educators with the aim of supporting and revitalising the teaching profession. It is also aimed at rewarding educators who are committed to its goals (Mestry et al, 2009: 475).

Furthermore, this chapter will explain and discuss the concepts of Continuous Professional Development, and Information and Communication Technology. It will then discuss the South African Policy Framework for Teacher Education and Development; Continuous Professional Development for educators in ICT in South Africa; the role of the principal and the School Management Teams (SMTs) in the Continuous Professional Development of educators in ICT, and finally, constructivism and learning in education.

2.2 THE CONCEPT OF PROFESSIONAL DEVELOPMENT

The concept of professional development needs to be fully clarified as it is one of the pillars of this research study. According to Bolam in Bush et al (2010: 98), professional development is the process by which educators, SMTs and principals learn, improve and employ suitable knowledge, skills and values. On the other hand, Vemic (2009: 209) defines professional development as the most appropriate approach to complex problems that will benefit both the individual and the school system. Thus professional development will help educators to be equipped with relevant skills, knowledge and values to cope with the rapid changes and challenges
in secondary schools. Day (1999) cited in Roesken-Winter et al (2015: 4) refers to professional development as comprising of all natural learning experiences and those conscious and planned activities which are aimed to be of direct or indirect benefit to the individual, group or school and which contribute, through these, to the quality of education in the classroom. It is the process by which, alone and with others, educators review, renew and extend their commitment as change agents to the moral purposes of teaching; and by which they acquire and develop critically the knowledge, skills and emotional intelligence necessary to good professional thinking, planning and practice with children, young people and colleagues through each stage of their teaching lives (Day cited in Roesken-Winter et al, 2015: 4).

Furthermore, Mestry (2009: 1) emphasises that the professional development of educators is imperative to ensure that the quality of the learners’ experience and achievement is improved in a positive way. Whilst on the other hand, Dengerink et al (2015:80) regards professional development as individual learning of those engaged in activities that require specialised attitudes, knowledge and skills which are rooted in a formal or informal specialist body of knowledge or knowledge base. This is in line with Smith (2011: 681) who concurs that professional development is an internal process in which professionals engage within a formal or informal framework and has its foundations in critical self-analysis of professional practice. The important features of this kind of learning and development of professional educators will incorporate:

- their individual or professional dispositions and their knowledge, beliefs and attitudes (the ‘who’);
- the purposes, goals, objectives and themes of professional development related to external sources of information or to a stimulus (the ‘what’);
- the intended process and activities contributing to achieve the objectives and salient results (the ‘how’) (Clarke and Hollingsworth 2002 in Dengerink et al 2015: 80).

Thus these features help to make the professional development of educators to be relevant and effective in producing quality teaching and learning in schools. This
leads the researcher to now discuss what constitutes the types of professional development that could be offered to the educators to improve their practice.

2.3 THE CONCEPT OF CONTINUOUS PROFESSIONAL DEVELOPMENT

Continuous professional development is a process by which individuals take responsibility of their own learning and development, by being involved in an ongoing process of reflection and action (Megginson & Whitaker, 2005: 5). In the same vein, Roesken-Winter et al (2015: 2) note that educators’ professional development occurs every day inside and outside the classroom, through reflecting or discussing the practice or learners’ work, preparing for the next day, being encouraged in school conferences or meetings with parents and so on. Furthermore, Kelchtermans (2004) describes Continuous Professional Development as a learning process emanating from meaningful interaction with the context (both in time and space) and finally leading to changes in educators’ professional practice and in their thinking about that practice (van den Bergh, Ros & Beijaard, 2015: 142). This is collaborated by Chuang (2015: 28) who defines Continuous Professional Development as a self-initiated and an ongoing approach to improve and maintain individual’s knowledge, skills and competences, whether formally or informally. It includes various learning and development activities that contribute to one’s continued effectiveness as a professional, and everything that upgrades one’s skills and abilities. Thus individual learners are responsible to manage their own professional and personal development on an ongoing basis (Chuang, 2015: 28). All these authorities reiterate that Continuous Professional Development is not a once-off phenomenon but an ongoing process that culminates in the transformation of educators’ professional practice in the classroom.

2.4 THE CONCEPT OF INFORMATION AND COMMUNICATION TECHNOLOGY

After the discussion on Continuous Professional Development, it is now imperative to explain and elaborate on the concept of Information and Communication Technology. Adegbija et al (2013: 1) describe ICT as the handling, processing, storage, retrieval and transmission of information using electronic devices. Examples of electronic devices include among many others television, radio,
computers, the internet and devices that can be connected to projectors for teaching and learning (Adegbija et al., 2013: 1). Furthermore, UNESCO in Njoku (2015: 123) is in agreement with Adegbija et al (2013) by defining ICT as forms of technology that are employed to transmit, process, store, create, show, share or exchange information electronically. This definition incorporates numerous technologies like radio, television, videotape, audiotape, computer hardware, software and networks, among many others. Whilst Dede in Kreijns et al (2013: 217) regard Information and Communication Technologies (ICTs) as a combination of tools enabling, supporting, and reinforcing educational transformation that suits the educational demands of the knowledge society. Thus in this study, Information and Communication Technology (ICT) is a combination of tools used in the transmission, storage, creation and sharing of information electronically.

2.5 CONTINUOUS PROFESSIONAL DEVELOPMENT OPPORTUNITIES FOR EDUCATORS IN THE USE OF ICT

Continuous Professional Development (CPD) of educators in the use of ICT plays a critical role in the improvement of learners’ learning. Thus educators must not only develop new technology skills, but it is more significant that they must also learn how to integrate them into the education curriculum (Frei et al, 2009: 182). There is a wide variety of professional development activities that could be offered to educators to equip them with effective and relevant skills and knowledge. These could include among many others training, face-to-face learning, professional publications, online resources and workshops.

2.5.1 Training

Training is a learning process that entails the acquiring of skills, ideas, rules or attitudes to improve the performance of employees. Training should be directed to the attainment of some organisational goals (Loock et al 2006: 41). In the same vein, Cronje et al in Mathibe (2007: 524) describes training as a process that includes the provision of employees with relevant knowledge, skills, values and attitudes to perform a certain task efficiently and effectively. Noe et al (2015: 289) describe training as a planned effort by an organisation to facilitate learning of job-related competencies, knowledge, skills and behaviour by employees. Furthermore,
they explain that the purpose of training is for employees to master the knowledge, skills and behaviours emphasised in training and implement them to their daily tasks. This implies that training empowers employees with the suitable skills and knowledge to enhance their performance in their respective field of expertise. In the case of educators, training will prove handy in equipping them with knowledge, skills and attitudes to use ICT to enhance their teaching in the classrooms.

2.5.2 Face-to-face Learning

Here a technology expert helps the student (in this scenario an educator) on how to accomplish a specific technology related task. This is a one-on-one tutoring session and allows the student to ask questions without feeling illiterate. This motivates the educators not to shy away from using ICT in the classroom (Frei et al, 2009: 184). However, there are some disadvantages to face-to-face training. Educators could be exhausted at the end of the school day, hence full concentration could be difficult. Participants may miss out on hearing others questions and also the input of others too. In addition, in both small or large training groups, participants have to share the technology instructor with others, have to work at the pace of others, and the training should be done at a time convenient for everyone in the group (Frei et al, 2009: 184).

2.5.3 Professional Publications

Technology is forever evolving, and there is need for educators to attempt to stay abreast of some of the new and innovative ideas that are being implemented. For educators to gain additional knowledge about the changes in educational technology, they can read professional magazines and journals on ICT. However, one disadvantage of publications is that they do not provide interaction with others. The publications subscription fees could be detrimental to educators since they could be expensive (Frei et al, 2009: 186).

2.5.4 Online Resources

With a myriad of commitments educators have, it could be impossible to attend after-school or weekend workshops for professional development in ICT. The internet invariably becomes the most ideal option for ICT professional development. Thus educators will obtain anytime and anywhere learning where they choose the time and location convenient for their professional development in the use of ICT (Barnett
Advantages of online resources are that it saves time, you complete the course at your own pace, online courses' information are up-to-date and there is unlimited supply of professional development opportunities available (Frei et al, 2009: 189).

2.6 CONTINUOUS PROFESSIONAL DEVELOPMENT OF EDUCATORS AS PRESCRIBED BY THE NATIONAL POLICY FRAMEWORK

The Department of Basic Education (DBE) proposed Continuing Professional Teacher Development (CPTD) in line with the National Policy Framework for Teacher Education and Development (RSA, 2007: 16). This initiative is focused on quality professional development of educators with the aim of supporting and revitalising the teaching profession. It is also aimed at rewarding educators who are committed to its goals (Mestry et al, 2009: 475). The South African government acknowledges the potential of ICTs to enhance the quality of modern education and training (Department of Education, 2004). A number of valuable ICT initiatives at different stages of implementation across South Africa shape the continuous and effective integration of ICT in schools (Niekerk & Blignaut, 2014: 237). The White Paper on e-Education (Department of Education, 2004) key role is to develop management and leadership at schools that have embraced ICTs (Saide in Niekerk & Blignaut, 2014: 237).

2.7 CONTINUOUS PROFESSIONAL DEVELOPMENT OF EDUCATORS IN INFORMATION AND COMMUNICATION TECHNOLOGY IN SOUTH AFRICA

2.7.1 The Ministry of Education Support for CPD of Educators in ICT

The South African Ministry of Education has made concerted efforts to integrate Information and Communication Technology into the mainstream education system. The National Curriculum Statement (NCS) and the latest Curriculum and Assessment Policy Statement (CAPS) implemented in 2004 expect learners to gain access to relevant information through the World Wide Web (Department of Education, 2006). This is in line with the curriculum transformation and development in education as espoused in the Constitution of the Republic of South Africa (Act 108 of 1996) which seeks to enhance the quality of life of the citizenry and unleash the
potential of all learners (Assan and Thomas, 2012: 5). According to Wells and Wells (2007) Information and Communication Technology in the government schools in South Africa is slowly being embraced but is compounded by several logistical and developmental challenges. In addition, there are glaring disparities among South African public schools in their capabilities to access Information and Communication Technology. Nevertheless, there has been a marked increase in the number of public schools using computers for teaching and learning from 12.3% in 1999 to 26.5% in 2002 (Assan and Thomas, 2012:5).

However, the challenges faced by South Africa in the implementation of Information and Communication Technology in public schools are symptomatic of most developing countries. According to Lallana (2010), a national ICT policy should be comprehensive and address a myriad of issues. But addressing numerous issues requires more resources which is a challenge in developing countries (Mamba & Isabirye, 2015: 137). Furthermore, Banu (2012) reiterates that educators are confronted with a plethora of challenges in introducing ICT in the classroom because of a lack of relevant skills and knowledge. The ICT skills and knowledge the educators had failed to address educators’ actual needs, for instance, their inability to integrate ICT into teaching and learning in the classroom. The educators who had participated in the training program on the use of ICT in teaching, could not efficiently integrate it in their teaching tasks, except to demonstrate their most basic generic computer skills (Khan, 2014: 23). This view is supported by Bingimlas (2009: 240) who posits that training programs in ICT only sought to focus on the educators’ acquisition of basic ICT skills and failed to equip them with skills on how to develop the pedagogical aspects of Information and Communication Technology.

2.7.2 The Role of the Principal and School Management Team in the CPD of Educators in ICT

The success of the implementation of the use of ICT in teaching and learning in schools rests on the shoulders of the school principals and the School Management Teams. According to Niekerk & Blignaut (2014: 237) school leadership plays a critical role in schools in leading school reform, implementing innovations and making improvements in Information and Communication Technology. West-
Burnham in Niekerk & Blignaut (2014: 237) reiterates this point by stating that: ‘No school improves without being led’.

A capable principal has the capacity to influence, lead and motivate educators to improve their performance and encourages innovative changes in teaching and learning (Han in Niekerk & Blignaut, 2014: 237). In addition, findings from the latest Second Information Technology Education in Schools (SITES, 2006) project confirm that the principal plays a key role to ICT integration in schools. SITES 2006 indicate that principals should adopt a progressive vision which would allow ICT goals to support educators’ Continuous Professional Development in both technical and pedagogical support (Pelgrum in Niekerk & Blignaut (2014: 239).

2.8 EXPERIENCES OF EDUCATORS ON THEIR PROFESSIONAL DEVELOPMENT IN ICT

Educators have expressed their views on their professional development in Information and Communication Technology. A large majority of educators in public schools have voiced their concern over the limited financial resources to equip all schools with the latest Information and Communication Technology devices (Department of Education, 2007: 4). This makes it difficult for the educators to implement the use of ICT in teaching and learning as they do not have the necessary equipment and resources to do that.

Secondly, educators have expressed their dissatisfaction over the quality of training they have received from the Department of Education. According to Balanskat et al (in Khan, 2014: 23), the inaccurate training program is one of the hindrance for educators to integrate technology into their teaching. Also a large majority of educators have indicated that they lack confidence in the effective use of ICT because they are not adequately supported through suitable in-service training (Assan & Thomas, 2012: 9). Therefore, this training fails to cater for the actual needs of educators (Khan, 2014: 23). Khan’s (2014) sentiments are supported by Bingimlas (2009: 240) who posits that training programs in ICT only sought to focus on the educators’ acquisition of basic ICT skills and failed to equip them with skills on how to develop the pedagogical aspects of Information and Communication Technology. Thus the pedagogical aspects are imperative for educators to implement the use of ICT in teaching and learning in schools.
Furthermore, some educators in schools commented that there is lack of security, care and maintenance of ICT equipment. Theft of ICT resources has been a major challenge in most schools (Assan and Thomas, 2012: 11). This has led to the demotivation of educators to integrate Information and Communication Technology in teaching and learning in schools.

2.9 CONSTRUCTIVISM AND LEARNING IN EDUCATION

2.9.1 Constructivist Learning Pedagogy

Constructivist pedagogies are aimed at the learner or group of learners. Thus the constructivist learning theory emphasises the role played by the learner in creating meaning and constructing understanding (Harasim, 2012: 68). The constructivist perspective of learning has resulted in a number of teaching strategies, based on the following four central principles: Active learning, Learning-by-doing, Scaffolded learning and Collaborative learning (Harasim, 2012: 68). Active learning is learner-centred, and the role of the learner is to participate and act in an activity. While Learning-by-doing is an educational philosophy that teaches learners to do something. On the other hand, Scaffolded learning refers to the activities of an educator or mentor or parent to help the learner in progressing from his or her actual level of development to attaining the potential level of development. Lastly, Collaboration means learners participate and interact in the entire process to co-produce a final product (Harasim, 2012: 72).

2.9.2 Constructivist Learning Technology

The technologies associated with the constructivist learning were commonly known as learning environments. David Jonassen in Harasim (2012: 73) outlines the following several distinguishing features of constructivist learning environments:

- provide multiple examples of reality;
- depicts the natural complexity of the real world;
- places special emphasis on knowledge construction rather than knowledge reproduction;
- places more importance on genuine tasks in a meaningful context instead of abstract instruction out of context;
• provide real-world learning environments or case-based learning;
• promote thoughtful reflection on experience;
• allows context and content-dependent knowledge construction;
• encourage collaborative construction of knowledge through social negotiation rather than selfish competition among learners for recognition.

Moreover, computers are viewed as the appropriate medium for applying constructivist principles to educational practice, since computer software can accommodate numerous strategies and methods more easily and effectively compared to other media. Computer software can also connect to resources required in simulations and microworlds (Harasim, 2012: 73). Furthermore, when we analyse the features of social media and innovative technologies, we note that their strengths embrace the principles espoused by social constructivists (Kelm, 2011: 507). Thus innovative technologies have the potential to promote active engagement, motivate people to work in groups, provide opportunities for feedback from a broader audience, and link people with others who are knowledgeable in a plethora of areas (Fosnot et al in Kelm, 2011: 507).

2.9.3 Kolb’s Model of Experiential Learning and Learning Styles

Kolb’s experiential learning model (1981, 1984) is important for the Continuous Professional Development of educators in the use of Information and Communication Technology. David Kolb draws particularly on the works of John Dewey, Kurt Lewin and Jean Piaget to extrapolate the vital role that experience plays in the learning process (Jacoby, 1996: 68).

2.9.4 Kolb’s Experiential Learning

The centre of Kolb’s experiential learning model is simply described as the learning cycle of how experience is transformed into concepts, which are used as guides in the selection of new experiences. An individual can begin this cycle at any of the four points in the process but should complete the whole cycle for effective learning to occur (Jacoby, 1996: 68). Kolb summarises the learning cycle as follows:

Immediate concrete (effective) experience is the foundation for observations and reflection. An individual uses these observations to develop an idea, generalisation
or theory from which new implications for action can be deduced. Effective learning needs four different kinds of learning abilities, in line with the four points in the learning cycle: Concrete Experience (CE) abilities, Reflective Observation (RO) abilities, Abstract Conceptualisation (AC) abilities, and Active Experimentation (AE) abilities. In explaining the learning cycle and these four abilities, Kolb posits that learners must engage themselves fully, openly, and without subjectivity in new experiences (CE); they must be able to observe and reflect on these experiences from numerous viewpoints (RO); they must be able to create ideas that integrate their observations into logically vital theories (AC); and they must be able to employ these theories to come up with decisions and solve problems (AE) (Kolb in Jacoby, 1996: 69). Furthermore, Kolb(1984) in Jacoby (1996: 69) also portrays the learning cycle as “learning from feeling” (CE), “learning by watching and listening” (RO), “learning by thinking” (AC), and “learning by doing” (AE).

2.9.5 Kolb's Learning Styles

Kolb describes four different learning styles dependent on an individual's preferences for two of the four learning abilities. The four learning styles are named Converger, Accommodator, Diverger, and Assimilator. Thus Convergers’ strong learning abilities are Abstract Conceptualisation and Active Experimentation. Their dominance lies in the practical application of concepts. While Accommodators’ strong learning abilities are Active Experimentation and Concrete Experience. Thus they are dominant in performance, implementing plans, and becoming involved in new experiences. On the other hand, Divergers' strong learning abilities are Concrete Experience and Reflective Observation. Therefore, they are dominant at generating ideas, interested in people, imaginative and emotional, and have diverse cultural interests. Lastly, Assimilators’ strong learning abilities are Reflective Observation and Abstract Conceptualisation. Their dominance is vested in their ability to develop theoretical models (Jacoby, 1996: 70).
Below is Figure 2.1 illustrating Kolb’s Cycle of Experiential Learning:

![Kolb’s Cycle of Experiential Learning](image)

**Figure 2.1 Illustrating Kolb’s Cycle of Experiential Learning (Adapted from Ramango, 2014: 30)**

**2.9.6 Application of Experiential Learning Model to CPD of Educators in ICT**

There are three key implications of the experiential learning model to the Continuous Professional Development of educators in ICT. Firstly, the course or learning experience must be designed to present multiple opportunities continually to allow learners (educators) to move completely and oftenly through the learning cycle. Secondly, Kolb’s model emphasises how central and significant reflection is to the entire process of learning. Thirdly, in Kolb’s model, reflection follows direct and concrete experience and comes before abstract conceptualisation and generalisation (Jacoby, 1996: 69).

**2.10 CONCLUSION**

This chapter has first discussed the concepts of Continuous Professional Development, and Information and Communication Technology. It then discussed the South African Policy Framework for Teacher Education and Development;
Continuous Professional Development for educators in ICT in South Africa; the role of the principal and the School Management Team in the Continuous Professional Development of educators in ICT, and finally, constructivism and learning in education.
CHAPTER THREE

RESEARCH METHODOLOGY AND DATA COLLECTION

3.1 INTRODUCTION

This chapter describes the research methodology and data collection of the study. There are essentially three approaches to research which are namely: qualitative, quantitative and mixed methods. This research study will be confined to the qualitative approach. According to Creswell (2014: 4), the qualitative approach is an approach for exploring, describing and comprehending the meaning individuals or groups attach to a social or human problem. Therefore, qualitative research is of paramount importance in this study because it studies people or systems by engaging with and observing participants in their natural place and focusing on their meanings and interpretations (Maree (2007: 51). This will help the researcher gather all the essential data which will enrich the findings of the study.

However, the discussions in this chapter will revolve around the research approach; paradigm and design; population sampling; in-depth interviews; observation; triangulation; trustworthiness and ethical considerations in a quest to explore the research aims and objectives and ultimately answer the research question. Thus the study explores educators’ experiences of Continuous Professional Development in the use of ICT in secondary schools.

3.2 RESEARCH APPROACH

There are basically three approaches to research. They are comprised of qualitative, quantitative and mixed methods research (Creswell: 2014: 3). This study was premised on qualitative research.

3.2.1 Qualitative Research

Qualitative research includes the studied use and collection of a variety of empirical materials. These could be case study, personal experience, introspection, life story, interview, artifacts, and cultural texts and productions, along with observational, historical, interactional, and visual texts that describe routine and problematic moments and meanings in individuals’ lives (Denzin & Lincoln, 2011: 4). Thus the rich descriptions in a qualitative study make the researcher better comprehend the
phenomenon in its environment. Researchers choose qualitative research because it seeks to bring about social transformation by changing individual behaviour; organisational practices; the policies, and politics of countries, or maybe all the three (Warren & Karner, 2010: 15). Therefore, in this study the researcher chose qualitative research to influence and transform individual behaviour, organisational practice and policy.

Furthermore, the qualitative approach is most ideal because it allowed this researcher to explore social relations and describe reality as experienced by the participants (Adams, Khan & Raeside, 2014:6). Exploring educators’ experiences of Continuous Professional Development in the use of ICT in secondary schools required the researcher to visit participants in their natural setting so as to capture in depth their lived experiences. Moreover, Yin (2011: 7) summarises the importance of the qualitative approach by describing its five central features. These include: studying the meaning of participants’ lives in real-world conditions; representing the opinions and perspectives of participants; covering the contextual environments within which participants live; contributing insights into existing or emerging concepts that may assist to understand human social behaviour; and striving to use a multiplicity of sources of evidence as opposed to relying on a single source.

Yin (2011) and other researchers’ insights discussed in this chapter influenced the researcher to choose the qualitative approach as best suited for this study. Hence, the researcher adopted the constructivism paradigm to guide this research study. It will now be discussed in detail.

3.3 RESEARCH PARADIGM

There are varied research paradigms. Creswell (2014: 6) refers to them as philosophical worldviews, meaning “a basic set of beliefs that guide action”. There are four worldviews which are namely: Postpositivism, Constructivism, Transformative and Pragmatism.

3.3.1 The Postpositivist Paradigm

Postpositivism assumes knowledge is conjectural; research is the process of making claims; data, evidence, and rational considerations mould knowledge; research
seeks to develop relevant and true statements; and that being objective is a vital aspect of competent inquiry (Phillips & Burbules in Creswell (2014: 7).

3.3.2 The Transformative Paradigm

Researchers under this paradigm believe there are different views about reality, but that some versions of reality are barriers to the promotion of social justice and human rights. Culturally responsive methods of research that take into consideration the lived experiences of individuals who face discrimination and oppression are used. The transformative researcher establishes relationships with participants that allow all the relevant constituencies to be heard (Lapan et al, 2012: 22).

3.3.3 The Pragmatic Paradigm

The pragmatic paradigm arises out of actions, situations, and results rather than from antecedent conditions. Researchers here do not focus on methods but rather emphasise the research problem and make use of all the available approaches to comprehend the problem (Creswell, 2014: 10).

3.3.4 The Constructivist Paradigm

Social constructivists believe that individuals seek understanding of the environment they live and work in. Individuals can develop varied and multiple subjective meanings of their experiences, which are meanings focused toward certain objects or things (Creswell, 2014: 8). Crotty in Creswell (2014:9) developed several assumptions on constructivism:

- Individuals construct meanings as they interact with the world they are interpreting. Hence, qualitative researchers generally use open-ended questions so that participants can share their opinions.
- People engage with their world and construct meaning of it based on their historical and social perspectives. Therefore, qualitative researchers aim to understand the context or setting of the participants through visiting this environment, and gathering information and interpreting the findings personally.
- The generation of meaning is always social, emanating in and out of interaction with human community.
3.4 RESEARCH DESIGN

3.4.1 Case Study Design

A case study is an in-depth study which investigates issues, both present and past, as they impact one or more units such as an organisation, group, department or individual (Adams et al, 2014: 98). In the same vein Lapan et al (2012: 243) explain that case study research is an explorative approach used to describe thoroughly complex phenomena, such as recent events, vital issues, or programs, in ways to unveil new and deeper comprehension of these phenomena. Furthermore, according to Woodside (2010: 1) case study is an empirical inquiry that explores a contemporary phenomenon within its real life environment, especially when the boundaries between phenomenon and environment are not clearly explicit. Maree (2007: 75) reiterates that a case study research offers a multi-perspective analysis where a researcher takes into consideration not just the single voice and view of one or two participants in a situation, but also the perspectives of other relevant groups of actors and the interaction between them. This is important for the researchers to come to an in-depth understanding of the dynamics of the phenomena. Also, the major strength of the case study method is its use of multiple sources and techniques in the data collection process (Maree, 2007: 76). Hence this research study is premised within the case study design to explore educators’ experiences of Continuous Professional Development in the use of ICT in Johannesburg secondary schools.

3.5 POPULATION SAMPLING

Sampling involves the selection of the specific units, as well as their quantity that has to be included in the research study (Yin, 2011: 87). According to Adams et al (2014: 72), sampling is a process of selecting an appropriate sample for determination of parameters or features of the whole population. However, there are two key types of sampling that are generally used by educational researchers and they include probability and non-probability sampling (Ngwenya, 2011: 59). Probability sampling methods allow us to know before-hand how possible it is that any element of a population will be selected for the research. Non-probability sampling methods do not allow us to know in advance how likely that any element of a population will be selected for research (Engel & Shutt in Ngwenya, 2011: 59). In
this study the researcher used the non-probability sampling method which conforms to certain criteria and is referred to as purposive sampling (Adams et al, 2014:75).

Purposive sampling lends more strength in case study research because data sources, participants or cases are chosen by how much can be learned from them. Thus purposive sampling can be described as seeking “information-rich sources” rather than just producing a representative sample (Patton in Lapan et al, 2012: 253). Purposive sampling is used in special situations where the sampling is done for a specific purpose (Maree, 2007: 178). Furthermore, purposive sampling refers to the selection of people who meet the most suitable criteria of participants based on their scope of knowledge and experience (Sapsford & Jupp, 2006: 26). In this study the researcher purposefully selected two educators from each of the two secondary schools in Johannesburg, School A and School B. These are public secondary schools in urban areas that have enthusiastically embraced the use of ICT in teaching and learning. Participants were selected based on their experience in the teaching profession, and their perceived apprehension about using ICT in teaching. The researcher sought the assistance of the School Management Teams such as Heads of Subject Departments in each of the two secondary schools to guide him in the identification and selection of participants. In addition, the researcher briefly interviewed the participants to ascertain their suitability for this study.

In this study, in-depth interviews and observations were used as data gathering methods. Therefore, the following sections discuss in-depth interviews and observations respectively.

3.6 IN-DEPTH INTERVIEWS

Interviewing is a professional conversation with the objective of getting a participant to discuss their experiences and views, and to capture their language and concepts, pertaining to a topic that a researcher has determined (Braun & Clarke, 2013: 77). In addition, Maree (2007: 87) describes an interview as a two-way conversation where the interviewer asks the participant questions to gather data and to learn about ideas, beliefs, perspectives, opinions and behaviours of the participant. The objective of the qualitative interview is to see the world through the lens of the
participant. There are mainly three types of interviews in qualitative research: open-ended, structured and semi-structured interviews (Maree, 2007: 87).

3.6.1 Open-ended Interview

According to Babbie (2008:13) in-depth and qualitative interviewing relies almost exclusively on open-ended questions. This allows the participants to give relevant and in-depth information about the study (Lichtman, 2010: 145).

3.6.2 Structured Interview

In the structured interview, questions are detailed and developed in advance, similar to what is done in a survey research. It is often used in multiple case studies or in larger sample groups to ensure consistency (Maree, 2007: 87).

3.6.3 Semi-structured Interview

The researcher will employ participant observation to obtain insight on the participants in their environment. A semi-structured interview is when the researcher has a list of questions that guide the interview but there is an opportunity for the participants to raise issues that the researcher has not anticipated (Braun & Clarke, 2013: 78). Furthermore, a semi-structured interview uses a very detailed interview guide and the participant is not expected to digress too far from beyond the scope of discussion as prescribed by the interview schedule (Lapan et al, 2012: 117). The researcher employed semi-structured interviews as a data gathering method in this research study in order to obtain relevant data for the study. An interview schedule was created and used to guide the interviews (See Appendix D). The interviews were audio-taped and then later transcribed by the researcher.

3.7 OBSERVATION

The key feature of participant observation is being there, that is, the researcher’s presence in the same environment as participants as the events unfold and not relying particularly on participants’ retrospections about what transpired and the causes and consequences of what happened (Woodside, 2010: 321). Observation made it easier for the researcher to gain insight into the participants’ setting, views and experiences. Again, it allowed the researcher to hear, see and experience the
reality of the participants (Henning et al, 2011:88). Some of the most important findings in a research study have been coincidental and captured from observations of the failures of other data collection methods. Therefore, this researcher was alert and observed and noted and documented the observations of participants in a research reflective diary when he conducted research in two public secondary schools (Adams et al, 2014: 93).

3.8 TRIANGULATION

Triangulation refers to a process where two or more methods of data collection or sources of data are used to evaluate the same phenomenon with the objective of getting as close to the ‘truth’ of the purpose of study as possible (Braun & Clarke, 2013: 285). The researcher will triangulate the findings from the face-to-face interviews and observations so as to facilitate the verification and validation of the research findings of the study (Maree (2007: 296).

3.9 TRUSTWORTHINESS

Trustworthiness is the way in which the researcher is able to convince the audience that the findings in the study are worth paying particular attention to and that the research is of a high quality standard (Lincoln & Guba in Maree, 2007: 297). This will be achieved through member checking. The researcher will employ member checking by determining the accuracy of the qualitative study findings through a process of taking the final research study report or particular descriptions or themes back to participants who will endorse whether the findings are accurate (Creswell, 2014: 201). In addition, the researcher will aim to eliminate any bias that might come up in the research study by persistently reflecting on the research process (Maree, 2007: 297).

3.10 ETHICAL CONSIDERATIONS

The researcher adhered to specific research ethical principles in conducting this study. These were namely: informed consent, privacy, confidentiality, anonymity, and protection from harm (Babbie, 2010: 66). The researcher first sought permission from the Gauteng Department of Education prior to approaching the principals of the two secondary schools with an approval letter from the regional office. Then the researcher sought consent from the Higher Degrees Committee of the Faculty of
Education at the University of Johannesburg. Then the researcher sought consent from the Ethical clearance and Ethics Committee of the Faculty of Education to conduct the study. The researcher bore in mind that it is imperative throughout the research process to follow and abide by ethical guidelines (Maree, 2007: 298).

3.10.1 Informed Consent and Voluntary Participation

The researcher briefed the participants on the ethical principles, the focus of the study and its objectives, and all the procedures of the research study (Ngwenya, 2011: 10). Furthermore, the researcher then sought informed consent of each of the four participants before interviewing, observing and audio recording them. Thus the informed consent to participate in the research was obtained through an Informed Consent form signed by all the participants. The participants completed and signed the Consent forms (See Appendix C).

3.10.2 Protection from Harm

Next, the researcher reassured participants that they would not be harmed and were free to withdraw from the study at any time, without any undue pressure to provide reasons or negative impact (Braun & Clarke, 2013: 63). Participants were assured that they would be treated fairly without any bias at all times during the research process.

3.10.3 Privacy, Confidentiality and Anonymity

Both the researcher and participants should have a thorough understanding pertaining to the confidentiality of the results and findings of the study (Burns in Maree, 2007: 299). The researcher emphasised to the participants that their privacy, anonymity, confidentiality and trust would be protected and not compromised (Henning et al, 2011:73). The researcher assured participants that all their information and responses obtained during the research study would be kept confidential and the results would be presented in an anonymous manner to protect their identities. The audio discs will be destroyed a few years after the completion of the research study (Maree, 2007: 299). Interview questions were given to the participants prior to the commencement of the interviews to allow them to familiarise themselves with them. Participants were allowed not to answer a question/s they deemed to be unfair or were uncomfortable with (Lichtman, 2010: 54). Ethical
clearance was obtained from the University of Johannesburg’s Faculty of Education Ethical Committee before the interviews were conducted. The entire research study was continuously conducted as prescribed by the requirements of the Faculty of Education Ethical Committee at the University of Johannesburg.

3.11 CONCLUSION

This chapter explained the research approach; paradigm and design; population sampling; in-depth interviews; observation; triangulation; trustworthiness and ethical considerations in a quest to explore the research aim and objectives and ultimately answer the research question.
CHAPTER FOUR
DATA ANALYSIS

4.1 INTRODUCTION

The true mark of a competent qualitative researcher is reflected in the analysis of the data which is a process that demands analytical craftsmanship and the ability to capture understanding of the data in writing (Henning et al, 2004: 101). Data analysis is described as “...the process of observing patterns in the data, asking questions of those patterns, constructing conjectures, deliberately collecting data from specifically selected individuals on targeted topics, confirming or refuting those conjectures, then continuing analysis, asking additional questions, seeking more data, furthering the analysis by sorting, questioning, thinking, constructing and testing conjectures, and so forth” (Mayan in Maree, 2007: 295).

The intention of data analysis is to make sense from text and image data. It entails a process of segmenting and taking apart the data, just like peeling back the layers of an onion, and putting it back together (Creswell, 2014: 195). Coding is a process of identifying elements that are connected to the research question (Braun & Clarke, 2013: 206). Furthermore, coding involves the classification of aspects in text data into categories that are related to the research topic and are useful in analysis (Lapan et al, 2012: 98). Data collected in this research study was analysed for description and themes using text analysis through interpreting the larger meaning of findings (Creswell, 2012: 16).

4.1.1 Content Analysis of the Interviews

Content analysis is a systematic method to qualitative data analysis that identifies and condenses the message content (Neuendorf in Maree, 2007: 101). It is a process of looking at data from various angles with a view to identifying keys in the text that will help us to comprehend and interpret the raw data. Thus content analysis is an inductive and iterative process where we investigate for similarities and differences in text that would corroborate or refute theory (Maree, 2007: 101).
Table 4.1 illustrates the summary of the content analysis and its phases:

<table>
<thead>
<tr>
<th>PHASES OF ANALYSIS</th>
<th>TYPE OF ANALYSIS</th>
<th>PHASE 1: Orientation to the data</th>
<th>PHASE 2: On the way – working the data</th>
<th>PHASE 3: First composition of the analysed data text (verbal and visual)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content analysis</td>
<td>Reading or studying data sets to form overview and to apprehend the context (within the data text).</td>
<td>-Coding segments of meaning.</td>
<td>-Writing the final themes of the set data.</td>
<td>-Presenting pattern of related themes.</td>
</tr>
</tbody>
</table>

Table 4.1 illustrating the summary of the content analysis and its phases (Henning et al, 2011: 138)

4.2 STEPS IN DATA ANALYSIS

4.2.1 Data Preparation

Data was organised according to the order of the interviews, dates and the four participants. In accordance with anonymity, confidentiality and privacy, the researcher used pseudonyms for all the participants. For ease of identification in this research study, each participant was code-named with a respective number. For instance, the first participant to be interviewed is coded P1. Then the audio-taped data was transcribed which means that the texts from the interviews was typed into word-processing documents verbatim (Henning et al, 2011: 127).
The transcribed information from the four participants’ interviews was then checked for accuracy before being broken into meaningful units and coded (Diale, 2010:23). See Appendix E for samples of transcriptions of the four participants’ interviews.

4.2.2 Data Analysis

Data analysis is a process of resolving data into its constituent parts, to show its characteristic elements and structure (Dey in Henning et al, 2011: 128). This researcher made it a point that data analysis was thorough, systematic, disciplined and carefully methodologically captured (Schwandt in Henning et al, 2011: 127). Furthermore, Tesch in Henning et al (2011: 127) describes the following principles appropriate for most types of qualitative research analysis:

- Qualitative analysis should be done throughout the data generation process. Thus the researcher should continuously reflect on impressions, relationships and connections while collecting the data.
- An analysis begins with reading all collected data and then breaking it down into smaller and more meaningful units.
- Data parts are arranged into a system that is guided by the data and hence the analysis is inductive.
- The researcher employs comparisons to develop and refine categories, to define conceptual similarities and to discover patterns.
- Categories are flexible and can be changed during the analysis.
- The analysis should honestly reflect the participants’ perceptions.
- The product of an analysis is a kind of higher-order synthesis in the form of patterns or themes, descriptive picture, or emerging theory.

The researcher in this study followed all these principles as a guide to data analysis. Thus in this research study, data collected was analysed for description and themes using text analysis through interpreting the larger meaning of findings (Creswell, 2012: 16).
4.2.3 Data Coding

Coding is a process of segmenting and naming text to form descriptions and broad themes in the data (Creswell 2012: 243). Henning et al (2011: 104) reiterate that the researcher, when working the data, should start with a set of data such as a transcribed interview. The researcher should read through the entire text to obtain a general overall impression of the text. This is called open coding. Furthermore, open coding entails an inductive process where the codes are selected according to what the data means to the researcher. This means that the researcher needs to have an overview of as much contextual data as possible by reading all the relevant interview transcriptions before any formal meaning is given to a single unit (Henning et al 2011: 104). The researcher works through the data and is able to make up the open coding codes. If the researcher is more familiar with the data, then the more competent she or he will be in labelling the units of meaning. This will then be followed by the grouping or the categorisation of the related codes. Categories are named inductively, using the data as a guide (Henning et al 2011: 105). In this study, the researcher looked for codes, which are words or phrases (or synonyms) that recur in data units obtained from the four participants. Thus the researcher was looking for a relationship between the codes and the research topic.

4.2.4 Establishing Categories, Themes and Patterns

Once the codes have been identified, the researcher moves from codes to categories. Next, the researcher grouped the codes and classified them into categories. Thus the researcher used comparisons to develop and refine categories, to define conceptual similarities and to discover patterns (Henning et al, 2011: 127). These relevant categories or themes made it easier to analyse the data and comprehend the findings of the study (Lautenbach, 2005: 6). The researcher obtained the codes from the interview transcripts which helped him derive the relevant categories. This was followed by the data interpretation process.
A diagrammatic representation of the process of coding from texts is illustrated in figure 4.1

4.2.5 Data Interpretation

This is the final step in data analysis and it entails making the findings or results of the qualitative research study. According to Lincoln and Guba in Creswell (2014: 200) data interpretation is like asking, “What were the lessons learned?” The researcher is then required to provide the lessons. The researcher must now bring his/her analysed data into context with the existing theory to show how it corroborates existing knowledge or adds new understanding to the body of knowledge. Thus in interpreting analysed data, the researcher should explore for emerging patterns, connections, concepts and explanations in his data (Maree, 2007: 111). Therefore, in finding the new meaning and comprehension, the
researcher will constantly traverse between existing theory and the insights from the

data to discover those aspects in the data that corroborate theory and those aspects

that may enhance or challenge existing theory (Maree, 2007: 112). This will be done

in this chapter to an extent but in Chapter Five the interpreted findings of this study

will be compared and contrasted with the existing literature and research studies to

reveal how it corroborates with existing knowledge about the educators’ experiences

in the Continuous Professional Development on the use of Information and

Communication Technology in secondary schools (Ramango, 2014: 67).

4.3 QUESTION BY QUESTION DATA ANALYSIS

Questions were analysed individually despite some of them sharing categories and

themes. For each question, the researcher identified codes, categories and themes.

Then the researcher discussed how categories developed from codes and themes
developed from categories (Ngwenya, 2011: 72).

4.3.1 Development of codes from Questions 1 and 2

The codes, categories and themes developed from this question are illustrated in

table 4.2 below.

<table>
<thead>
<tr>
<th>QUESTION</th>
<th>CODE</th>
<th>CATEGORY</th>
<th>THEME</th>
</tr>
</thead>
</table>
| 1        | -knowledge
- skills
- constantly
improving yourself
- challenge/develop
yourself
- training
- workshops/taking
courses | -knowledge and
skills are necessary
- constantly
challenge, develop
and improve
yourself
- training or
workshops or
taking a course is
important | -CPD is an ongoing
process of
acquiring
knowledge and
skills through
workshops or
training or taking
courses to improve
oneself. |
| 2        | -using/working with
technology
- communicating with
computer, tablet; | -ICT includes
computers; tablet;
smartphones;
laptops; iPads; | -ICT includes all
mobile devices
used to
communicate and |
| smartphone; laptop; iPad; projector | projectors and many others. | share information |
| -sharing information | -it is communicating and sharing information |

Table 4.2 Illustrating codes, categories and themes from questions 1 and 2

**QUESTION 1:** How do you understand the concept of continuous professional development?

The following codes were identified as they kept on recurring from most of the participants interviewed: knowledge; skills; constantly improving yourself; challenge or develop yourself, and training or workshops or taking courses. The codes knowledge and skills were assigned based on the participants’ beliefs that their acquisition is crucial in continuous professional development. Participant (P1: 1) commented, “...trying to improve yourself, your knowledge, your skills.” While another Participant (P4:33) asserted that, “...it is a requirement for most professionals to deepen their skills and the understanding of whatever content.”

The second code assigned was constantly improving yourself. The first participant (P1: 1) commented that, “...you are constantly trying to improve yourself and not to remain the same.” This was supported by the second participated (P2: 12) who observed that, “..continuous professional development for me means continually improving yourself as a teacher.” In addition, the other participant (P3: 25) acknowledged that continuous professional development means, “...to help teachers improve…”

The code challenge or develop yourself was assigned based on the observation of the first participant (P1: 1) who commented that it means, “Constantly professionally developing yourself and… as a teacher.” Furthermore, the other participant (P2: 12) emphasised that, “..you must always challenge yourself to become better than what you are.” This was further supported by a participant (P3: 25) who stated that, “...we have lots of courses offered by the Department of Education to help teachers develop themselves.”
The last code **training or workshops or taking courses** was assigned based on the comment of a participated (P2: 12) who emphasised that, “...There is also a place for you to go for professional development and training.” The same participant continued to say that, “…CPD means not being complacent…and doing training.” This is true because as a teacher sometimes we love to be in our comfort zone by being “being complacent in your role.” (P2: 12). The fourth participant (P4: 33) reiterates that, “…we do this professional development by doing workshops, by taking courses…”

**QUESTION 2: How do you understand the concept of Information and Communication Technology (ICT)?**

There are four predominant codes that were identified in this question and they include: using/working with technology or computers, laptops; email; internet, communicating with computer; tablet; smartphone; laptop; iPad; projector, and sharing information. The code using/working with technology was assigned based on the first participant’s (P1: 2) response that, “...where you can incorporate technology.” This was supported by the next participant (P2: 13) by commenting that, “…I understand it as working with computers and becoming computer literate.” This is collaborated by the other participant (P4: 33) who agrees that ICT is, “…using the technologies that are available to us.”

The second code laptops; email; internet was assigned because some participants describe ICT as such. One participant (P1: 2) describes ICT as, “…computer based, tablet based or even smartphone based applications.” Moreso, the other participant (P4: 34) concurs with the first participant by commenting that, “…I think of laptops, email, internet, phones, audio.” These quotations summarise the participants’ description and understanding of ICT.

Furthermore, the next code communicating with computer; tablet; smartphone; laptop; iPad; projector was assigned because the participant (P2: 13) believe that ICT, “…could be anything that you communicate with, a phone, an iPad, ehh, sometimes printers, faxes and all that.” This code is complemented by the code sharing information which was regarded as quite important in the description of the
significance of ICT. Thus the other participant (P4: 34) commented that, “…it is about sharing information in the most efficient way possible.”

4.3.2 Development of categories from Questions 1 and 2

The codes identified in Question 1 are knowledge; skills; constantly improving yourself; challenge or develop yourself, and training or workshops or taking courses resulted in the derivation of the categories knowledge and skills are necessary; constantly challenge; develop and improve yourself; and training or workshops or taking a course is important. Participants reiterated that knowledge and skills are the key ingredients in continuous professional development. Secondary school educators need to acquire new skills so that they could be successful in their profession (P1: 1). It is worth noting that in most professions, and teaching is no exception, it is a prerequisite for the professionals or staff to continue to sharpen their skills and understanding of the content (P4: 33). The acquisition of skills and knowledge should not be a once-off thing but educators should constantly strive to improve and develop themselves (P2: 12). Thus educators should guard against complacency in case they become irrelevant and lack the valuable information required in teaching (P2: 12). In addition, educators should also challenge themselves to become better in their practice (P2: 12). There are various avenues that the educators should take to empower themselves through Continuous Professional Development. Among many others, educators should go for training, attend workshops or take courses as ways of Continuous Professional Development (P4: 33). This will help educators obtain more relevant information and knowledge pertaining to their practice (P2: 12).

However, the codes identified for Question 2 includes using/working with technology or computers; laptops; email; internet, communicating with computer; tablet; smartphone; laptop; iPad; projector, and sharing information. These codes led to the following categories being derived: ICT includes computers; tablet; smartphones; laptops; iPads; projectors and many others. It is communicating and sharing information. Most participants defined ICT as comprised of, among others, computers, tablet, smart phones; laptops; iPads and projectors (P1: 2). These are examples of mobile devices which are commonly used and available in schools. Computers, laptops, iPads and projectors are used in
the teaching and learning in the classroom to benefit the leaners (P3: 25). Education continues to evolve and hence there is need to incorporate modern technology practices in the classrooms (P1:2). Furthermore, mobile devices are used to convey and share information efficiently (P4: 34). Thus in schools, educators are able to communicate with their learners and colleagues through mobile devices, for example via emails, skype or videos. Educators can also easily and efficiently share valuable educational information with their learners and colleagues alike. Thanks to the mobile devices which are oftenly referred to as Information and Communication Technology. In addition, Information and Communication Technology has drastically transformed this modern world into a global village. We now live in a world of immediacy. Every information we require or need to communicate or share is just a click-of-a-button away. Everything to do with information is at our fingertips. Thanks to the advent of the internet.

However, the discussion of the categories leads us to the investigation of the themes for both Question 1 and 2 respectively which are **CPD is an ongoing process of acquiring knowledge and skills through workshops or training or taking courses to improve oneself** and **ICT includes all mobile devices used to communicate and share information.** The themes will be explored in the next section.

### 4.3.3 Development of the theme from Questions 1 and 2

The categories in Questions 1 and 2 developed into the themes **CPD is an ongoing process of acquiring knowledge and skills through workshops or training or taking courses to improve oneself** and **ICT includes all mobile devices used to communicate and share information.** The theme for Question 1 which is **CPD is an ongoing process of acquiring knowledge and skills through workshops or training or taking courses to improve oneself** is a product of the educators’ views on the concept of Continuous Professional Development. Educators are of the opinion that professional development is an ongoing process and not just once-off incident. They also acknowledge that professional development should motivate educators to continue improving themselves to become better and not remain stagnant in terms of knowledge and skills (P1: 1). Professional development allows educators to challenge themselves to become better at teaching learners and never
to be complacent (P2: 12). The educators agree that professional development is comprised of knowledge and skills. It is worth noting that knowledge and skills are constantly changing at a rapid pace and therefore, there is need for teachers to try and keep up to date so that they remain relevant in the school system. Educators can acquire new knowledge and skills through training, workshops or by taking courses (P4: 33). The training, workshops or courses could be internal or external.

However, the categories in Question 2 developed into this theme **ICT includes all mobile devices used to communicate and share information.** This theme emanates from the categories the participants gave to describe the concept of ICT. Most participants understand ICT in terms of its examples such as computers, laptops, tablet, smartphone, projectors or iPads. These are the mobile devices that they mostly use in teaching and learning in schools (P1: 2). The availability and accessibility of the mobile devices in schools has transformed the education landscape as it is now possible to communicate and share information expediently. The communication and sharing of academic information could be between educators and learners or among the teaching fraternity as a body. The use of mobile technology in schools will possibly benefit learning and learners in the long run (P3: 25).

After the detailed discussion of the codes, categories and the themes emanating from Questions 1 and 2, it is now imperative to discuss the codes, categories and themes from Questions 3, 4 and 5 in the next sections.

### 4.3.4 Development of codes from Questions 3, 4 and 5

The codes, categories and themes developed from this question are illustrated in table 4.3 below.

<table>
<thead>
<tr>
<th>QUESTION</th>
<th>CODE</th>
<th>CATEGORY</th>
<th>THEME</th>
</tr>
</thead>
</table>
| 3        | -laptops  
-interactive learning boards  
-whiteboard  
-projectors  
-speakers/audio equipment | -information and communication technology equipment is available |       |
| 4        | -use it always | -there is |       |
Table 4.3 Illustrating codes, categories and themes from questions 3, 4 and 5

**QUESTION 3: Does your school have Information and Communication Technology equipment? If yes, describe the ICT equipment available in your school.**

The following codes were identified in this question as they kept on recurring from most of the participants interviewed in the study: laptops; interactive learning boards; whiteboard; projectors, and speakers or audio equipment. The first code laptops was assigned based on the participant who commented that, “…individual teachers have their own laptops that they get” (P1: 2). This was confirmed by the other participant who stated that, “…We have personal laptops for...
each staff.” The code **interactive learning boards** was identified based on the explanation of a participant who stated that, “...in the Maths classrooms they have...their Maths-based interactive learning boards” (P1: 2). The other participant agreed with this code by commenting that, “...a lot of the Maths staff have interactive boards” (P2: 13). Furthermore, the code **whiteboard** was selected because one participant pointed out that, “...they also have a way of working on the whiteboard” (P2: 13). While the other participant also agreed that, “...so I have got a whiteboard in my class and I just project the projector onto the whiteboard (P3: 26). The code **projectors** was assigned because the first participant proudly commented that, “…I mean we all have projectors” (P1: 2). In the same vein, the other participant stated that, “...many of them have projectors” (P4: 34). The final code **speakers or audio equipment** was identified because the participant elaborated that their school had, “...audio equipment we got that, speakers, and that kind of thing” (P1: 2). And the other participant pointed out that, “...and they have their speakers” (P2: 13). While the other participant confidently mentioned that, “...we have got speakers” (P3: 26). It is quite evident from the participants’ responses that generally their secondary schools have ICT equipment in most of the classrooms.

**QUESTION 4: Do you use Information and Communication Technology in your teaching? Give examples of how you use ICT in your teaching.**

However, the codes assigned to this question were identified because most of the participants spoke about them and they include: **use it always; show videos/sound clips to learners; show visuals/pictures; preparation of work; learners create projects/research and communication.** The code **use it always** was used by most of the participants to acknowledge their frequent use of ICT equipment in their schools. The first participant said that, “…most definitely yes” (P1: 3). The other participant also proudly acknowledged that, “...well all the teachers use projectors” (P4: 34). However, the code **show videos/sound clips to learners** was assigned because a participant explained that, “...I use it for everything from showing video clips and sound clips” (P1: 3). The other participant concurred that, “...I would go to find videos to make it more interesting and entertaining” (P2: 16). This was corroborated by a participant who said that, “...I can show the kids a video or anything like that” (P3: 26). And the last participant agreed and explained that, “...they show videos to the kids” (P4: 34).
The code **preparation of work** was identified because a participant emphasised that, “…my preparation is also done on there” (P2: 15). On the other hand, the code **learners create projects/research** was assigned based on the participant who commented that, “…with the Grade nines, we had them film their own horror film project from scratch” (P1: 3). The other participant pointed out that, “…I know that they do a lot of research on those laptops in order to keep up to date with what they are giving the kids” (P4: 34). The last code assigned to this question which is **communication** was used by a participant to explain the use of ICT, “…obviously we communicate with one another via email” CP4: 34). The participants responses indicate that they are using ICT equipment effectively and relevantly to improve teaching and learning in the secondary schools.

**QUESTION 5: Why do you think Information and Communication Technology is important in teaching and learning?**

The following codes were identified by the researcher because most of the participants alluded to them as part of their responses: **more interactive/interesting/more stimulating; you can google answers; and enhances learning; makes a difference.** The first code **more interactive/interesting/more stimulating** was more dominant as a response from most participants. One participant pointed out that, “…it makes learning for them more…more interesting” (P1: 4). The other participant in agreement commented that, “…it makes the lesson more interactive” (P3: 27). This was supported by a participant who said, “…it is interesting, you can use humour and that kind of thing” (P4: 35).

The code **you can google answers** was identified by this researcher based on the participant who excitedly said that, “…so if you are not sure about something, Google it” (P2: 16). The other participant supported this point by explaining that, “..sometimes the kids ask me things…and I do not know the answer. I can google it and I can say here is the answer” (P3: 27).

The code **enhances learning/makes a difference** was identified based on the participant who commented that, “…but I think using technology in teaching and learning does enhance learning” (P2: 16). The other participant in the same vein concluded that, “…So it makes a difference” (P3: 27). From the participants’
responses it is encouraging to note that ICT is significantly important in teaching and learning, and it has made great impact.

4.3.5 Development of categories from Questions 3, 4 and 5

The codes laptops; interactive learning boards; whiteboard; projectors, and speakers or audio equipment identified in question 3 were developed into the following category: information and communication technology equipment is available. All the participants interviewed in this study explained that their schools have ICT equipment. Almost all the classrooms in the schools have one form of ICT equipment or another. The equipment is in working order. The only glitches could be that the wi-fi or network is at times down. The educators in schools are not having the same equipment. Some have eBeams and interactive learning boards while others only have a projector and a whiteboard. But half a loaf is better than none.

However, the codes use it always; show videos/sound clips to learners; show visuals/pictures; preparation of work; learners create projects/research and communication from Question 4 were used to come up with the categories there is frequent use of ICT by educators, ICT used for communication and administration, and ICT used creatively to engage learners. The participants’ responses indicated that they use ICT equipment regularly in their teaching. Some participants even went to the extent to comment that they cannot imagine teaching without ICT equipment (P2: 16). Furthermore, the participants use the ICT equipment for communication purposes. For example, to communicate with colleagues, learners and parents through emails. The Information and Communication Technology equipment is also used by participants for administration tasks such as preparation of lessons, registration and entering academic information on the spreadsheets among many others. To add, the participants use ICT equipment creatively to engage the learners and enhance learning. The participants use videos, powerpoint and audio clips to make lessons more interesting and stimulating. This in the process improves learners’ concentration in the classroom.

On the other hand, the following categories were developed from Question 5: it leads to creativity in the classroom, learners are engaged and become more attentive, and provides immediate answers for teachers. Participants
acknowledged that ICT equipment has led to creativity in teaching and learning. Some participants commented that ICT equipment is important because it improves teaching and learning by making the learners more engaged and attentive in class. The participants were impressed that the ICT equipment continues to help them find immediate answers of the things they might not know off hand. Thus knowledge is at the fingertips of the educators due to the availability and use of ICT equipment in teaching and learning.

The next section discusses the development of themes from Questions 3, 4 and 5.

4.3.6 Development of theme from Questions 3, 4 and 5

The theme schools have ICT equipment which is used by educators for communication, administration, and to provide creative and stimulating teaching and learning experiences was assigned to the above mentioned questions from the responses of the participants. The participants’ schools are equipped with ICT equipment which are effectively used to improve the practice of teaching. Among other things, the participants use Information and Communication Technology to communicate with learners, colleagues and learners’ parents. ICT equipment is also used by participants to carry out their school administration responsibilities. In fact it makes their administrative tasks easier. In addition, ICT equipment has transformed the classroom into a creative and stimulating teaching and learning environment. The learners have benefited a lot from the introduction of Information and Communication Technology. The use of ICT in teaching and learning is enhancing learning in schools (P2: 16).

4.3.7 Development of codes from Question 6

QUESTION 6: What problems do you encounter when you use Information and Communication Technology in your teaching?

The codes, categories and themes developed from this question are illustrated in table 4.4.

<table>
<thead>
<tr>
<th>QUESTION</th>
<th>CODE</th>
<th>CATEGORY</th>
<th>THEME</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>-load shedding</td>
<td>-loss of power leads to frustration</td>
<td>-load shedding and technical problems</td>
</tr>
<tr>
<td>problems</td>
<td>ICT technical problems disturbs teaching and learning</td>
<td>make it impossible to teach using ICT</td>
<td></td>
</tr>
<tr>
<td>------------------------------</td>
<td>------------------------------------------------------</td>
<td>--------------------------------------</td>
<td></td>
</tr>
<tr>
<td>internet connection is slow</td>
<td>-ICT is a challenge for older educators</td>
<td></td>
<td></td>
</tr>
<tr>
<td>it is a challenge to older educators</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.4 Illustrating codes, categories and themes from question 6

The codes **load shedding, wi-fi/ technical problems, internet connection is slow and it is a challenge to older educators** emanated from the participants' responses. The code **load shedding** was assigned because the first participant quickly and jokingly responded, “…I would say load shedding” (P1:4). While the next participant commented that, “…So if there is load shedding there is no power” (P2: 18). The third participant also pointed out that, “…The biggest problem that we have had most recently is with the load shedding” (P3: 27). The last participant supported all the other participants by responding that, “…one of the things we have had was because of load shedding” (P4: 35). It is therefore evident that load shedding has a greater impact on the use of ICT in teaching and learning.

The code **wi-fi/ technical problems** was identified by most of the participants in their responses. A participant explained that, “…so, you might sometimes encounter technical problems” (P1: 4). Another participant commented that, “…the other teachers who are further away have issues with wi-fi problems” (P2: 18). The other participant supported this assertion by saying that, “…in my office they had to come and fix a cable because I could not get wi-fi there” (P3: 26). This reveals that technical problems especially the wi-fi is one of the major problems that affects the use of ICT in teaching and learning in schools.

The code **internet connection is slow** was identified from a participant who commented that, “…our internet connection is quite slow” (P4: 17). The same participant further elaborates that, “…the internet connection is slow because there is so many people who will be using it” (P3: 27).
The code it is a challenge to older educators was assigned because some participants alluded to it as a problem. The participant commented that, “…it doesn’t come as easily, I think to older colleagues” (P1: 5). The other participant agreed by stating that, “…I think the older staff don’t always know how to use it well” and “…they teach from the textbook and use the whiteboard” (P3: 26). The same participant further explained that, “…but some of the older staff do not use their laptop as often” (P3: 26).

After the discussion of the codes it is fitting that I discuss the development of categories from Question 6 in the next section.

**4.3.8 Development of categories from Question 6**

The categories loss of power leads to frustration, ICT technical problems disturbs teaching and learning, and ICT is a challenge for older educators were developed from the codes in Question 6. The loss of power through load shedding in schools causes immense frustrations to the participants as they would have prepared their lessons and would be ready to teach using ICT. A participant moaned that the loss of power “ …kind of throws me off a bit” and that, “…I am a bit frustrated because I have planned to have a powerpoint and all that” (P3: 27).

The category ICT technical problems disturbs teaching and learning illustrates that technical problems stall the teaching and learning in the classrooms. It is equally as frustrating as the load shedding because teachers become helpless and cannot use the ICT to teach learners effectively. Participants argue that most of these technical problems are not attended to timeously, thereby compounding the problem. The main reason why the technical problems are not attended to on time is that there is no resident Information Technology (IT) administrator in the school. They have to rely on the outsourced Information Technology administrator who only comes to their school in some days or only on call. At times this IT administrator does not arrive on time or if she arrives, she might not attend to all the technical problems on a single day.

The category ICT is a challenge for older educators implies that the senior members of staff in schools might not be comfortable with using ICT in teaching and learning. A participant commented that, “…yes there is a sense of it is a little bit
scary, it is unknown for my older colleagues” (P1: 6). With time and practice the older staff members will find themselves at home with using ICT in teaching and learning.

It is now important that we should discuss the development of a theme from Question 6 in the next section.

4.3.9 Development of theme from Question 6

The theme load shedding and technical problems make it impossible to teach using ICT was developed from the categories loss of power leads to frustration, ICT technical problems disturbs teaching and learning, and ICT is a challenge for older educators. This theme emanated from the overwhelming responses of the participants that load shedding and technical problems constitute the greatest barriers to the use of ICT in teaching and learning in schools. Load shedding seems to be here to stay because South Africa has a critical shortage of electricity. So there is need for Eskom to ration electricity so that its clients will have an equal share of it. Be that as it may, this has created a lot of collective frustration among the residents and citizens of South Africa. And schools are no exception to these frustrations as students lose valuable lessons that could help them understand concepts and acquire skills in various academic subjects.

Technical problems on the other hand, could be the result of infrastructural overload, for example, the wi-fi catering for more users that it is capable of at a time. Also there could be a shortage of IT administrators resident in the schools to attend to the technical problems timeously. This could make the technical problems last longer than is necessary. The solutions to these problems will be discussed in the last chapter of this study.

4.3.10 Development of codes from Questions 7 and 8

The codes, categories and themes developed from these questions are illustrated in table 4.5.

<table>
<thead>
<tr>
<th>QUESTION</th>
<th>CODE</th>
<th>CATEGORY</th>
<th>THEME</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>-informed about</td>
<td>-communication of training/conferences/courses</td>
<td></td>
</tr>
</tbody>
</table>
The following data codes were developed from Question 7: informed about conferences; in-house training; attend conferences/courses; school willing to pay for training, and staff development done when there is a need. The code informed about conferences was assigned to this question because several participants identified it. The first participant confidently explained that, “…the school is always telling us about the NAPTOSA conferences that are available, as well as independent conferences” (P1: 6). This participant was supported by the next...
participant who commented that, “…we have a notice board where they give us information of any conferences” (P2: 19).

The code **in-house training** is ascribed to a number of participants’ responses. One of the participants pointed out that, “…when they introduced something very new, there is always in-house training, staff training” (P1: 6). The other participant agreed by saying that, “…we bring in people to train us” (P2: 19).

Furthermore, the codes **attend conferences/courses** and **school willing to pay for training** was identified because one of the participants commented that, “…if we are not bringing people to train us, then we are attending conferences…The school is willing to pay if you are keen to” (P2: 19).

The code **staff development done when there is a need** was assigned to this question because a participant explained that, “it is not a booked thing. It is done if there is a need” (P1: 7). This is concurred by another participant who reiterated that, “…so there is no day set aside to improve in the ICT” (P2: 19). The next participant also confirmed that, “…I think this is just once in a while. They are not focusing on this as a growth area” (P4: 36). This apparently shows that schools do not have scheduled Continuous Professional Development in ICT sessions in their school planning calendars.

However, the next section will have a discussion on the codes from Question 8.

**QUESTION 8:** What role does the principal or your head of department play in supporting and guiding you as a teacher to attend continuous professional development programmes in the use of ICT?

The codes **principal mails information on conferences; HOD is supportive; provides for training of educators, motivates everyone on ICT and motivates staff by paying for training** came from the participants’ responses. The code **principal mails information on conferences** was assigned to this question because the first participant explained that, “…she is always active, we get the emails put up for us to attend conferences” (P1: 8). The other participant supported this point by commenting that, “…whenever a course comes up, he will announce it in the staffroom” (P4: 37).
The code **HOD is supportive** was identified because one participant responded that, “...my HOD is supportive as well” (P1: 8). The next code **provides for training of educators** was assigned to this question because one participant acknowledged that, “...he is very encouraging of any kind of development and learning” (P4: 37).

The codes **motivates everyone on ICT and motivates staff by paying for training** because most of the participants’ responses indicate that their principals are motivating them. One participant explained that, “…she is highly motivating…and tries to motivate everyone. The principal is definitely motivating us” (P2: 20). Another participant supports this point by commenting that, “…he does encourage us to attend” (P4: 37). The other participant further elaborated that, “…teachers did not have to pay, the school paid for the course. So I think that is motivational because you do not want to go if you have to pay” (P3: 30). This is evident that the principals motivate educators to attend training on the use of ICT in teaching and learning.

However, the next section will discuss the development of categories from codes in Questions 7 and 8.

### 4.3.11 Development of categories from Questions 7 and 8

The categories **communication of training/conferences/courses opportunities to staff; payment for conferences/training/courses by the schools; provision of internal training, and motivation and support from school management** were developed from the participants’ responses that created the codes from Questions 7 and 8. Some participants felt that their principals informed them of the training or conferences or courses opportunities available to them. This is the clarification of the category of **communication of training/conferences/courses opportunities to staff**. Thus participant (P1: 8) explained that, “...we get the emails put up for us to attend conferences.” While the other participant commented that, “...whenever a course comes up, he will announce it in the staffroom” (P4: 37). This will keep the participants informed about staff development opportunities available to them on the use of ICT. More staff might be persuaded to attend them. This could be linked with the following categories: **provision of internal training, payment for conferences/training/courses by the schools and motivation and support from school management**. This is also a way of encouraging more participants to attend the Continuous Professional Development on ICT because normally the cost of
training or attending courses and conferences is prohibitive. This will in the long run lead to more educators using ICT in teaching and learning in schools. This undoubtedly acts as an incentive to attend ICT programmes (P3: 29). Therefore, empowerment of educators through training, conferences and attending courses on ICT should be encouraged at all times.

Moreover, this now leads us to discuss the development of the theme from Questions 7 and 8 respectively, in the next section.

4.3.12 Development of theme from Questions 7 and 8

The development of the theme **school management should provide opportunities for educators to attend training, conferences and courses in ICT** emanated from the categories from Questions 7 and 8 respectively. The introduction of the use of ICT in teaching and learning in schools has placed a lot of responsibilities on the shoulders of educators. The educators are expected to have the skills of incorporating ICT in their teaching. On the contrary, not all educators have the knowledge and skills on the use of ICT in teaching and learning. The onus therefore lies on the School Management Teams to provide opportunities for educators to attend training, conferences and courses in ICT.

The school management should schedule time for Continuous Professional Development of all educators during school working hours if possible. It would be ideal if each school had a day per week scheduled for staff development on ICT. This would allow for more training sessions and opportunities for educators to enquire about specific ICT problems they could be experiencing. This would also give them a chance to work as a group, share ideas and improve on their ICT skills.

For a well-trained staff on the use of ICT in teaching and learning, is an asset to any educational institution. It is therefore, of paramount importance, that the School Management Teams should invest in the training of educators. This means that they should strive to increase budgets for ICT training. The School Management Teams should also elicit the assistance of the Ministry of Education and the Department of Education to be partners in their quest to empower educators with ICT skills. This will be beneficial to learners and learning per se.
### 4.3.13 Development of codes from Questions 9 and 10

The codes, categories and themes developed from these questions are illustrated in table 4.6 below.

<table>
<thead>
<tr>
<th>QUESTION</th>
<th>CODE</th>
<th>CATEGORY</th>
<th>THEME</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>-very effective -helps us on different learning styles and different ways to teach -makes administration easier</td>
<td>-staff development offered is effective -it provides information on different teaching and learning styles -lessens burden on educator administration</td>
<td>-The Department of Education and schools should conduct a needs analysis on the use of ICT in teaching before offering training to educators.</td>
</tr>
<tr>
<td>10</td>
<td>-training sessions for specific programs -ICT equipment and resources to be available to educators -permanent IT person in school -Department of Education to find out what educators need more</td>
<td>-training sessions to be tailor-made to meet the needs of educators -provide more equipment and resources to educators -employ a permanent IT administrator in every school to attend to technical problems</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.6 Illustrating codes, categories and themes from questions 9 and 10
QUESTION 9: Do you find the continuous professional development programmes in the use of ICT offered by your school effective?

The codes *very effective, it helps us on different learning styles and different ways to teach, and makes administration easier* were developed from Question 9. The code *very effective* was assigned based on the perspective of a participant (P2) who stated that, “…the training is effective” (P2: 20). While the other participant (P4) said that, “…I think so yes. I know that people who went on this recent one were blown away” (P4: 38). The third participant (P3) commented, “…yes definitely!” (P3:30).

The codes *it helps us on different learning styles and different ways to teach* was identified because of one of the participants’ responses. The participant (P1) explained that they had a “…a talk on different learning styles in the classroom” (P1: 9). The same participant continued to explain that, “…I think they are effective in always helping us to find new ways, different ways to teach as best as is possible” (P1: 9).

On the contrary, one of the participants argued that, “…I think some of the training is ineffective. It needs to be improved to cater for teachers’ needs in ICT” (P4: 38). One participant claimed that, “…the training programmes offered by the Department are ineffective and irrelevant to the teachers ICT needs. They are too basic” (P3: 30). Her sentiments were echoed by another participant who commented that, “…the Department of Education training is more of repetition. The same unhelpful things which we know already. They need to bring something new to the party” (P2: 21).

The code *makes administration easier* was assigned because one participant (P3) commented that, “…because it makes the administration so much easier. Being able to know how to do that makes it very easy” (P3: 30). These codes show that the Continuous Professional Development offered in schools is to a greater extent effective.

QUESTION 10: What would you suggest in order to improve the continuous professional development of educators in the use of Information and Communication Technology in schools?
The codes *training sessions for specific programs; ICT equipment and resources to be available to teachers; employment of permanent IT person in school, and Department of Education to find out what teachers need more* were identified as the participants kept on mentioning them. The code *training sessions for specific programs* was assigned to this question because one participant (P1) suggested that, “…perhaps one or two, maybe opportunities or training sessions about maybe specific programmes could be useful” (P1: 10). Another participant (P3) explained that, “…they could maybe provide more regular courses, especially for new teachers” (P3: 30).

Another code that was assigned was *ICT equipment and resources to be available to teachers*. One participant (P2) suggested that, “…they should have the ICT equipment more available to teachers” (P2: 22). Another participant (P4) commented that, “…a bigger budget, allocated specifically for this by the Department” (P4: 38). The same participant (P4) further commented that, “…surely it comes back to the resources of some kind or another at the end of the day” (P4: 39).

The code *employment of permanent IT person in school* was assigned based on the comments of some participants. One participant argued that, “…we could have more ICT personnel in schools” and “…I feel if we had an in-house IT person permanently in the school, all the ICT problems we have could be solved immediately in a way” (P2: 22). Another participant (P4) supported the idea and suggested that, “…we need another staff member to talk about technical problems or deal with technical problems” (P4: 39).

Another code *Department of Education to find out what teachers need more* was assigned because one participant felt the Department of Education does not know what teachers require as part of Continuous Professional Development. Thus the participant (P3) commented that, “…what happens is we get told what training the Department is offering but sometimes I think we do not need it” (P3: 31). This participant continued to comment arguing that, “…maybe the Department could try to find out that we need more help with like classroom management and using technology…so I think definitely, definitely needs analysis would be amazing” (P3: 32). It is evident from this code that some of the Department of Education’s training on ICT is irrelevant to most educators in schools.
These codes then lead us to the development of categories from Questions 9 and 10 in the next section.

4.3.14 Development of categories from Questions 9 and 10

The codes from Question 9 led to the development of the categories, staff development offered is effective, it provides information on different teaching and learning styles, and it lessens burden on teacher administration. The participants were of the opinion that they found the Continuous Professional Development (CPD) programmes in the use of ICT offered in their schools to be effective. Most of the participants explained that they had learnt new things they had not been taught at university. For example, some participants were pleased that they had gained invaluable information on different teaching strategies and students’ varied learning styles. For some learners respond better to visuals, some to auditory stimulus and others more to kinetic learning, that is, learning by touching (P1: 9).

Furthermore, some participants agreed that Continuous Professional Development in Information and Communication Technology offered in the schools was practical and therefore, helped them to perform various school administrative tasks efficiently. Thus it lessened the burden on educator administrative tasks and saved them time in the process to focus on their main task, which is teaching and learning in the classroom.

After the discussion on the categories, it is now important that we discuss the development of a theme from Questions 9 and 10 in the next section.

4.3.15 Development of theme from questions 9 and 10

The categories staff development offered is effective, it provides information on different teaching and learning styles, and it lessens burden on teacher administration developed the theme The Department of Education and schools should conduct a needs analysis on the use of ICT before offering training to educators. This theme came from the overwhelming sentiments of the participants who felt that Continuous Professional Development should cater for their professional needs on ICT. Some felt that the Department of Education is offering training and courses that are not relevant to their ICT needs. The participants felt
that the kind of training offered by the Department of Education does not help them enhance teaching and learning in schools.

Therefore, the participants are of the feeling that the Department of Education should conduct an effective needs analysis on Continuous Professional Development of educators on the use of ICT in schools. This will give the Department of Education an insight on the experiences of educators on the training they have received before on ICT and their expectations on future training. This will then empower the Department of Education to offer more relevant and effective Continuous Professional Development programmes in ICT to educators. The educators will benefit immensely through the acquisition of relevant and effective knowledge and skills in the use of ICT in the classroom. This will in turn cascade to the learners who will benefit from stimulating teaching and enhanced learning in the classrooms.

However, the schools were also found to be wanting by some participants when it came to Continuous Professional Development of educators on the use of ICT in classrooms. Some participants criticised the schools for not having a proper set day per week to cater for professional development of educators in the use of ICT. They commented that staff development was in most instances a once-off incident or once a year kind of thing. This, they felt did not give them time to have refresher courses or training to consolidate their skills on the use of ICT in the classroom. Furthermore, the participants were disappointed by the absence of a resident and permanent IT personnel who could help them in the training, and also attend to their technical problems expeditiously. Most state secondary schools outsource IT personnel who come to the schools on call or on certain designated days of the week. Therefore, there is need to employ a permanent IT administrator in all the government secondary schools if the dream of using ICT in teaching and learning is to be realised.

4.4 CONCLUSION

The introduction of Information and Communication Technology in education has been a welcome development to educators, learners, parents and all the other stakeholders. A large majority of secondary schools have adopted ICT as an integral part of their teaching and learning. It is important to note that educators play a critical role in the use of ICT in teaching and learning in secondary schools.
Therefore, educators should be given numerous opportunities for Continuous Professional Development on the effective use of ICT in the classrooms. The Department of Education and school principals should listen to the educators’ views and experiences on their use of ICT in secondary schools. This will give the education authorities an opportunity to conduct a needs analysis of what the educators require in terms of knowledge and skills on the use of ICT in teaching and learning in secondary schools. This will result in educators receiving relevant and effective Continuous Professional Development in the use of ICT in secondary schools. The secondary schools will benefit immensely if educators are using ICT effectively in teaching and learning.

The researcher will now discuss the findings and recommendations of the study in detail in the next chapter.
CHAPTER FIVE
FINDINGS AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter will give an overview of the research study paying particular attention to the literature review, research problem, research questions and objectives. It is important that the researcher revisits the purpose (aim) and objectives of the research study as outlined in chapter one.

The purpose of this study was to explore and describe educators’ experiences of continuous professional development in the use of Information and Communication Technology in Johannesburg secondary schools.

To help the researcher achieve the aim of the research study, the following objectives were set:

- to explore educators’ experiences of continuous professional development in the use of ICT.
- to examine the current continuous professional development of educators in the use of ICT offered in schools.

However, the researcher will now recap the significance of each chapter to the entire research study. Chapter one highlighted the researcher’s intention which was to explore and describe educators’ experiences of Continuous Professional Development in the use of Information and Communication Technology in Johannesburg secondary schools.

Chapter two discussed the literature review with reference to the concepts of Continuous Professional Development and Information and Communication Technology, the South African Policy Framework for Teacher Education and Development, Continuous Professional Development for educators in ICT in South Africa, the role of the principal and the School Management Team in the Continuous Professional Development of educators in ICT, and finally, constructivism and learning in education.
Chapter three dealt with the research approach; paradigm and design; population sampling; in-depth interviews; observation; triangulation; trustworthiness and ethical considerations.

Chapter four discussed steps in data analysis, and question by question data analysis. It also explained the process of the development of codes, categories and themes.

Finally, in chapter five, the researcher discussed the findings of the study as thematic relationships derived from participants’ views and researcher’s observations. In addition, the researcher discussed recommendations, critical reflection by the researcher, limitations of the study, recommendations for future research and a summary of the study.

5.2 RESEARCH FINDINGS AND DISCUSSION

The following are the research findings on the educators’ experiences of Continuous Professional Development on the use of Information and Communication Technology in schools. The research findings were based on the question by question analysis and were also related to the literature review. The findings were discussed as thematic relationships which emanated from participants’ responses.

Finding 1: CPD is an ongoing process of acquiring knowledge and skills through workshops or training or taking courses to improve oneself.

The finding revealed that Continuous Professional Development plays a pivotal role in equipping educators with knowledge and skills. A large majority of educators felt that Continuous Professional Development is crucial and it should be encouraged at all times. Educators understood Continuous Professional Development as constantly trying to improve yourself in your practice (P1: 1). Some educators regarded it as challenging yourself to become better and not being complacent in your profession (P2: 12). The educators’ understanding of Continuous Professional Development in this regard resonates with Chuang (2015: 28) who defines Continuous Professional Development as a self-initiated and an ongoing approach to improve and maintain individual’s knowledge, skills and competences, whether formally or informally. Another educator reiterated that, “...it is a requirement for many professionals to continue to deepen their skills and the understanding of
whatever content it is that they happen to share with learners and with one another by the various bodies that govern us as professionals" (P4: 33). It is very important for educators to be actively involved in Continuous Professional Development so that they remain relevant because knowledge and skills are continuously evolving.

Furthermore, educators equate Continuous Professional Development to the acquisition of skills and knowledge. They felt that any form of Continuous Professional Development should aim to inculcate new and relevant skills to them. If the professional development session seeks to give them a refresher course, for example on the use of Excel, most educators will not regard that as professional development. To the educators, Continuous Professional Development, to use the words of one of the participants, is “…acquiring just new skills as a teacher” (P1: 1).

Some educators felt that Continuous Professional Development should include training, attending workshops and taking courses. They believe that training is effective because you obtain relevant insights and ideas from other people which will prove handy in your profession (P2: 12). This educator’s view of training is indeed in agreement with Cronje et al in Mathibe (2007: 524) who describes training as a process that includes the provision of employees with relevant knowledge, skills, values and attitudes to perform a certain task efficiently and effectively. However, other educators believe that workshops and attending courses will empower them with relevant and practical information that will develop them into better educators.

It is also important to note that Continuous Professional Development is part of the constructivist learning theory which emphasises the role played by the learner in creating meaning and constructing understanding (Harasim, 2012: 68). In a nutshell, Continuous Professional Development is active learning. Thus active learning is student-centred, and the role of the student is to participate and act in an activity (Harasim, 2012: 72). Which is so true for Continuous Professional Development.

Finding 2: ICT includes all mobile devices used to communicate and share information.

The findings illustrate that educators understood what Information and Communication Technology entailed. Most educators explain ICT in terms of the equipment. The examples of ICT equipment they gave include computers,
projectors, laptops, iPads and tablets, among many others. Thus the educators’ understanding of ICT equipment corresponds with that of Adegbija et al (2013: 1) who explains that examples of electronic devices include among many others television, radio, computers, the internet and devices that can be connected to projectors for teaching and learning.

Educators also think that Information and Communication Technology is the idea of incorporating mobile technology into your teaching (P1:2). This means using ICT in your teaching to enhance learning and benefit the learners. Educators agreed that using mobile technology in teaching improved their practice to a larger extent. They commented that their lessons were more interesting and stimulating because of using ICT in teaching and learning. Hence, their teaching was effective as they could engage their learners in the classrooms.

Some of the educators were of the opinion that the use of ICT in teaching and learning made it easier for them to communicate and share information efficiently (P2: 13 & P4: 34). Educators pointed out that they can send relevant information in their subject areas to learners anytime. They could in turn receive learners’ feedback through ICT. Educators were impressed that they could also communicate with their colleagues, School Management Team and learners’ parents through emails. Not only that, educators explained that they can share valuable educational information with their colleagues and learners. Thus the educators’ idea of ICT is in line with that of UNESCO in Njoku (2015: 123) who define ICT as forms of technology that are employed to transmit, process, store, create, show, share or exchange information electronically.

The researcher agrees with educators that ICT does include mobile devices and can be used to communicate and share information efficiently as explained by the educators. Therefore, each and every school should strive to incorporate Information and Communication Technology in teaching and learning.

**FINDING 3: Schools have ICT equipment which is used by educators for communication, administration, and to provide creative and stimulating teaching and learning experiences.**
Educators in this study indicated that their schools have Information and Communication Technology equipment. Most educators commented that they have laptops, interactive learning boards, whiteboard, projectors, speakers and audio equipment. One teacher went a step further and stated that, “...they have Maths-based interactive learning boards” (P1: 2). Most of this equipment is available in their classrooms. The educators also explained that their Information and Communication Technology equipment was safe and secure in their classrooms because of adequate security in their schools.

Furthermore, educators unanimously agreed that they use Information and Communication Technology in teaching and learning regularly. Some educators use it to show educational videos and sound clips to learners (P1: 3). Educators confirmed that showing educational videos makes their lessons more interesting, entertaining and stimulating. They also explained that most of the learners enjoy educational videos (P: 16). Most educators agreed that the use of Information and Communication Technology in teaching and learning provided them with a myriad of opportunities to be more creative in the classroom. Other educators pointed out that they use Information and Communication Technology equipment to prepare their lessons, take registration, enter marks in the spreadsheets and make report comments, among many other tasks. Thus these educators would be using ICT to carry out their administrative tasks.

In addition, other educators use Information and Communication Technology to communicate and share information. This is possible because ICT is employed to transmit, process, store, create, show, share or exchange information electronically (UNESCO in Njoku, 2015: 123). Therefore, educators can communicate via email with colleagues, learners, school management and learners’ parents (P4: 34). They can also share educational information with colleagues and learners. Thus the use of ICT by educators in teaching and learning in schools provide windows of opportunities for both teachers and learners. The classroom becomes a conducive place for modern, meaningful and effective education. Finally, with the introduction of cutting edge technology in the educational system, there is indeed a dire need to equip and empower educators with relevant skills in Information and Communication Technology (Ciampa and Gallagher, 2013).
FINDING 4: Load shedding and technical problems make it impossible to teach using ICT.

The finding revealed that educators experienced a number of problems when they used Information and Communication Technology in teaching and learning in schools. Educators indicated that load shedding topped the list of all the problems they encountered. Load shedding has been and still continues to be a major problem in South Africa. Educators have stated that load shedding has made them frustrated on countless occasions (P3: 28). Their frustrations have been more pronounced, especially during school working hours when they have prepared lessons electronically and are ready to deliver them to learners. The loss of power at that particular moment renders the educator helpless and hence more frustrated. It also creates a backlog of work for the educators (P4: 35).

The other impediment is mainly technical problems. Educators explained that the erratic wi-fi continues to frustrate them. The intermittent loss of the network has made it difficult for the educators to download youtube videos and audios for teaching and learning purposes. Some educators have commented that videos for instance, download very slowly due to poor network. One educator pointed out that sometimes the network makes the internet connection to be slow because there will be a lot of people using it (P3: 27). This could most probably be due to network overload. The schools should try and upgrade wi-fi infrastructure to cater for an increase in the number of users.

Some educators have indicated that most schools do not have a permanent Information and Technology administrator to deal with ICT technical problems timeously. This has created more frustrations for the educators as they have to wait for hours or days to be attended to and have their technical problems solved. According to educators most schools outsource Information and Technology administrators and they only come to schools on designated days or only on call. Educators also indicated that sometimes the ICT technical problems could be affecting many educators at a time and it would be almost impossible for a single IT administrator to deal with them in a day. Therefore, there is a need for schools and the Department of Education to employ more permanent Information and Technology personnel to address ICT technical problems in schools.
Finding 5: School management should provide opportunities for educators to attend training, conferences and courses in ICT.

A large majority of educators indicated that the School Management Team does create opportunities for Continuous Professional Development in the use of ICT in teaching to an extent. This is most appropriate because educators are expected to improve themselves, update their knowledge and skills, and remain relevant in order to adapt to the new and changing roles and new teaching methods (Gartia, 2012: 1). Some educators, however, commented that principals normally email them invitations to workshops, conferences or training on the use of ICT (P1: 6 & P2: 19). Other educators indicated that the School Management Teams provide incentives like paying for ICT conferences, training and courses. Generally, the fees charged at ICT conferences, workshops or for training are prohibitive to most educators. Most of the educators have commented that when the school covers the cost for training, workshops, conferences or courses, this motivates them. One educator commented that, “…I think that is motivational because you do not want to go if you have to pay” (P3: 30).

Other educators have indicated that their schools sometimes provide in-house training on the use of ICT. The schools will hire an ICT specialist to come and facilitate training on a particular software program, for example, Powerpoint presentation. Training is most suitable to most educators because it incorporates the techniques and processes employers use to give both new and old employees the knowledge and skills they require to perform their tasks (Gartia, 2012: 183).

However, some educators argue that internal training or workshop in ICT should be done during school hours so that most staff members can attend. One educator argued that, “…the staff is committed to administrative tasks, teaching and extra murals. We all take more roles than one, which means our afternoons are taken over by our responsibilities to the school” (P2: 20).

Furthermore, the educators have indicated that the School Management Team is supportive and motivating when it comes to Continuous Professional Development in ICT. One educator said that, “…my HOD is supportive as well” (P1: 8). Another educator explained that, “…She is highly motivating. She promotes ICT” (P2: 20). Motivation does play a critical role in encouraging educators to attend and be
actively involved in Continuous Professional Development in the use of Information and Communication Technology in teaching and learning.

Finding 6: The Department of Education and schools should conduct a needs analysis on the use of ICT in teaching before offering training to educators.

The findings indicated that there is need for the Department of Education and schools to conduct a needs analysis on the use of Information and Communication Technology in teaching prior to offering training to educators. This was revealed by most educators who were satisfied with some of the Continuous Professional Development on the use of ICT offered in schools. One educator commented that, “…the training programme is necessary and effective” (P2: 21). Another educator supported the comment by saying that, “…they are always effective in always helping us find new ways, different ways to teach as best as possible” (P1: 9). On the contrary, one of the educators argued that, “…I think some of the training is ineffective. It needs to be improved to cater for teachers’ needs in ICT” (P4: 38).

However, most of the educators expressed their dissatisfaction on the training programmes offered by the Department of Education. One educator claimed that, “…the training programmes offered by the Department are ineffective and irrelevant to the teachers’ ICT needs. They are too basic” (P3: 30). Her sentiments were echoed by another educator who commented that, “…the Department of Education training is more of repetition. The same unhelpful things which we know already. They need to bring something new to the party” (P2: 21). The two educators’ criticisms of the ICT training programmes offered by the Department of Education is appropriate and corresponds to the comments of Khan and Bingimlas respectively. According to Khan (2014: 23), the teachers who had participated in the training program on the use of ICT in teaching, could not efficiently integrate it in their teaching tasks, except to demonstrate their most basic generic computer skills. This view is supported by Bingimlas (2009: 240) who posits that training programs in ICT only sought to focus on the teachers’ acquisition of basic ICT skills and failed to equip them with skills on how to develop the pedagogical aspects of Information and Communication Technology. It is apparent that there is indeed a need for the Department of Education and schools to conduct a thorough needs analysis on the
use of ICT in teaching before offering training or professional development to educators. The results from the needs analysis will make it easier for both the Department of Education and schools to develop training sessions that are tailor-made to meet the ICT needs of educators.

5.3 LIMITATIONS OF THE STUDY

The first limitation of the study was that the study was confined to two secondary schools in Johannesburg and only four participants were interviewed. This was necessitated by time constraints. Secondly, all the four participants in the study were female. The male participant who was supposed to take part in the study was involved in an accident early that morning and therefore, failed to attend the interview. Other males who could have been keen to participate in the study were not available as they were committed in the schools' extra murals. Thirdly, the use of purposeful sampling technique in this study decreased the generalizability of the findings of the study. The findings of the study, however, can still be relevant and useful to enhance the understanding of educators’ experiences of Continuous Professional Development on the use of Information and Communication Technology in secondary schools.

Finally, the findings of this study could be subject to numerous interpretations since it is a qualitative study (Morele, 2011: 22). Therefore, the findings of this study cannot be subjected to global generalisation (Denzil & Lincoln, 2005: 443). In addition, the themes and patterns that emerged from this study may not be of those that would emerge in similar studies using other secondary schools in Johannesburg.

5.4 RESEARCH RECOMMENDATIONS

The aim of the study is to explore and describe the educators’ experiences of Continuous Professional Development in the use of Information and Communication Technology in Johannesburg secondary schools. This section will discuss recommendations for practice and training.
5.4.1 The Department of Education must develop training programmes that are tailor-made to meet the ICT needs of educators.

The Department of Education should conduct a thorough needs analysis in secondary schools on the use of ICT in teaching and learning before offering training programmes to educators. This will make their training programmes on the use of ICT in teaching and learning more effective and relevant to the needs of educators.

5.4.2 Schools to provide time for professional development.

Schools should set a day per week or fortnightly after school for Continuous Professional Development in the use of ICT in teaching. Attendance must be compulsory to all educators in the school.

5.4.3 Schools should provide ICT equipment and infrastructure.

Most educators are passionate to attend professional development training sessions, conferences and workshops to acquire ICT knowledge and skills. But the knowledge and skills acquired will come to nothing if they are not equipped with Information and Communication Technology equipment such as laptops, computers, projectors or iPads to practice. The ICT infrastructure such as wi-fi should be reliable and efficient. If possible, wi-fi should be upgraded to cater for the increasing numbers of users in the school.

5.4.4 Professional development should be subject specific.

Professional development of educators in ICT becomes relevant and more practical if it is related to a specific subject. For example, if there is an ICT workshop on Mathematics teaching and learning, Mathematics educators will be eager to practice skills acquired in their teaching.

5.4.5 Schools should provide incentives

Some educators are not so keen to be involved in professional development in ICT. Therefore, there is need to motivate a large majority of educators to attend or
engage in professional development through incentives. For example, schools could pay fees for their training or a workshop on ICT. If the educators have achieved professional development qualifications, they could be rewarded with a salary increments. This will encourage more educators to be involved in professional development in ICT.

5.4.6 Schools should employ permanent ICT administrators.

A permanent ICT administrator should be employed by the school to specifically provide training and technical support to educators on Information and Communication Technology. This expert could also design tutorials on professional development for educators. This would encourage educators to be involved in Continuous Professional Development in ICT.

5.5 RECOMMENDATIONS FOR FUTURE RESEARCH

This research study was confined to two secondary schools in Johannesburg and had a sample population of only four participants. The findings of this study cannot be generalised as a representation of all secondary schools in South Africa. There are, therefore, opportunities for further studies to be conducted in different schools pertaining to educators’ experiences of Continuous Professional Development on the use of Information and Communication Technology in secondary schools. Further studies could also be conducted on the educators’ experiences on the use of ICT in teaching and learning in rural schools.

5.6 CONCLUSION

The researcher found out that educators’ experiences of Continuous Professional Development on the use of Information and Communication Technology in schools need to be taken seriously by all education authorities. Thus the Department of Education and schools should conduct a thorough needs analysis on the use of ICT in teaching before offering training sessions to educators. The Continuous Professional Development of educators in the use of ICT in teaching and learning should be tailor-made to meet the needs of educators. Furthermore, educators should be provided with opportunities to embark on various Continuous Professional
Development in the use of ICT in teaching programmes. Educators should be motivated and provided with incentives to be actively involved in Continuous Professional Development in the use of ICT in teaching. The incentives could take the form of payment of fees for their training or a workshop on ICT. Lastly, educators should be provided with all necessary ICT equipment and important resources such software.
LIST OF REFERENCES


Lallana, E. (2010), *ICT for Development policy, process and governance*, Briefing Note 2, United Nations Asian and Pacific Training Centre for ICT for Development,
January 2010


APPENDIX A

LETTERS OF PERMISSION
GDE RESEARCH APPROVAL LETTER

Date: 9 July 2015
Validity of Research Approval: 9 July 2015 to 2 October 2015
Name of Researcher: Khumalo P.
Address of Researcher: King David High School Linksfield; P.O. Box 46081; Orange Grove; 2119
Telephone / Fax Number/s: 011 480 4500; 078 676 5419
Email address: khumalop@sabje.co.za
Research Topic: Educators' expectations and experiences of continuous Professional Development in the use of Information and Communication Technology at Johannesburg Secondary Schools.
Number and type of schools: TWO Secondary Schools
Districts/HO: Ekurhuleni North and Johannesburg East

Re: Approval in Respect of Request to Conduct Research

This letter serves to indicate that approval is hereby granted to the above-mentioned researcher to proceed with research in respect of the study indicated above. The onus rests with the researcher to negotiate appropriate and relevant time schedules with the school/s and/or offices involved. A separate copy of this letter must be presented to the Principal, SGB and the relevant District/Head Office Senior Manager confirming that permission has been granted for the research to be conducted. However participation is VOLUNTARY.

The following conditions apply to GDE research. The researcher has agreed to and may proceed with the above study subject to the conditions listed below being met. Approval may be withdrawn should any of the conditions listed below be flouted:

CONDITIONS FOR CONDUCTING RESEARCH IN GDE

2015/02/10

Making education a societal priority

Office of the Director: Knowledge Management and Research
9th Floor, 111 Commissioner Street, Johannesburg, 2001
P.O. Box 7710, Johannesburg, 2000 Tel: (011) 355 0506
Email: David.Mohade@gauteng.gov.za
Website: www.education.gauteng.gov.za
1. The District/Head Office Senior Manager's concerned must be presented with a copy of this letter;
2. A copy of this letter must be forwarded to the school principal and the chairperson of the School Governing Body (SGB);
3. A letter / document that outlines the purpose of the research and the anticipated outcomes of such research must be made available to the principals, SGBs and District/Head Office Senior Managers of the schools and districts/offices concerned;
4. The Researcher will make every effort obtain the goodwill and co-operation of all the GDE officials, principals, SGBs, teachers and learners involved. Participation is voluntary and additional remuneration will not be paid;
5. Research may only be conducted after school hours so that the normal school programme is not interrupted. The Principal and/or Director must be consulted about an appropriate time when the researcher/s may carry out their research at the sites that they manage;
6. Research may only commence from the second week of February and must be concluded before the beginning of the last quarter of the academic year. If incomplete, an amended Research Approval letter may be requested to conduct research in the following year;
7. Items 5 and 6 will not apply to any research effort being undertaken on behalf of the GDE. Such research will have been commissioned and be paid for by the Gauteng Department of Education.
8. It is the researcher's responsibility to obtain written parental consent and learner;
9. The researcher is responsible for supplying and utilizing his/her own research resources, such as stationery, photocopies, transport, faxes and telephones and should not depend on the goodwill of the institutions and/or the offices visited for supplying such resources;
10. The names of the GDE officials, schools, principals, parents, teachers and learners that participate in the study may not appear in the research report without the written consent of each of these individuals and/or organisations;
11. On completion of the study the researcher must supply the Director: Education Research and Knowledge Management with one Hard Cover, an electronic copy and a Research Summary of the completed Research Report;
12. The researcher may be expected to provide short presentations on the purpose, findings and recommendations of his/her research to both GDE officials and the schools concerned; and
13. Should the researcher have been involved with research at a school and/or a district/head office level, the Director and school concerned must also be supplied with a brief summary of the purpose, findings and recommendations of the research study.

The Gauteng Department of Education wishes you well in this important undertaking and looks forward to examining the findings of your research study.

Kind regards

----------------------------------------
Dr David Makhado
Director: Education Research and Knowledge Management
DATE: 2015/07/10

Office of the Director: Knowledge Management and Research
9th Floor, 111 Commissioner Street, Johannesburg, 2001
P.O. Box 7710, Johannesburg, 2000 Tel: (011) 355 0506
Email: David.Makhado@gauteng.gov.za
Website: www.education.gpg.gov.za
ETHICS CLEARANCE

Dear P Khumalo

Ethical Clearance Number: 2015-038

Educators’ expectations and experiences of continuous professional development on the use of Information and Communication Technology in Johannesburg secondary schools’

Ethical clearance for this study is granted subject to the following conditions:

- If there are major revisions to the research proposal based on recommendations from the Faculty Higher Degrees Committee, a new application for ethical clearance must be submitted.
- If the research question changes significantly so as to alter the nature of the study, it remains the duty of the student to submit a new application.
- It remains the student’s responsibility to ensure that all ethical forms and documents related to the research are kept in a safe and secure facility and are available on demand.
- Please quote the reference number above in all future communications and documents.

The Faculty of Education Research Ethics Committee has decided to

☑ Grant ethical clearance for the proposed research.
☐ Provisionally grant ethical clearance for the proposed research
☐ Recommend revision and resubmission of the ethical clearance documents

Sincerely,

Prof Geoffrey Lautenbach
Chair: FACULTY OF EDUCATION RESEARCH ETHICS COMMITTEE
8 October 2015
APPENDIX B

LETTERS TO PRINCIPALS
30 August 2015

Dear Sir/Madam

Re: REQUEST TO CONDUCT RESEARCH INTERVIEWS IN YOUR SCHOOL

I am a Masters student at the University of Johannesburg and currently writing my Dissertation entitled: EDUCATORS’ EXPERIENCES OF CONTINUOUS PROFESSIONAL DEVELOPMENT ON THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGY IN JOHANNESBURG SECONDARY SCHOOLS

I have chosen your school as part of my research study. Please, can I conduct my research study at your school. I would like to interview two teachers from any subject area who are using Information and Communication Technology in their teaching. Furthermore, one or two of those teachers could preferably be a senior member of staff (has been in the service for a long time). I have already received clearance from the Department of Education to conduct research in your school.

Yours sincerely

Philbert Khumalo
(Researcher: 078 676 5419)
APPENDIX C

CONSENT LETTERS
Informed Consent/Assent Form

Project Title:
Educators' experiences of continuous professional development on the use of Information and Communication Technology in Johannesburg secondary schools

Investigator:
PHILBERT KHUMALO

Date:
8 September 2015

Please mark the appropriate checkboxes. I hereby:
☐ Agree to be involved in the above research project as a participant.
☐ Agree to be involved in the above research project as an observer to protect the rights of:
  ☐ Children younger than 18 years of age;
  ☐ Children younger than 18 years of age who might be vulnerable; and/or
  ☐ Children younger than 18 years of age who are part of a child-headed family.
☐ Agree that my child, _________________________ may participate in the above research project.
☐ Agree that my staff may be involved in the above research project as participants.

☐ I have read the research information sheet pertaining to this research project (or had it explained to me) and understand the nature of the research and my role in it. I have had the opportunity to ask questions about my involvement in this study. I understand that my personal details (and any identifying data) will be kept strictly confidential. I understand that I may withdraw my consent and participation in this study at any time with no penalty.

☐ Please allow me to review the report prior to publication. I supply my details below for this purpose:
☐ Please allow me to review the report after publication. I supply my details below for this purpose:
☐ I would like to retain a copy of this signed document as proof of the contractual agreement between myself and the researcher:

Name:

Phone or Cell number:

e-mail address:

Signature: ____________________________

If applicable:
☐ I willingly provide my consent/assent for using audio recording of my/the participant’s contributions.
☐ I willingly provide my consent/assent for using video recording of my/the participant’s contributions.
☐ I willingly provide my consent/assent for the use of photographs in this study.

Signature (and date): ____________________________ 31/03/2015

Signature of person taking the consent (and date): ____________________________ 2/10/2015

Faculty of Education Research Ethics Committee, University of Johannesburg, Updated January 2014
Please report any instance of unethical research practice to pr@johwits.ac.za or 011 659 3016

87
Informed Consent/Assent Form

Title:
Educators' experiences of continuous professional development on the use of Information and Communication Technology in Johannesburg secondary schools

Investigator:
PHILBERT KUMALO

Date:
5th September 2015

Please mark the appropriate checkboxes. I hereby:

☑ Agree to be involved in the above research project as a participant.
☐ Agree to be involved in the above research project as an observer to protect the rights of:
  ☐ Children younger than 18 years of age;
  ☐ Children younger than 18 years of age that might be vulnerable in any way;
  ☐ Children younger than 18 years of age who are part of a child-headed family.
☐ Agree that my child, ____________________________, may participate in the above research project.
☐ Agree that my staff may be involved in the above research project as participants.

☐ I have read the research information sheet pertaining to this research project (or had it explained to me) and understand the nature of the research and my role in it. I have had the opportunity to ask questions about my involvement in this study. I understand that my personal details (and any identifying data) will be kept strictly confidential. I understand that I may withdraw my consent and participation in this study at any time with no penalty.

☐ Please allow me to review the report prior to publication. I supply my details below for this purpose:
☐ Please allow me to review the report after publication. I supply my details below for this purpose:
☐ I would like to retain a copy of this signed document as proof of the contractual agreement between myself and the researcher

Name:

Phone or Cell number:

E-mail address:

Signature:

If applicable:
☐ I willingly provide my consent assent for using audio recording of my the participant's contributions.
☐ I willingly provide my consent assent for using video recording of my the participant's contributions.
☐ I willingly provide my consent assent for the use of photographs in this study.

Signature (and date):

Signature of person taking the consent (and date):

Faculty of Education Research Ethics Committee. University of Johannesburg. Updated January 2014
Please report any instance of unethical research practice to geoethics@uj.ac.za or 011 586 3016
APPENDIX D

INTERVIEW SCHEDULE
UNIVERSITY OF JOHANNESBURG

RESEARCH TITLE: EDUCATORS’ EXPERIENCES OF CONTINUOUS PROFESSIONAL DEVELOPMENT ON THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGY IN JOHANNESBURG SECONDARY SCHOOLS

RESEARCHER: P. KHUMALO STUDENT NUMBER: 201213415

SUPERVISOR: PROFESSOR P. DU PLESSIS

INTERVIEW SCHEDULE

1. How do you understand the concept of continuous professional development?
2. How do you understand the concept of Information and Communication Technology (ICT)?
3. Does your school have Information and Communication Technology equipment? If yes, describe the ICT equipment available in your school.
4. Do you use Information and Communication Technology in your teaching? Give examples of how you use ICT in your teaching.
5. Why do you think Information and Communication Technology is important in teaching and learning?
6. What problems do you encounter when you use Information and Communication Technology in your teaching?
7. How does your school create opportunities for continuous professional development of teachers in the use of Information and Communication Technology?
8. What role does the principal or your head of department play in supporting and guiding you as a teacher to attend continuous professional development programmes in the use of ICT?
9. Do you find the continuous professional development programmes in the use of ICT offered by your school effective?
10. What would you suggest in order to improve the continuous professional development of educators in the use of Information and Communication Technology in schools?

11. Last but not least, are there any questions or comments you would like to add pertaining to the interview we have just conducted?
APPENDIX E

TRANSCRIPT SAMPLES
RE: Good afternoon to you.

P1: Good afternoon.

RE: Welcome to our research where I am researching on the Educators’ experiences of continuous professional development on the use of Information and Communication Technology in Johannesburg secondary schools

P1: (smiling) Thank you.

RE: Your school is one of my research areas where I would love to conduct my research. Welcome to this interview.

P1: Ehm! Yes. Nodding head. Thank you.

RE: The first question I have for you is the following:

RE: How do you understand the concept of continuous professional development?

P1: Ok. So I understand it as the idea that as you are teaching from year to year you are constantly trying to improve yourself and not to remain the same but trying to improve yourself, your teaching ability, your knowledge, your skills. So it’s really you are trying to be not the same year after year. Constantly professionally developing yourself and acquiring just new skills as a teacher.

RE: That’s good.

RE: How do you understand the concept of Information and Communication Technology (ICT)?

RE: This is the thrust of my research.

P1: Ok so to me, information and communication technology, particularly information technology it’s the idea of humm, you know, where you can incorporate technology particularly in computer based, tablet based or even
smart phone based applications into your teaching.  *(Using hand gestures to stress this point)* Ehmm. And also how to...modern technology practices in the classroom.

RE: Does your school have Information and Communication Technology equipment? If yes, describe the ICT equipment available in your school.

P1: Yes, we do.

RE: And then I would like you to just to describe the ICT equipment available in your school.

P1: Ok, so most if not all classrooms and individual teachers have their own laptops that they get. Uhm, we also depending on the classroom. I should give you an the example. Uhm., in the Maths classroom, for example, they have permitean boards which is their Maths-based interactive learning boards where hey can ehmm, interact with the boards directly *(gesturing with her hand)*. And then in other classrooms we have cammy technology which is with the stylus and be able to demonstrate and project your work on the white board.

RE: That's good.

P1: I mean we all have projectors. Projectors in the hall, projectors in the multi-purpose room, in the staffroom. Ehmm, audio equipment we got that, speakers, and that kind of thing and so on and so forth. Even things like we got down the sports office, we got ehmn a television screen that screens important information and upcoming events uhmn and so things like that as well. They use that kind of thing a lot.

RE: Ok. So it seems like apparently you have a lot of equipment and technology in your school.

P1: Yes yes yes! *(smiling and nodding head).*

RE: Do you use Information and Communication Technology in your teaching? Give examples of how you use ICT in your teaching.

P1: Most definitely yes.
So to try and give me examples where you use ICT in your teaching.

P1: So just on the top of my head recent projects we have done in English with the Grade nines, we had them Ehmn, film their own horror film project from scratch.

RE: Wow! Good.

P1: The idea is we had them using technology, everything from their smart phones and cameras and tablets to uhmn, to their own laptops. And in the classroom as well we had them demonstrate how to use programs like Movie-maker or editing apps and how they can use that technology. Uhmn, we use that technology to project their final form to screen that they put together. We show them in the classroom. So that is something that they themselves are also using technology. Uhmn, on a day-to-day basis, ehmn, I use it for everything from showing, uhmn, video clips and sound clips based on the material we are covering, visuals like in poetry when you are looking at a particular poem, you can show them a picture that makes it more interesting for them I think.

RE: So is your subject area English?

P1: yes yes yes. (excited).

RE: Do they really enjoy it?

P1: (Interjecting) Yes, they respond to something visual that they can see and which is easier to deal with on the screen and the speakers and that kind of thing. These are just a few examples.

RE: Good, thank you.

RE: Why do you think Information and Communication Technology is important in teaching and learning?

P1: And so for a variety of reasons. Ehmm. On the most...Ehmn. I mean the first consideration is that it often makes learning for them more relevant, more accessible, more interesting. (laughs). And not even for them more entertaining just for the sake of entertainment but more stimulating for them to
be taught in an environment like that. Where uhmn, I mean on the second level because the world is moving so fast on technology and everything is technology-based, it makes sense so that as part of their life skills in their level of preparation out of school. I mean there are part of life that they are able to use tablets, cell phones that they are familiar enough and able to see and that they are comfortable with them in their working environment. They can learn how to do things and become better in that media.

RE: What problems do you encounter when you use Information and Communication Technology in your teaching?

P1: Hahaha (laughing). I would say loadshedding. Hahaha (laughing). Sorry I was just talking. So, you might sometimes encounter technical problems. We have a fantastic IT support system at the school. We got someone who is at the premises and can immediately provide support for us. I think that the worst frustration is when stuff doesn’t work. Again I think, ehhh, also then ehhh, it is a problem. Other problems I suppose are sometimes when the learners themselves don’t, because perhaps they have a less privileged background, they might not always have access to the same equipment and that would be a challenge. We then help them to become familiar with the new equipment and with that sort of thing. Like for example, the Cammy project. It’s all part of the teaching to develop skills. But it is also difficult because if we looking at that one day they will be able to do stuff more electronically, for learners who hardly do that efficiently at home. I think that probably, ehh, is one of the more significant challenges.

RE: Do you have learners from the less privileged backgrounds?

P1: We have quite a few in the scholarships programmes. Quite a few of our feeder areas are less privileged areas as well. So absolutely, it is no way that all the children we are teaching have access to cellphones, laptops and tablets at home.

RE: And what have you done to help them?

P1: Yes, we have got the scholarships programme in place and we ourselves try to make computers available for them. We have got a dedicated Computer...
Centre that is equipped with a lot of software, the internet. So it is a supervised environment, so they can go and do research, they can work on software, that kind of thing. Ehhh, we also have a class called Research Skills where they can also learn how to look for information, do referencing, copying and all that sort of thing. We trying to provide at school, a way of becoming familiar with that.

RE: Are you comfortable using computers yourself?

P1: Yes, yes, yes! (nodding her head).

RE: It is not like an impediment?

P1: No, no! I mean I use them in the classroom quite often and at home I use my computer quite a lot. I very interested in software and how to know to make things more exciting easier. Hahaha (laughing).

RE: How about your colleagues? I am looking at a few members of staff, like senior members of staff. Like in your department, are they comfortable with computers or they some who are not?

P1: Hahaha. Certainly it is much easier for the younger staff. I have occasionally helped my older colleagues who needed some help to do with tasks in certain software and helped them in things like that. It doesn’t come as easily, I think to older colleagues. Hahaha (laughing).

RE: Is there any kind of apprehension or fear when it comes to using computers?

P1: Uhmm, yes, yes! I think everybody is pretty good at still trying but yes there is a sense of it is a little bit scary, it is unknown for my older colleagues. Yes.

RE: How does your school create opportunities for continuous professional development of teachers in the use of Information and Communication Technology?

P1: Ahhh, well the, we, the school is always telling us about the NAPTOSA Conferences that are available, as well as independent conferences and not necessarily linked to NAPTOSA. But, ehmm, just recently, I forget the name, we were told about the conference that is taking place, I think it is in the
holidays where it is a two-day conference which is specifically about information and communication technology. And within the school internally as well, whenever we introduce very new technology, such as the Cammy Program, uhm, it is not Cammy. The Cammy one is the extra lesson. The other one is that system where you are using the stylus in the ebeam. When they introduced something very new, we get, there is always in-house training, staff training. So, uhm, someone will come in in the afternoon and we have a training session on the new technology. Uhm, so yes.

RE: Does that happen more often? Because I would like to attend.

P1: We don’t do it more consistently and only if something new and has never been used before has been introduced. And so, the last big one was the… I’m forgetting it, uhm, the name is escaping (silent, holding her chin, trying to remember). Ehhh, it is the ebeam, ebeam! (excited and laughing). Hahaha. It is the ebeam technology that is the last one that we had where this brand new system that we had never seen before. So, you know, we had training of that for example. But not necessarily the weekly thing. Hahaha.

RE: But don’t you have some regular ones, like some kind of refresher stuff?

P1: Ehmm, I think if we ask for it absolutely. I think at any point if we say that you know, can we go back and we need some help here, then that is also done.

RE: So on which days do you have your staff development?

P1: Yes. It depends, it is not a booked thing. It is done if there is a need.

RE: Maybe I should attend one? I should liaise with the Headmistress. Maybe there will be one before I finish up the write up of my research thesis.

P1: Yes. Perhaps, yes, yes. As I said it will be dependent on there being some new technology coming in. But yah. Hahaha (laughing).

RE: Do you think this has been helpful, like the ebeam you spoke about, in a way?

P1: Ahh, yes.
**RE:** At the end of the session do they give you some pamphlets that you can refer to practise on your at your own special time?

**P1:** I think yes yes. They also give us personal contact details of people we can readily contact for support. Already, they have given us pdfs on the computer as well that they have the Training material on it. Uhhm and yes those sessions are helpful definitely, especially because they are demonstrations and we sit, you know, for something like that. And we would sit simultaneously and work through the material, uhhm, that they are demonstrating at the same time. It is not just a book, it’s practical learning. It is very helpful.

**RE:** Don’t you think there could some kind of a follow up? The ebeam was a big one, I’m just saying. Was there any follow up after?

**P1:** We just had one session. I don’t remember there being, like six months down the line, someone coming to help. That could be helpful if it happened. I think any extra reinforcement, uhhm, and to check and see all that the new software update and anything like that. For me definitely that kind of thing is useful, yes.

**RE:** Do they usually give you a platform at times to air your experiences or views on whether this is helpful or not?

**P1:** So that kind of thing only comes out on, ehh, because we often have the staff training that is not necessarily, uhhm, ICT training. That’s more personal skills or learning skills and things like that. So lately we have been having like one of those about once a term and often people in those sessions will be talking about what they are doing in the class and people will then say we are using technology this way. And then other people might say, ohh, we don’t necessarily use technology that very much. So it often comes out in those sort of sessions. Yes.Yah yah!

**RE:** Thank you. This leads to the next question.
RE: What role does the principal or your head of department play in supporting and guiding you as a teacher to attend continuous professional development programmes in the use of ICT?

P1: Ok, so for the Principal I would say she is always active, we get the emails put up for us to attend conferences, the NAPTOSA conferences and that sort of thing. And often if cost is a factor as well, then the school can look at being able to cover part of the cost involved and then just depends on more or less on...uhh... And then my HOD is supportive as well, not necessarily for ICT but we have attended, for example, a conference on Advanced English Programme together. We have been let to go and attend as a group to improve our skills. There has been a lot of support I would say from management at the school for that kind of thing.

RE: In terms of payments, has the school made some payments for one or two people to attend the conferences?

P1: I think so, I think so. Yes, yes I think so. Twice I'm aware. Yes, yes.

RE: Do you find the continuous professional development programmes in the use of ICT offered by your school effective?

P1: Yes, yes. (nodding head). I mean if we looking it over the idea of professional development, then yes, yes absolutely! It is important to have, uhh, special sessions I think where you are aware of what you need to be better in the classroom. And I think the school does provide for a few options.

RE: So in what way have they been effective? I would like you to elaborate.

P1: So they would consider how you teach. For example we had a conference on.. Not a conference but a talk on different learning styles in the classroom and how some learners respond more visually, some respond to auditory stimulus, some respond to more kinetic learning so they learn by touching. So then looking at the ICT you can then in your own classroom realise that when you play a video clip you appealing to those learners specifically. Which you know if if (stammering) it weren’t for these sort of talks we wouldn’t be aware of necessarily, you know as teachers. So yah I think they are
effective in always helping us to find new ways, different ways to teach as best as is possible.

**RE:** And is it motivating in a way?

**P1:** Ohh yes definitely!

**RE:** I want us to go back a little bit to the role of the Principal or the HOD. Have they really motivated you on the use of ICT in the classroom?

**P1:** Ohh yes, yes.

**RE:** In what ways? Please, give me one or two examples?

**P1:** Firstly, they definitely lead by example. So the Principal herself is excited about new information, technology, ideas. She is the one who uhhm, ultimately gives the go ahead on new technology and is interested to hear what is out there and what we can implement. So with the Maths Permethian boards, she was wanting to find out about that and implement it in the school. She often says to us just in general that it is so important to have the the learners equipped for technology. And the same with my HOD as well. Although she is perhaps an older teacher, is actually very excited about technology and programs and she teaches with the computer as well, she teaches with ebeam. So it’s very much a lead from behind sort of scenario. *(laughing).* And then they also ask how things have been going with us with ebeams and various strategies. Do we find them useful as well?

**RE:** Who buys you laptops?

**P1:** That’s sponsored by the School Fund System...And we find it motivating absolutely!! Yes, yes!

**RE:** You don’t write an exam to get a laptop?

**P1:** No, I think there’s a detailed process involved. But the most important thing is that staff members are willing and able to use a personal computer in teaching. Which is then the philosophy.

**RE:** So every staff member has a laptop?
P1: Uh, uh, it is usually set up like that and there might be an exception and I’m not a hundred percent sure and I don’t want to definitely say yes or no because im not in charge of the computers, so uhmm, distribution. But the model is that everybody should be able to use the computer in the classroom.

RE: Was this an initiative from the Headmistress to source for sponsorship so that every teacher should have access to technology?

P1: And I think so. I have only worked in the school under the current headmistress, so I wasn’t at the school with the previous headmistress. So when I came in, uhmm, the momentum was starting to build where there were placing more emphasis on this. So it seems to be that it was pioneered by the current headmistress. It is not used as part of an appraisal. No, no, it’s not set up as a reward.

RE: That’s good.

RE: What would you suggest in order to improve the continuous professional development of educators in the use of Information and Communication Technology in schools?

P1: I suppose just generally, ehhh (Pauses). Perhaps one or two, uhmm, maybe opportunities or training sessions about maybe specific programmes that could be useful. Not necessarily the brand new ones, but existing programs that most staff members don’t know how to use. I think that would be a good idea. Perhaps also for older staff members who are not comfortable with existing software. I mean, I mean, some staff members might struggle with some aspects of Word or Excel for example. Perhaps having sessions on those sort of programs. Ehhm, perhaps having that sort of thing.

RE: If you attend the training sessions are you given some kind of certification?

P1: For Cammy, for example, the Extra lessons Programme. I personally worked through..uhmm, it is a course essentially with a series of activities and then uhmm, in the end you are given a certificate. Cammy qualified or that you are qualified to work with Cammy. So I think it depends more on the, the...
type of course, yes, yes and the technology itself, you know. And who is training also.

RE: What about the use of a follow up training? Don’t you want to bring it up as one of your suggestions for improvement of CPD of educators?

P1: I think perhaps if you looked at perhaps a six month to one year interval and then perhaps you came back and looked at follow up sessions or a refresher. As you say, just to touch base and see how people are using it and what problems are they encountering. Uhmm, I think that would be beneficial, yes, yes (nodding her head).

RE: Last but not least, are there any questions or comments you would like to add pertaining to the interview we have just conducted?

P1: Hahaha (giggling). I can’t think of any questions. I might just add from a comment perspective. It would be great to see in schools ICT being used more and more because it is such a big part of the world and it makes sense to have it in many schools and uhmm, within many departments. And I think also just to comment, is that at this school I feel that quite a few opportunities to be able to use this media have been given to us which has been very motivating and helpful obviously (giggling) to teachers.

RE: Thank very much for the interview. It has been quite enlightening for me and very insightful. You spoke very well too.

P1: (Giggling) You are welcome. Thank you so much too!
INTERVIEW 3 (Participant 3)  

DATE: 2 October 2015  

RE: A very good morning.  

P3: Good morning.  

RE: I am a Masters student at the University of Johannesburg and I am here to conduct research. Our interview is based on this title: ‘Educators’ experiences of continuous professional development on the use of Information and Communication Technology in Johannesburg secondary schools’  

Your school happens to be one of the schools I have earmarked to my conduct research.  

P3: That is good.  

RE: My first question is as follows:  

RE: How do you understand the concept of continuous professional development?  

P3: Uhhm. To me how I understand it is that we have a lots of courses offered by the Department of Education to help teachers develop themselves and to help teachers improve to study the curriculum, the best teaching strategies, and let say classroom management and something like that.  

RE: How do you understand the concept of Information and Communication Technology (ICT)?  

P2: In the classroom? I think we are very lucky to use the laptops and projectors in the classroom. So to me how I understand it, is that you using the internet, you using the laptop, you using the projector in the classroom to benefit the learning and children. I would say. I think so. Hahaha.  

RE: And what are the examples of ICT that you use in the classroom that you could give me?  

P3: Each teacher has a laptop that we get to use. We have projectors, so we can project the youtube video or the powerpoint presentation onto the board for the learners. And I think that is very nice because as they get to see and hear
and experience, I think it grabs their attention. I think as you show them a quick video or a colourful powerpoint, they benefit from it a bit more. Yahh.

**RE:** Does your school have Information and Communication Technology equipment? If yes, describe the ICT equipment available in your school.

**P3:** Some teachers, I don’t have one but some teachers have smartboards. Which is lovely. We have got speakers, we have access to the internet. I think all that falls under ICT, I think.

**RE:** Yes, it is part of the infrastructure, which is very good.

**P3:** We are very lucky because very few schools have what we have. So I am very happy with it. So I have got a whiteboard in my class and I just project the projector onto the whiteboard and I can show the kids a video or anything like that. So ehh, it definitely forms part of the infrastructure and we use it very often in our classrooms. I think especially, the younger staff that know how the laptop works. We use it in our classrooms and the kids really like it. It makes a difference.

**RE:** So are you implying that the older staff are not keen to use it?

**P3:** I think the older staff don’t always know how to use it well and maybe in a little certain ways. I am talking about the much older staff. They know that they teach from the textbook and use the whiteboard. I don’t know it is like that. But from what I would assume, some but not all of them but some of the older staff do not use their laptop as often, as much as they could in the classroom. Because they might not necessarily understand how to use it.

**RE:** I think you have already answered the fourth question which reads: Do you use Information and Communication Technology in your teaching? Give examples of how you use ICT in your teaching.

**P3:** Alright.

**RE:** I think you have already alluded to that and explained very well. Here is the next question.

**P3:** Alright.
RE: Why do you think Information and Communication Technology is important in teaching and learning?

P3: I think that it makes, it opens up a lot of doors for us. It makes the lesson more interactive, the learners get to see something different to them than just the teacher explaining to them from the textbook. Now the learners get to see a video clip or they get to see a colourful picture or a powerpoint presentation. I know for us when we are explaining, let us say, for example, the primary sector. I think they remember it a lot longer if I show them a picture of a farm than if I tell them no that is farming. And if I show them a picture of a factory and I say to them what sector is this? And they gonna immediately… A picture says a lot more. You don’t have to print, it is not expensive, it is just projecting it on the board. And it is easy. Sometimes the kids ask me things and immediately and I do not know the answer. I can go google it and I can say here is the answer. So I am very lucky with that. If they can say to me give an example of this and I don’t know, I can google it and show them an example. That is very good. I think.

RE: Does this improve their focusing in the classroom?

P3: I think it makes a difference to the fact they are now seeing something different. So it makes a difference. Yes, definitely definitely yes! (nodding head).

RE: What problems do you encounter when you use Information and Communication Technology in your teaching?

P3: The biggest problem that we have had most recently is with the load shedding. So if I have planned a lesson and I have made powerpoints and the power goes off, and then that kind of throws me off a bit. And then I have to give a lesson on the whiteboard because of the load shedding. Also that our internet connection is quite slow. So sometimes if I want to show them a video and I am trying to stream it, the internet connection is slow because there is so many people will be using it. Yah.

RE: I think let us go outside, there is a lot of noise here. (staff talking in the staffroom).
P3: Yes, let us go.

RE: Let us now continue with the interview.

P3: Ok.

RE: You were talking about the problems which you face.

P3: The problems, definitely load shedding. We have got a generator but I don’t think it is ideal to to… when I am in the middle of a lesson and the power goes off, I am a bit frustrated because I have planned to have a powerpoint and all of that. And then it kind of throws me off a bit. I suppose we should be able to adapt but it throws me off a bit. And also we this internet connection. With the amount of staff using the internet, if I quickly want to show the kids a video, I should have downloaded it the previous day and saved it to my computer. But I cannot quickly show them a video. With Youtube, there is a lot of videos, especially in Business Studies we have so many videos that we can show them. And uhmm, it downloads very slowly. So I think that is a bit of a problem to me as well. And with our problems, I might say the school does like with uhmm, understanding how to use uhmm, powerpoint or Excel with all the different formulae. The school does send us on a lot of courses but the school, the HOD for IT and all of them, provide how to work the best spreadsheets and all of that. So that is very beneficial. Yes, yes.

RE: How does your school create opportunities for continuous professional development of teachers in the use of Information and Communication Technology?

P3: What I know, like in our department, our HOD has one person do all the spreadsheets for everyone. And then that makes it a lot easier. And the formulars are already in it and you just have to put in the marks and then it calculates the mark and all of that which is very beneficial as well. And also I like the courses that they offer us.

RE: What role does the principal or your head of department play in supporting and guiding you as a teacher to attend continuous professional development programmes in the use of ICT?
P3: What they do is they give us an incentive to attend a programmes. Like you can get a certificate and all these certificates add to your IQMS mark. Which is very good because part of IQMS is continuous professional development. I know that if I attend all these classes I get a higher IQMS score. Which I think is very good.

RE: What does this help you with? With the appraisal?

P3: Yes, definitely definitely! I think it just adds to your value to the school. I think to your own value as a teacher. If you know how to use it, it makes your life so much easier. If you can use spreadsheets instead of you writing them out and calculate it with a calculator. You can just put in your marks in the Excel spreadsheet and it does everything for you. I think it makes our life so much easier because the amount of administration we have is just ridiculous. So if we can have everything done like that, our spreadsheets, our lesson planning. All of our lesson planning can be done electronically. I know, hhmm (clearing throat). Excuse me! I know we were thinking like...Often the Department comes to check our teaching files and the subject files, and it ends up being a file this thick (demonstrating it). What we suggested doing is, instead of having it printed out and wasting all the paper, what we want to do is when the government department comes instead of giving them the file we will give them a memory stick with the file. And we will say check everything is in there and it is done. And then you have not have wasted the paper printing everything in it. It makes it so much easier for us to copy the file into ehh electronic file because it is easier for us as we do everything electronically. We type out all of our planning because we all have access to laptops. So it makes it very easy for me if I am doing grade planning for Grade 10, the other Grade 10 teachers I can just give them on a memory stick or email them the planning. I don’t have to print it out and give it to them. And that makes it easy for all of us because it is there, it is on your computer.

RE: But what has the principal or HOD done to help you? Do they pay for the courses you attend?

P3: I think they would pay for the courses we attend outside. But the courses we attend at school are for free. So they do not charge us for that. External
ones? I have not been to an external one but I do not think that they pay. Actually we have Mr X do one for us and we did not pay, the school covered the costs for us definitely. Mr X did one now during the last block test, we had a course on Excel, Advanced Excel skills. The school did not pay they hosted the event, they gave us the venue and teachers did not have to pay, the school paid for the course. I don’t know how much, I don’t know how much it cost but we did not have to pay for it. So I think that is motivational because you do not want to go if you have to pay.

RE: Do you find the continuous professional development programmes in the use of ICT offered by your school effective?

P3: Yes definitely! Definitely because with the use of Excel we were not taught at university how to do an Excel spreadsheet. So we were not taught how to uhhm, best use a Word document or anything like that. We were not necessarily taught how to do that, we were taught the content. And with that because it makes the administration so much easier. Being able to know how to do that makes it very easy. So on these Excel courses they teach you, they show you how to calculate the accolades. Because we give the kids the accolades if their marks improve. And the nice thing is on the Excel it just does for you, you do not have to take a calculator and do every child. It is very beneficial I think. Yes. (clearing her throat). The programmes offered by the Department are ineffective and irrelevant to the teachers’ needs. They are too basic.

RE: What would you suggest in order to improve the continuous professional development of educators in the use of Information and Communication Technology in schools?

P3: I think that they could maybe provide more regular courses, especially for new teachers. I think when a new teacher comes in and she or he does not attend a course, I think they should make it compulsory for new teachers to attend a course. Not even after school, during school hours or during school assembly or during break time. Have the teachers attend the courses so that every single new teacher knows exactly how to use that. So that maybe if...if my HOD did not give me the spreadsheet, which she does, if she did not give me
the spreadsheet I could still figure it out on my own. Because like I said earlier on we were not taught at university how to do all of these. So I think what they could do is to make it compulsory for every new staff member to attend. And maybe for every staff member to attend at least once a year because technology changing. So how to work with the new technology because we are not taught every year how to work with the changing technology. So when it updates, we might not necessarily know how to use it. So they should make it compulsory. Which I don’t think they do. They don’t make it compulsory. And also not after school hours because that is when a lot of teachers don’t attend. But during an assembly or break that would give you nearly one and a half to two hours if you took it like that for the teachers to attend a course being offered. Let us say in the ICT classroom, everyone bring a laptop and we all sit and they teach us how to use it. I think that would be very beneficial.

**RE:** Why can’t you do it after school? What is the problem?

**P3:** No we could do it after school but I think a lot of teachers don’t want to. So if it is not compulsory, their personal lives comes in and I suppose there is no uhmm…you not paid to stay after school. And a lot of teachers do not see that it is going to benefit themselves. I do not have children, but they want to go to their children. So they do not want to stay any longer than they need to. So I think if you are not being paid to stay an extra two or three hours after school and you do not understand how it benefits you, which I think it really benefit you in the long run. I think a lot of teachers do not want to stay after school, if you do not have to after school.

**RE:** When they offer the training on ICT, don’t they do some kind of needs analysis first?

**P3:** Yes. Absolutely! What happens is we get told what training the Department is offering but sometimes I do not think I need it. So some of the training was offering on, uhhmm, I think it was Curriculum Development or something. In my mind I did not know what they offered. I am sure it would be beneficial but in my mind I thought no I recently stopped studying and I have got that. And I did not go. Where I think if they had asked me I could have said classroom
management is a problem, how to use technology to benefit your classroom management. Because what we have got now is on our tablets, the school does not give us tablets. Every teacher who has his or her own tablet can use it, where it helps you to put in when the kid has not done her homework and it automatically sends an email to their parents. That is lovely! And I think training in that would be very beneficial. My HOD took time and she trained me in that. And maybe the Department could to find out that we need more help with classroom management and using technology to help us because it helps. When email the kids parents, tomorrow he does his homework. So, I think definitely, definitely needs analysis would be amazing.

RE: Last but not least, are there any questions or comments you would like to add pertaining to the interview we have just conducted?

P3: No, no. I know it is for your Masters Degree. I am also busy with my Masters as well.

RE: That is good. Thank you so much for your time!

P3: You are welcome. But I speak so quickly. I hope you were ok with that?

RE: It was fine. I understood everything you said. Thank you!