TITLE: CHALLENGES FACED BY ENGLISH TEACHERS IN INTEGRATING INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN THE TEACHING OF READING AND WRITING IN TWO RURAL PRIMARY SCHOOLS IN THE OMUSATI REGION AND FOUR URBAN PRIMARY SCHOOLS IN THE KHOMAS REGION OF NAMIBIA

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF EDUCATION (LITERACY AND LEARNING) OF THE UNIVERSITY OF NAMIBIA

BY

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April 2012

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Abstract

The purpose of this study was to explore challenges faced by teachers in integrating Information and Communication Technology in the teaching of reading and writing in two rural and four urban primary schools in Namibia. Twenty six English teachers teaching from grades 1 to grade 7 participated in the study. The main aim of the study was to investigate challenges faced by teachers when integrating ICT into their lessons. Lessons were observed and notes were taken. In addition, semi-structured interviews with teachers were conducted. For data analysis, all field notes were first reviewed, and memos and comments on these notes were written. Secondly, responses were grouped into themes, and then referencing units of texts were sorted according to coding and labelling. Findings of the study revealed that teachers in both rural and urban Namibian schools in the sample faced common challenges. Some of the challenges were attributed to lack of infrastructure, lack of appropriate skills and competencies, lack of continuous support both at school level and at national level, and lack of training. Even though most schools were beneficiaries of the deployment of ICTs, teachers were still unable to utilise the resources made available to them. However, teachers expressed their appreciation for the initiation of ICT integration as it motivated them and their learners and made them part of the global village. The study concluded that mere deployment of ICT facilities in Namibian schools did not guarantee the effective use of these facilities in teaching and learning as long as the challenges were not fully addressed. The study recommends that policy makers should pay more attention to national education standards and carry out adequate and appropriate research to ensure that teachers are aware of what is expected from them.
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ACKNOWLEDGEMENTS

I am sincerely grateful and indebted to my supervisors Prof. R. F. Zimba and Mr. J. Hengari for making it possible for me to complete this study through their efforts and positive guidance. My gratitude also extends to Dr. L. Mostert for motivating me throughout and for co-ordinating the NOMA scholarship that paid fully for my studies. I also do not want to forget Dr. S. Nyathi for his motivation and positive contributions towards the compilation of this study. Moreover, I wish to thank Mr. M. M. Katulo and Mr. S. Simataa for assisting me from the time I was writing the research proposal and throughout the write up of the final report. I do not want to forget Prof. L. A. Kulbrandstad who also assisted me with my research proposal and Ms C. Murray for a job well done in editing my work.

I am also thankful to the principals of all the schools where research took place; they welcomed me into their schools wholeheartedly and treated me with respect. I would also like to thank all the teachers from the six primary schools for granting me the opportunity to sit in their classes for observation and for sacrificing their time for interviews. Finally, with great pleasure, I would like to thank my entire family for always being caring and supportive.
DEDICATION

This thesis is dedicated to my dear son Joshua Romeo Paulus.
DECLARATION

I, Esther Nuuyoma, declare hereby that this study is a true reflection of my own research, and that this work, or part thereof has not been submitted for a degree in any other institution of higher education.

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………………………….. April 2012

Esther Nuuyoma
<table>
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<tr>
<th>Abbreviation</th>
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<tbody>
<tr>
<td>CA</td>
<td>Communication Apprehension</td>
</tr>
<tr>
<td>ETSIP</td>
<td>Education and Training Sector Improvement Programme</td>
</tr>
<tr>
<td>DVD</td>
<td>Digital Versatile Disc</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
</tr>
<tr>
<td>ICDL</td>
<td>International Computer Drivers License</td>
</tr>
<tr>
<td>MoE</td>
<td>Ministry of Education</td>
</tr>
<tr>
<td>NIED</td>
<td>National Institute for Development</td>
</tr>
<tr>
<td>UNESCO</td>
<td>United Nations Education Scientific and Cultural Organisation</td>
</tr>
<tr>
<td>OHP</td>
<td>Overhead Projector</td>
</tr>
<tr>
<td>WWW</td>
<td>World Wide Web</td>
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CHAPTER 1

INTRODUCTION

1.1 Background to the Study

The Namibian government has acknowledged the significant role which Information and Communication Technology can play as the country moves towards a knowledge-based society as stipulated in the Vision 2030 document. To contribute towards the realisation of Vision 2030, the Ministry of Education (MOE) developed a fifteen year Education and Training Sector Improvement Programme (ETSIP). The ICT Policy for Education was published in 2005 in order to contribute to effective learning. The ICT Policy for Education (2005, p.4) outlines six overall goals which are to:

1. Produce ICT literate citizens;
2. Produce people capable of working and participating in the new economies and societies arising from ICT and related developments;
3. Leverage ICT to assist and facilitate learning for the benefit of all learners and teachers across the curriculum;
4. Improve efficiency and educational administration and management at every level from the classroom, school library, through the school and on to the sector as a whole;
5. Broaden access to quality educational services for learners at all levels of the education system; and to
6. Set specific criteria and targets to help classify and categorise the different development levels of using ICT in education.

This study focused primarily on goal number three which is to leverage ICT to assist and facilitate learning for the benefit of all learners and teachers across the curriculum. The policy also emphasises that all primary schools should be at least level 2 of the overall goals of ICT. In level 2, it is clearly stated that:

All teaching and administrative staff should have reasonable access to a computer (at least one (1) computer for every five (5) staff members and one (1) to ten (10) for learners/students) and be able to use the Internet and e-mail, as well as a word processor. The site (school) should be connected to the Internet. Learning materials are to be downloaded and occasionally created by teaching staff. Students should spend about one hour every two weeks on the computer. At least two of the site staff should have an ICT qualification. The site will have a classroom equipped with a computer and projector system and/or ability to display audio-visual materials for students (ICT Policy, 2005, p.6-7).

Closely following the ICT policy for Education was the development of the MoE’s Implementation Plan which was published in 2006. The Implementation Plan proposes that educational institutions should receive the ICT equipment in three phases, while the actual process of carrying out the implementation of ICTs in educational institutions was to be carried out in two phases. Phase one, was to phase in from 2006 to 2009. During this phase, a total of 240 secondary schools should have
been provided with ICT facilities, each school having received one server, 20 thin clients, and 5 wireless network access points. In addition, stakeholders such as the Global e-School Initiative (GeSCI), the Namibia Education Training Academy (NETA) and Computer Education Community Service (CECS) have been supporting the Ministry’s initiative by donating ICT resources and also providing teacher training to schools, mostly those located in the rural areas. With the roll out of computers, the MoE signed an agreement with X-Net Namibia to provide schools with affordable internet.

Though much emphasis is placed on education to build a knowledge-based society as envisaged in the Vision 2030 document, differences still exist between urban and rural education. Factors such as availability of resources, parental involvement, socioeconomic status (SES), and community influence may contribute to the quality of education in both rural and urban schools. Scholars such as Matengu (2006), Cleg (2004), and Hamunyela (2008), have indicated that rural schools do not have the necessary infrastructure and that the long distance from Windhoek to rural schools, affects communication and ICT infrastructure usage. For example, it was suggested that a major factor, hampering the connectivity of schools to the Internet has to do with the fact that it is expensive for Telecom to lay the lines as most of the schools fall outside the Telecom network.

Lessons from the international arena suggest that the deployment of ICTs into schools does not necessarily translate into their successful integration. Abas and Khalid (2007) argue that the purchase and installation of technology is no guarantee that teachers will use it to facilitate learning. Furthermore, available literature suggests
that limited ICT infrastructure affects the development of ICT skills. It is argued that in Thailand, for example, limited ICT infrastructures prevent the development of many ICT skills while more focus is placed on the deployment of ICT infrastructures (Law, Pelgrum, & Plomp, 2008). However, the MoE (2007) suggests that lack of infrastructure is not the only challenge that is faced by many schools. Among the challenges noted is the lack of curriculum related to ICT in subjects such as Mathematics, Science and English at secondary level, lack of training for teachers in using ICT, which is crucial as they are the key activators in this process, and lack of access to the necessary hardware, software, technical support and other infrastructure. Given this background, this study explored challenges faced by teachers in integrating Information Communication and Technology (ICT) into the teaching of reading and writing in two rural primary schools in the Omusati region and four urban primary schools in the Khomas region.

1.2 Statement of the Problem

As teachers change their teaching methods due to technological advancements such as computer usage, reading and writing can be improved along with the changes to suit learners’ educational needs. Even though ICT is considered to be one tool that enhances teaching and learning, it is accompanied by challenges which teachers have to deal with as they integrate it into their subjects. The purpose of this study was to explore the challenges faced by teachers in integrating ICT into the teaching of reading and writing in some rural and urban primary schools in Namibia. The study aimed at investigating what skills and competencies teachers had in the field of ICT and how they integrated ICT into their English lessons to enhance reading and
writing. It further aimed at documenting challenges which teachers encountered during the integration process, ICT tools which they used in their lessons, experiences they had in the use of ICT and the gap that existed between rural and urban school in terms of ICT infrastructures, training and socioeconomic factors.

1.3 Research Questions

The following research questions were formulated to help the researcher find answers regarding the experiences of teachers in integrating ICT to improve reading and writing:

1. What ICT skills do English teachers at primary schools have?
2. What teaching strategies do teachers use when integrating ICT into English lessons?
3. What type of ICT tools are mostly used in the teaching of reading and writing?
4. What challenges do teachers experience into the process of ICT integration?

1.4 Significance of the Study

The study was important for many reasons. Firstly, the findings would inform policy makers on challenges faced by teachers when integrating ICT across the curricula; it would also point out issues to be considered during policy review for quality education in both rural and urban schools. Secondly, the study also documented ICT areas related to the teaching of reading and writing that needed improvement. In
addition the study addressed the gap that exists between rural and urban schools with regard to ICT facilities and investigated how this can be rectified by incorporating ICT in teaching and learning process to provide standardized quality education in both rural and urban schools.

1.5 Limitations of the Study

Certain limitations of this study need to be acknowledged. Two rural and four urban primary schools were purposefully selected for the study. Since this number was too small to represent the population of all primary schools in Namibia, findings cannot be generalised to other primary schools. The findings do, however, present a better overall understanding of general challenges in ICT integration across the curriculum. Such knowledge can be used to inform similar practices in different contexts.

A further limitation that could be considered to have influenced the quality of research results is that most of the respondents, for undisclosed reasons, refused to be tape recorded. To counter this limitation, the researcher recorded as much data as possible by writing it in a notebook. In addition, some teachers were not comfortable with the idea of the researcher sitting in their classes for observation which they felt was pointless since no ICT integration was taking place. Some teachers withdrew from taking part in the research, claiming that they could make little contribution as they had no background knowledge in the research topic at hand.
1.6 Delimitations of the Study

Due to lack of resources (e.g. time and funds), the research was focused on English teachers teaching at six selected primary schools in the Omusati and Khomas regions.

1.7 Definition of Terms

The following terms are used in the study:

<table>
<thead>
<tr>
<th>Concept</th>
<th>Meaning</th>
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<tr>
<td>Computer lab(ortory)</td>
<td>A central area or room where computing activities are carried out for teaching and learning purposes. It can also be accessible to students after lessons.</td>
</tr>
<tr>
<td>Information and Communication Technology</td>
<td>The range of tools and techniques relating to computer based hardware and software to communications including both direct and broadcast information sources such as CDROM and the internet and to associated technologies such as robots, video-conferencing and digital TV (QCA 1999a:184).</td>
</tr>
<tr>
<td>Computer technician</td>
<td>A person responsible for repairing, installing and maintaining ICT equipment.</td>
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<tr>
<td>Communication apprehension</td>
<td>A fear or anxiety about actual or anticipated communication with other individuals, a behavioural trait related to the psychological constructs of shyness and reticence (McCroskey, 1984).</td>
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<tr>
<td>Constructivism</td>
<td>An education philosophy based on the assumption that learners construct their own knowledge from ideas, objects, and events which they experience and encounter in relevant environments (Perkins, 1992; von Glasersfed, 1992)</td>
</tr>
<tr>
<td>Hardware</td>
<td>A common term that refers to the physical elements of a technology, for example, a computer keyboard</td>
</tr>
<tr>
<td>ICT policy</td>
<td>Procedures (rules) set to guide users (teachers) on what is expected of them when integrating electronic equipment across the curricula for teaching and learning purposes.</td>
</tr>
<tr>
<td>ICT integration</td>
<td>The combination of technology and traditional teaching procedures to</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
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<tr>
<td>Internet</td>
<td>The network of computers using common protocols such as Internet computer protocol (ICP), Internet protocol (IP).</td>
</tr>
<tr>
<td>Online</td>
<td>When computers are connected to a network or the Internet and users are able to receive and send information.</td>
</tr>
<tr>
<td>Physical access</td>
<td>The availability of ICTs (computers, internet access, printers, scanners, televisions, video cassette recorders and videos, etc.) to learners and teachers within a particular school.</td>
</tr>
<tr>
<td>Software</td>
<td>A common term that is used to denote computer programmes, for example, a Word Processing programme.</td>
</tr>
<tr>
<td>Technology</td>
<td>New machines, equipment, and ways of doing things that are based on modern knowledge about science and computers (Longman Dictionary of Contemporary English, New Edition).</td>
</tr>
<tr>
<td>Web 2.0</td>
<td>The term used to describe a second generation of the World Wide Web (WWW) that is focused on the ability of people to collaborate and share information on-line.</td>
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CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter frames and informs this study on ICT integration in education particularly with regard to improving learners’ reading and writing. The researcher begins by presenting the theoretical framework on which this study is based, followed by discussion of the role of technology in education and the role of teachers in the success of technology-based learning. The researcher then describes challenges faced by teachers in integrating ICT across the curriculum, and more specifically, into English lessons to improve reading and writing and concludes with a brief discussion of previous ICT research conducted in the same area.

2.2 Theoretical Framework

This study was informed by the constructivist learning theory which has its origins in the field of psychology and was made popular by Dewey (1966), Bruner (1996), Piaget (1970) and Vygosky (1978). There is concrete evidence from literature that ICT integration helps learners to construct their own knowledge. Constructivism, according to Burning et al. (2004, as cited in Schunk, 2009), is a psychological and philosophical perspective contending that individuals form or construct much of what they learn and understand. Schunk (2009) emphasises that one of the constructivism
assumptions is that teachers should not teach in the traditional sense of delivering instruction to a group of students. Rather, they should structure situations such that learners become actively involved with content through manipulation of materials and social interaction. Hendry (1996, as cited in McInerney & McInerney, 2002) lists the following seven constructivist principles and their classroom applications:

**Principle 1: Knowledge exists only in the minds of people.** In the classroom, knowledge exists in the minds of students and the teacher, not on the blackboard, in books, on floppy disks, in teacher or student talk or in the activities that teachers and students devise.

**Principle 2: The meanings or interpretations that people give to things depend on their knowledge.** Teachers and students give meaning to instructional materials according to their existing knowledge and may, therefore, generate different meanings for the same materials and experiences.

**Principle 3: Knowledge is constructed from within the person in interrelation with the world.** Teachers or teaching methods per se do not change students’ ideas; rather, change or construction occurs from within, through students’ interaction with the world of which teachers are a part. Students do not simply absorb transmitted knowledge.

**Principle 4: Knowledge can never be certain.** There are no absolutely right or wrong answers or ideas, only ones that are less useful and sustainable. Thus, all knowledge can be reconstructed and should be continually open to re-examination.
Principle 5: Common knowledge derives from a common brain and body which are part of the same universe. Children share the same brain processes and body characteristics and inhabit the same world, and can construct common knowledge through their discussion of solutions to the same problems.

Principle 6: Knowledge is constructed through perception and action. In particular, learning is facilitated by active involvement in problem solving and conflict resolution.

Principle 7: Construction of knowledge requires energy and time. Individuals are most motivated to construct knowledge in non-threatening, supportive and challenging learning environments.

Research has shown evidence of how ICT integration helps learners to construct their own knowledge. Lour dusamy, Koon & Khine (2001) emphasises that development of ICT has provided new opportunities for delivering instruction and at the same time, the constructivism movement in instructional design emphasises the importance of providing meaningful, authentic activities that can help the learner to construct understanding and develop skills relevant to solving problems rather than feeding them with more and more information. In addition, Olsen (2000, as cited in Lourdusamy et al., 2001) is of the opinion that through the use of technology, teachers can provide opportunities for students to learn how to think critically and conduct discussions with their peers, supported by ICT. According to Roblyer, Edwards & Havriluk (1997), ICT addresses the following needs as identified by constructivism:
1. Making skills more relevant to students’ backgrounds and experiences by anchoring learning tasks in meaningful, authentic (e.g. real life), highly visual situations;

2. Addressing motivation problems through interactive activities in which students must play active rather than passive roles;

3. Teaching students how to work together to solve problems through group-based, cooperative learning activities;

4. Emphasising engaging, motivational activities that require higher level skills and pre-requisite lower level skills at the same time.

The integration of ICT in the classroom supports the principles of constructivism. However, constructivism has also been strongly criticised regarding its effectiveness. Terhart (2003) argues that although constructivism is successful in practical teaching in some educational areas, it does not introduce a shift from the traditional dualist framework of thinking. He strongly opposes the notion that constructivism does not present a new educational paradigm that is different from traditional educational theories, as a paradigm shift requires a deeper level of correction. Fox (2001) observes that constructivism, in its emphasis on learners’ active participation, is often seen as easily dismissing the roles of passive perception, memorisation, and all the mechanical learning methods in traditional educational instruction. In addition, other researchers such as Biggs (1998) and Jin & Cortazzi (1998) note that constructivist teaching approaches, including one-to-one or small group classroom interaction, do not always guarantee teaching effectiveness.
2.3 The Role of Technology in Education

Technology is often equated with equipment (e.g. computers, CDs, DVDs, VRCs) but the meaning is much broader (Schunk, 2009). Jonassen et al. (1999, as cited in Schunk, 2009) describes technology as the designs and environments that engage learners. Technology in the context of this study refers to machines, equipment, and ways of doing things that are based on modern knowledge about science and the computer.

Jonassen et al. (1999, as cited in Schunk, 2009) presents the following functions of technology that are relevant to learning:

- Tool to support knowledge construction.
- Informative vehicle for exploring knowledge to support learning by constructing.
- Context to support learning by doing.
- Social medium to support learning by conversing.
- Intellectual partner to support learning by reflecting.

Functions outlined by Jonassen et al. are similar to those stated in the MoE’s ICT policy for education (2005) which are:

- to enable children:
  1. to develop ICT capability in finding, selecting and using information;
  2. to use ICT for effective and appropriate communication;
  3. to monitor and control events both real and imaginary;
4. to apply hardware and software to creative and appropriate uses of information;
5. to apply their ICT skills and knowledge to their learning in other areas;
6. to use their ICT skills to develop their language and communication skills;
7. to explore their attitudes towards ICT and its value to them and society in general, for example, to learn about issues of security, confidentiality and accuracy.

The same ICT policy states that ICT is a major contributor to the teaching of English. Through the development of keyboard skills and the use of computers, children learn how to edit and revise texts. They have the opportunity to develop their writing skills by communicating with people over the Internet, and they are able to join in discussions with other children throughout the world through the medium of video conferencing. To add to that, Newhouse (2002) highlights some research findings showing the positive impact of ICT on learning through environments which include:

1. investigating reality and building knowledge;
2. promoting active learning and authentic assessment;
3. engaging students through motivation and challenge;
4. providing tools to increase student productivity;
5. providing scaffolding to support higher level thinking;
6. increasing learner independence;
7. increasing collaboration and cooperation;
8. tailoring learning to the learner; and
9. overcoming physical disabilities.
According to Chera & Wood (2003), multimedia presentation in the form of talking books has been shown to improve beginning readers’ phonological awareness but without improving their word recognition. Primary teachers are faced with a quandary when planning an ICT-based activity, since they must ensure that pupils have the support they need to develop their ICT capability while providing them with contexts to learning in other subjects as well (Chera & Wood, 2003). Chera & Wood furthermore argue that this is a challenge that requires clear thinking and that teachers should consider the following questions:

1. What is the educational purpose of the activity - to develop ICT capability, to support learning in another area of the curriculum, or both?
2. Will the children need to be monitored to identify opportune moments for teacher intervention to enhance their skills?
3. Does the activity provide children with experience in using ICT as a tool?
4. Are there opportunities to assess children’s ICT competence?
5. Will the children work co-operatively or collaboratively? How will this be introduced and supported?

In addition, Drowns (1993) concludes that the use of a word processor in writing instruction results in learners producing both longer documents and better quality writing. Similarly, Timothy, et al. (1996) mention that it is important for teachers to integrate word processing into a process approach to writing and to take into account the particular classroom environment where these word processors are used. Learners may also learn how to improve the presentation of their work through the use of computers by means of desk-top publishing software. Although all the issues
discussed above are relevant to different educational contexts, they are particularly relevant to the teaching of reading and writing, since the application of integrating word processing in a Namibian context could result, within a short period of time, in a better quality of writing and effective expressions of good ideas on the part of the learners.

2.3.1 Use of Computers in Schools

In most cases, ICT in schools is generally associated with computers. The introduction of computer use in Namibian schools, where learner-centred instruction is the order of the day, involved changes which required teachers to divert from traditional teaching methodologies and cater for computer integration across the curriculum. According to Wild (1993), computer use in schools also requires changes to educational ideology. It has become clear that faced with the scale and complexity of such changes, implementers needed to be helped in order for them to respond positively to the profound changes required of them, consider such changes critically, accept them where appropriate, and manage the transition process effectively.

The challenge is more prominent in poor schools as these schools experience a shortage of computers for the use of both learners and teachers. However, students coming from more wealthy socio-economic families may experience the benefits as they are exposed to computers at home, and this can be reinforced at school. Forcier (1996, as cited in Piller, 1992) argues that computer-based education in poor schools is in serious trouble, and that some affluent schools have computer-based learning programmes which are uninspiring, however, students from these schools usually
come from supportive, well-educated families that supplement school-based training with home computers. What Forcier (1996) asserts here could be worse in the Namibian context since the country does not have a strong computer-based education system. This is simply because the Namibian ICT policy was only implemented in 2005, and the application of that system is thus still premature. In Namibia the proportion of learners with access to computers at home is very limited. Although there is no conclusive evidence regarding the private ownership of computers at learners’ homes, it would appear from evidence in the classroom environment, that there are very few learners who come from rich socio-economic families that might play a supporting role in the application of ICT integration at primary schools.

One of the benefits of ICT, as argued by Cohen and Riel (1989), is that the capability of communicating via computer with other students has provided unexpectedly powerful support for language arts and English activities. Students frequently seem to be more motivated to write well (i.e. communicate more clearly and use better spelling and grammar) when they write for other audiences. They further argued that though writing often takes the form of letters, several teachers have designed successful telecommunications projects around creative writing themes such as developing and comparing reports, poems and stories. Selfe & Hilligoss (1994), comment that anyone who has used a computer for writing knows that language on the screen seems different from language on a page. Selfe and Hilligoss (1994) further maintain that using a computer to write seems more flexible, more fluid, more akin to the flickering of light than to the fixity of print and the effect stems partly from the ease of electronic alterations, the ability to make words dilate, disappear, or dance across the screen.
Han (2008) argues that one big difference between computers and teachers is that computers will never get tired, and will repeat the same thing again and again without complaining. Whatever a computer is programmed to do, it can do over and over as often as necessary, which is an advantage, particularly for slower students. Furthermore, computers can retain teaching resources for a longer time, which is almost impossible in traditional classes. In contrast to traditional second language study, student can study more independently, leaving the teacher more time to concentrate on those parts of second language teaching that are difficult to do or cannot be done by computer, such as pronunciation, spoken dialogue, training for essay writing and presentation.

Another advantage of ICT is that whereas in most cases, printed books limit teachers to using the same information repeatedly over the years, computers and ICT have vast resources of information which can be accessed at any time and which is upgraded from time to time. Karchmer (2001) argues that when readers engage in print-based text, they are confined to what is written on the paper in front of them. Reinking et al. (1997, as cited in Karchmer, 2001) suggests that electronic texts eliminate such boundaries and provide readers and writers with the opportunity to easily connect to relevant material.

The impact of computers upon teachers has, with some notable expectations, been less marked, as many teachers still feel very uncertain about the new technology, and this uncertainty has been exacerbated by the feeling that their pupils often know more about it than they do (Warry & Medwell, 1991). With the integration of ICT, teachers
are expected to perform certain tasks on the computer such as tying worksheets, tests, activities and summaries, and searching for information on the WWW.

The Internet is one tool that can be used by English teachers to access information which they can use in their lessons to improve reading and writing among the learners. Several researchers document the benefits of Internet use for teachers and learners. A research study conducted by Karchmer (2001) on how the Internet influences literacy and literacy instruction indicated that elementary level teachers felt they needed to spend more time choosing reading material from the Internet than they had done when relying on graded texts. Unlike those in a textbook, the electronic texts available on the Internet are often written for a specific grade level, and range from simple to difficult. In their research, Hill & Slater (1998) mention that the Internet enables learners to engage in a communicative dialogue. This can be done through communicating across the globe with other learners. As a result, second language learners may pick up new vocabulary words which contribute towards language proficiency. In other words, with the integration of ICT, learners with the problem of Communication Apprehension can build their confidence in reading and pronouncing specific words, thus freeing them from apprehension as discussed in the next section.
2.3.2 The use of ICT to Address Communication Apprehension in Learners

Quite a number of second language learners particularly in rural schools have difficulty expressing themselves in English. As a result, they choose to remain silent during lessons to avoid embarrassments. Scott & Rockwell (1997) argue that individuals suffering from communication apprehension usually adopt avoidance and withdrawal behaviour and are therefore less likely to engage in oral communication.

Taylor (1987) argues that in the classroom, the teacher may regard quiet students as ‘perfect’ in that they do not present discipline problems. The same author also emphasises, however, that often the lack of response or participation on the part of students suffering from CA has a negative, spiralling effect as they are perceived as less capable, and are thus called on less frequently in class discussion. In Asia, for example, research shows that English Second Language learners tend to be silent in class as they are afraid of poor performance in front of others (Young, 2003). However, the introduction of Web 2.0, which allows users to interact with content posted on the Internet, has enabled students around the world to interact with one another cheaply, quickly and reliably (Windeatt, Hardisty & Eastment, 2002). This is also supported by studies conducted by several researchers such as Beauvois (1992, 1995, and Kelm, 1992, as cited in Young, 2003) who suggest that students who used to be shy in face-to-face discussion and were, at the same time, considered to be low achievers in language learning were observed to be more active participants in computer-assisted classroom discussions.
Researches have proven that students with limited English proficiency or English Language Learners (ELL) can benefit from technology in multiple ways. Burns (1996, as cited in Ivers, 2003) explains that multimedia software and production tools provide English Language Learners (ELL) with a richer linguistic environment, one that accommodates their needs by providing animations, video, and graphics to demonstrate difficult concepts, as well as clear audio to model correct pronunciation and to repeat sounds and words. Many computers nowadays are equipped with narrators and there are also dictionaries with software which can be installed in any modern computer, so teachers and learners can access these voice pronunciations from their computers. In addition, researchers such as Anderson-Inman & Horney (1993, as cited in Karchmer, 2001) found that at-risk readers who took advantage of the electronic resources available on electronic texts, such as digitized pronunciations and digital pictures, scored higher on comprehension measures than did their peers who did not use electronic textual aids. Although the above thread of arguments suggests that ICT can be used to address CA in classrooms, teachers remain key players in helping learners to use ICT to address CA.

2.4 The Role of Teachers in the Success of Technology-Based Learning

The role of teachers is to ensure that the use of ICT is integrated effectively in their English lessons to improve reading and writing. However, for the teachers to do this successfully, they need the necessary knowledge. They should know the right equipment to be used for a specific task, as well as where and how to access information, etc. Watson, an Australian researcher (1999), argues that integrating the
new technologies into educational settings requires change, and different teachers will handle this change differently. According to him, considering different teachers’ change of attitude is important because teacher’s beliefs influence what they do in the classroom. Becta (2004) claims that one key area of teachers’ attitudes towards the use of technologies is the understanding of how these technologies will benefit their teaching and their students’ learning.

In addition, Mellon (1999) emphasises that for effective technology-based learning to take place, teachers must select materials that help to meet carefully defined instructional objectives and integrate them into learning experiences that motivate and excite learners. However, Hennessy, Harrison & Wamakote (2010) argue that many teachers are intimidated by technology, and are very comfortable with their established teaching styles. They further argue that initially, many feel threatened by the perceived loss of control in the classroom as students, who are usually more adept at using technology, can quickly access information and challenge the teacher’s role as a primary source of knowledge. Olakulehin (2007, as cited in Hennessy, et al., 2010) emphasises, however, that teachers who engage in appropriate professional development learn how to manage their classrooms more effectively and how to use the technology to create a more stimulating learning environment. In the Namibian education situation, however, many teachers at primary schools do not have prior exposure to technology, i.e. using computers and other technological devices, which could be a threat to teachers who are not adept in technology use when they are giving reading and writing lessons to their learners.
Mellon, (1999, p. 34) warns educators that “technology, in its current and emerging manifestation, is here to stay. And as it becomes more familiar and easier to use, even teachers at the Luddite end of the technology spectrum will more than likely accept it as just another approach to teaching”. In addition, according to UNESCO (2005), knowledge learned by learners should not be coming from the teacher, but rather, learners should create or construct their own knowledge. However, even though teachers make every effort to play their role as primary sources in the implementation of ICT integration, they are confronted with numerous challenges.

2.5 Challenges Faced by Teachers in Integrating ICT Across the Curriculum

The success of ICT integration is hindered by many factors. The main problem faced by many teachers is lack of training. Mellon (1999) points out that forcing technology down the throats of teachers without adequate training or support, and without allowing a reasonable time frame, is unlikely to improve students’ performance in every classroom.

Hope (1998, as cited in Lipinge, 2010) identifies five barriers to teachers’ use of computers and related technologies in teaching: (1) school leaders neglect to identify the problem(s) to be addressed when introducing new technology in schools, or problems that will emerge when introducing new technology in the school; (2) school management fails to create a vision of how technology transforms teaching; (3) teachers have a vested interest in other pedagogies to accomplish teaching and learning objectives; (4) teacher’s lack access to the technology which they are expected to integrate into practice; and (5) change agents fail to articulate the
advantages technology has over what teachers currently do to accomplish their work (p. 137-138). Hennessy, et al. (2010) argue that teachers need support exemplars of new practice, leadership from their school managers and adequate time for their own professional development and the trying out of new approaches. In other words, school principals should support teachers and give them opportunities to learn ICT, give them access to where ICT resources are kept in the school, and allow them to participate in ICT programmes and attend ICT workshops on a regular basis. They should make teacher training the number one priority to enhance their epistemological knowledge. If teachers do not have access to ICT and school principals do not support them in the use of ICT, e.g. by ensuring that when computers are out of order, technicians should at all times be available so that resources can be utilised successfully, then integration will not be possible.

Although there is limited or no training for the teachers in the integration of ICT in English, the Namibian government has made provision for teachers to be trained in how to utilise computers and access the Internet to obtain relevant information that can be used across the curriculum. Teachers are offered a course which is government-funded and allows them to obtain an International Computer Drivers Licence (ICDL). Through the said initiatives, teachers are expected to meet their needs regarding access to ICT, training in ICT skills and on-going support. Williams, Coles, Richardson, Wilson, & Tuson (2002) also reveal in their study that similar initiatives in the United Kingdom are in place to improve computer access and provide training to teachers. However, there has been no attempt yet to address the issue of on-going support on a more cohesive basis, and it was also noted in the same study that it will not be enough to meet any of these needs, i.e. access, training and
support in isolation. Therefore, there is a need for constant support for teachers to help them grow professionally in the ICT field.

Researchers such as Mehlinger & Powers (2002), & Pelgrum, (2001), (as cited in Akbaba, 2004) point out that there may be obstacles which prevent teachers from using technology in the classroom such as insufficient infrastructure and weak technical support. They emphasise that lack of training for teachers is one of the hindrances in integrating ICT with minimal problems.

Passey & Samways (1997) contend that ICT poses an enormous, possibly unique, challenge as a resource for the teacher because its use demands considerable shifts on all fronts. Computer use in schools also requires a change in educational ideology (Wild, 1993). Faced with the scale and complexity of such changes, it becomes clear that teachers must be assured of assistance so that they can respond positively to the profound changes required from them, to consider such changes critically, to accept them where appropriate and to manage the transition process effectively.

Learning how to use ICT in the classroom involves more than training in hardware and software use. It requires pedagogic understanding of what computer-assisted learning applications are trying to do and of what the hardware and software is capable of doing (Robinson, as cited in Passey & Samways, 1997).

Integration does not involve physical hardware; knowledge access should be the most important aspect that teachers need to consider. Merril, et al., (1996) argue that the amount and kind of hardware and software available for integration at a given site is
another realistic aspect of integration. They further note that as a result of limited budgets, many administrators have chosen to cluster their computer resources in laboratory settings and to hire computer specialists to oversee computer use in their schools. Classes are scheduled into the laboratory, frequently without the classroom teacher. This practice often limits the computer curriculum to that of computer literacy development only. If classroom teachers remain computer illiterate, integration is impossible. Teachers must first be computer literate and must then be introduced to specific integrative strategies that enhance what they are already doing in their English lessons.

Consistent with the findings in the literature, the current situation in Namibia is basically dominated by a lack of leadership support, lack of ICT resources and inaccessibility to ICT resources. The continuation of these problems may make the current situation regarding the teaching of reading and writing worse if not addressed because nowadays the application of ICT in the education system is growing rapidly, is the use of ICT resources such as laptops, cellular phones and televisions just to mention a few, which are widely available for the private uses of learners. This could become a problem to teachers as they could be challenged by learners when they integrate technology in their reading and writing lessons. When teachers start to encounter challenges, as revealed by the literature, successful implementation of ICT integration in English lessons to improve reading and writing is questionable and doubtful. As they face these types of obstacles, they choose rather to disregard the use of ICT in their lessons and sustain what they are familiar with.

2.6 Conclusion
This chapter presented the theoretical framework in which the study is located. It also highlighted the role which technology plays in education. The use of ICT to address learners with Communication Apprehension was also briefly discussed. This was followed by a discussion of the role of teachers in the success of technology-based learning. The researcher concluded the literature review with an outline of challenges faced by teachers in the integration of ICT across the curricula, and more specifically, in the teaching of reading and writing.

The next chapter is about the methodology used to collect data for this study. The researcher begins by presenting the research design followed by a description of the sample and the research instruments. This is followed by a discussion of data collection procedures, data analysis, the validity of the study, and ethical considerations.
CHAPTER 3

METHODOLOGY

3.1 Introduction

This chapter presents the research design of this study, as well as a description of the sample and the research instruments utilised for collecting data. This is followed by an explanation of the data collection procedures, data analysis, the validity of the study and ethical considerations.

3.2 Research Design

The aim of this research was to explore challenges faced by teachers in integrating ICT into the teaching of reading and writing in primary schools. The researcher conducted a qualitative research study. According to Patton (1990, as cited in Gay, Mills & Airasian, 2009), there are eight common qualitative research approaches, namely: case study, ethnography, ethology, ethnomethodology, grounded theory, phenomenology, symbolic interaction and historical research.

For the current research, a case study was found to be the most appropriate approach. Yin (1993) explains that a case study is a method used when a phenomenon understudy is not readily distinguishable from its context. De Vos, Strydom, Fouch, & Delport (2005, p. 272) indicate that “through the use of case studies researchers get to understand the experiences and perceptions of their respondents.” Moreover, Gay, et
al. (2009) mention that case studies are useful when describing the context of the study and the extent to which a particular programme or innovation has been implemented. Since the researcher was exploring challenges faced by English teachers in ICT integration, which is part of the Learner-Centred Approach, this research was anchored in the constructivism theory.

3.3 Sample

The researcher purposively selected two primary schools in the Omusati Education Region and four primary schools in the Khomas Education Region. The six schools were chosen because of their geographical location and because they were equipped with ICT facilities. All English teachers at the six schools were asked to participate in the study. A total of twenty six (26) interviews were conducted, with visits to six different primary schools, of which two were in rural areas and four were in urban areas. Twenty five (25) classroom observations were carried out during a four week period. All teachers who took part in the study were teaching English Second Language - from grades 1-7. Interviews ranged from discussion to semi-formal interviews with classroom teachers.

The study used a nonprobability sampling technique called purposive or judgmental sampling. The advantage of purposive sampling is that it is based on the researcher’s knowledge and experience of the groups to be sampled and that clear criteria guide the process (Gay et al., 2009).
3.4. Research Instruments

3.4.1 Observations

In order to explore challenges in the integration of ICT into the teaching of reading and writing, nonparticipant observation of 26 English lessons was carried out. In nonparticipant observation, the researcher observes and records behaviours but does not interact or participate in the life of the setting under study (Gay et al. 2009). Field notes were taken during observation to gather, record and compile information during the course of the study. Although this method did not answer the researcher’s questions directly, it was useful for gathering data on the use of ICT for learning purposes. Cohen, Manion, & Morrison (2000) argue that “observations enable the researcher to gather data on the physical setting, the human setting, the interactional setting and the programme setting”. The researcher was able to gather information by looking at the physical settings of the sites, and also by observing the reactions of the people involved in the study and how they interacted with regard to the topic at hand.

3.4.2 Semi-structured interviews

The researcher selected semi-structured interviews because of their flexibility which allowed the researcher to probe participants to gain understanding. De Vos et al. (2005) indicate that the researcher can use semi-structured interviews in order to gain a detailed picture of the participants’ beliefs, perceptions or accounts of a particular topic. A set of open-ended and closed-ended questions was prepared before the
interviews. These questions were used during the interviews to gain clarity from all the participants depending on their responses (see appendix A).

3.5 Data Collection Procedure

English lessons were first observed, according to the observation guide (see Appendix B), and notes were taken on how ICT was integrated. This was followed by semi-structured interviews to seek clarity, as some interview questions were formulated during observations. Some interviews were tape-recorded and others were not. Each interview lasted about 45 minutes, and with the permission of the participants, some interviews were tape-recorded. Transcriptions of observations were done daily to avoid loss of understanding and interpretation of each observation. Data collected during interviews were transcribed immediately after the interview of each participant.

3.6 Data Analysis

Since the researcher intended to explore challenges in integrating ICT into the teaching of reading and writing in primary schools, the mode of inference was inductive, moving from specific observations to broader generalisations. In most qualitative studies, data collection and analysis take place simultaneously (Ary, Jacobs, Razavieh & Sorensen, 2006). Data analysis was done as the data were collected. Three steps suggested by Gay et.al (2009) were used in analysing the data. First, the researcher read through the notes and wrote memos on all field notes and
comments to get an initial sense of the data. Second, ideas or concepts identified in the notes were grouped into themes which emerged from the literature review and data collection. Third, referencing units of texts (e.g. words, sentences, paragraphs and quotations) were sorted out through coding and labelling them to indicate patterns and meanings. In addition, some descriptive data were analysed using frequencies and figures. These data were analysed this way to discern meaning from qualitative data more clearly.

3.7 Validity

According to Gay, et al. (2009, P.113), “in qualitative research, the trustworthiness features consist of efforts by the researcher to address the more traditional quantitative issues of validity (i.e., the degree to which something measures what it purports to measure) and reliability (i.e., the consistency with which the same result can be replicated over time or by different observers).” To enhance the credibility of the findings, the following methods were employed. Firstly, the researcher triangulated data obtained from the two data research instruments mentioned above. Bergamn (2008, P.23) argues that “the idea of triangulation is to reduce the chances of reaching false conclusions.” In data triangulation, the researcher investigates whether the data collected with one procedure or research instrument confirmed data collected using a different procedure or instrument (Ary, et al. 2006).

Secondly, the researcher used direct quotations when transcribing data tape-recorded during interviews. Johnson & Christensen (2000, as cited in Ary, et al., 2006, p.503) argue that “the use of verbatim and member checking accurately portrays the meaning
attached by participants to what is being studied and the degree to which the participants’ viewpoints, thoughts, feelings, intentions, and experiences are accurately understood.”

Thirdly, the researcher provided the English teachers with the raw data and the interpretations to determine whether they considered the interpretations to be reasonable. The feedback from all the participants agreed with the raw data and concurred that the interpretation thereof was reasonable. Therefore as mentioned by Ary, et al. (2006, p. 505), “if multiple investigators agree in their description of the context, in their description of the events, and in their reporting of what was said, ‘internal validity’ is ensured.”

3.8 Ethical Considerations

Ethics refers to well based standards of right and wrong that prescribe what humans ought to do, usually in terms of rights, obligations, benefits to society, fairness, or specific virtues (Velasquez, Andre, Shanks, & Meyer, 2008). To ensure that ethical issues were considered in this research, the researcher wrote a letter to the Permanent Secretary of the Ministry of Education seeking permission to conduct this research (see Appendix C). The letter explained the purpose of the study and what it entailed. The researcher then obtained verbal consent from the participants after informing them that they had the right to agree or refuse to participate in the research activities, and that their identities would be protected to avoid any harm, which may be caused as a result of the research. Moreover, participants were assured that all the information they provided would remain confidential. Permission to tape-record the
interviews was also sought from participants, but the majority raised objections to this. It was for this reason that the researcher opted to take notes.

3.9 Conclusion

This chapter described the methodology used to collect data for this study. The researcher began by presenting the research design, a description of the sample and the research instruments. This was followed by an explanation of the data collection procedures, data analysis, validity and ethical considerations.
CHAPTER 4

PRESENTATION OF DATA

4.1 Introduction

Since the introduction of ICT integration in schools, teachers have continued to be confronted with many challenges and increasing pressure as to how these types of new technologies can be successfully integrated to enhance teaching and learning. Teachers must consider how best this integration can be made a reality, be meaningful, and serve the needs of learners. The main reason for conducting this study was to investigate challenges faced by teachers in integrating ICT to enhance reading and writing in English at primary schools. In this chapter, the researcher presents the main findings of the study.

Responses from interviews and findings from observations are presented in subsections under the following headings:

1. Teachers’ training in ICT integration;
2. ICT skills of teachers;
3. Experiences in ICT integration in the teaching of reading and writing;
4. How ICT can be used to support the teaching of reading and writing;
5. The difference between teaching using ICT and teaching without using ICT;
6. ICT tools used by teachers;
7. Challenges faced when integrating ICT into the teaching of reading and writing;
4.2 Teachers’ Training in ICT Integration

The first question was aimed at finding out whether teachers at primary schools had received any training in ICT integration across the curriculum. In rural primary schools, all the respondents indicated that they had never received training. Of the respondents in urban primary schools, 40% indicated that they also had not received training in ICT. However, 60% of teachers in urban schools indicated they had received training.

4.3 Skills of Teachers in ICT

Teachers were also asked about the types of skills they had in the ICT field. Despite the fact that most of the respondents indicated that they had not received training in ICT integration in English to improve reading and writing, some indicated that to a certain extent, they had acquired skills which they tried to use in their classrooms. When the researcher observed the lessons, none of the English teachers integrated ICT into their teaching; however, during discussions, they referred to how they could have done it or how they could do it provided they had the necessary skills, tools and guidance.
4.4 Experiences in ICT Integration of Reading and Writing

The majority of the respondents indicated that ICT integration was not very practicable at their schools because of lack of infrastructure and lack of proper training. However they were aware of some advantages which could be achieved if integration were effectively implemented. Thirty-five percent of the respondents commented that the use of ICT was more reliable, educative and more effective, while a further 35% argued that the use of ICT, more especially computers, not only improved reading and writing in English but also helped children to develop other skills which would contribute towards their career opportunities in ICT.
Thirteen percent of the respondents mentioned that they were pleased with the introduction of ICT in schools as it would help learners in improving their pronunciation of words and in building a rich vocabulary in English. One of the respondents also testified to this by saying: “If learners can listen to the radio or watch television more often, pronunciations could improve as learners would not only be used to the way teachers are pronouncing words. They would get a chance to hear English spoken from a different perspective and pronounced differently and they could also imitate those pronunciations.”

Seventeen percent of the respondents had no comment with regard to ICT integration as they claimed they knew nothing about it and had never used it. These teachers had no knowledge or experience in ICT because they were not trained in this field at teacher’ training institutions and neither had they been trained since commencing their teaching careers.

4.5 How ICT can be used to Support the Teaching of Reading and Writing

Respondents were asked to comment on how they used ICT to support reading and writing in their English lessons. Forty-three percent indicated that because of lack of materials (e.g. computers) and lack of proper training they chose not to use ICT in their lessons. However, 12% indicated that they made use of the ICT laboratories once a week for learners to complete activities on the computer. In the laboratories they gave learners a chance to read and write on the computer and print out what they had done, and paste everything into their workbooks. These respondents indicated that activities done on the computers were not formally assessed as teachers felt that
these activities did not give a true reflection of learner’s writing competencies since computers correct everything that is wrongly spelled, and through that, learners became lazy and did not care whether they spelt words correctly or not. Respondents indicated that they always expected all written work to be hand-written so that learners could improve their writing skills.

Twenty-seven percent of respondents emphasised that they were forced to search for information on the Internet to meet the syllabus objectives, including those for reading and writing. They commented further that it was necessary for them to make use of the Internet since textbooks and the syllabus often did not correlate. This was because the syllabus was revised from time to time, but books were either not adjusted or no new books were produced to meet the syllabus objectives. Ten percent of the respondents indicated that they did not make use of ICT at all. This was because they were comfortable with the traditional way of teaching without ICT.

The Difference between Teaching using ICT and Teaching without Using ICT
1. Saves time, makes work easier  
   Time-Consuming
2. Enjoyable, Motivating  
   Boring, Lack of concentration
3. Modernised  
   Old-fashioned
4. Practical  
   Based on memorisation
5. Exploratory and Discovery  
   Direct reading
6. Mastery Method  
   Drilling method

**Figure 2:** Differences between Teaching Using ICT and Teaching without ICT.

As shown in Figure 2 above, respondents felt that using ICT was more beneficial than teaching without integrating ICT. Respondents indicated that ICT integration was more productive because it catered for all the principles of learner-centred teaching where learners were more involved in lessons through doing most of the activities while teachers facilitated. This would enhance learner’s ability to read and write faster. The researcher observed that some schools had computers with pre-set activities which included reading and writing for all grades. Respondents said that this saved time in the sense that learners could sit at the computer and do activities which were assessed by the computer and the teacher did not have to write and clean the chalkboard all the time.

In contrast, respondents indicated that teaching without ICT could be time consuming. This was because teachers had to write on the chalkboard and learners had to copy or read from the textbooks and complete activities in their exercise books. They mentioned that because of this, there was often a lack of concentration on the part of learners, and learning became boring. In addition, respondents mentioned that teaching without integrating ICT fell under the teacher-centred approach, which they considered an old-fashioned way of teaching and which was phased out of the education system many years ago as it did not promote effective teaching and
learning. The same respondents felt that learners also tended to memorise content when taught in an old-fashioned way (teacher-centred approach) and only relied on the knowledge they got from the teachers and the textbooks.

Respondents indicated further that when they integrated ICT, it was enjoyable and motivating. One of the respondents commented that “children are always excited when it is time for computer classes but become withdrawn and sleepy during normal lessons”. The same respondent added that “one reason for this could be that learners only got to see these types’ facilities at school which are not accessed at home.”

Respondents also mentioned that apart from ICT being enjoyable and motivating, it is also modernised. When learners read and write using technology they tend to be motivated too. This was strongly supported by one respondent who said “When something new is coming up it is usually discovered through ICT. For instance in olden days people use to write letters, send telegrams etc. for communication purposes but nowadays communication is very easy and fast through the use of e-mails, fax, Facebook and so forth.” Because of all the advantages associated with the use of ICT in the classroom, this significantly enhances learner’s ability to read and write fast in the classroom environment as opposed to teaching without ICT.

4.7 Types of ICT Tools used by Teachers to Promote Reading and Writing

Figure 3 shows the types of ICT tools used by teachers to promote reading and writing. These responses are presented as indicated by all twenty six teachers in both rural and urban primary schools.
Twenty percent of the respondents indicated that they used computers to type and print worksheets, since work that was typed looked more presentable to the learners. These teachers expressed the opinion that computer usage was a good experience for them; however, they very often encountered problems such as inaccessibility whenever they needed to use computers. This was because in most cases, when computers were broken, there were no technicians to repair them on time. It was observed that in rural schools, there were only one or two computers, one for the secretary and another for the principal. In most cases, these computers were used for administrative purposes. On the other hand, urban schools had computer laboratories which were well equipped and well managed at the same time.

*Figure 3: Tools Used by Teachers in the Integration of ICT into the Teaching of Reading and Writing.*
Twenty percent of respondents indicated that they used the Internet to download reading and writing lesson plans and activities. They also mentioned that the Internet could also be used by learners to do activities on-line, but this often did not take place since teachers did not know which websites to log on to. One respondent commented that one advantage of learners completing activities on the computer or on-line was that these kinds of activities were often structured in such a way that learners were not able to proceed to the next step before they correctly had completed the first step. That gave them a chance to keep trying until they got the correct answers. Some respondents indicated, however, that they were concerned that when learners logged on to the Internet, they might visit sites that contained content that was not appropriate to their age or not designed for educational purposes.

Ten percent of the respondents indicated that they used DVDs in the teaching of reading and writing. These DVDs were provided to the schools by the government. Each grade had its own programmes with worksheets and games. However, the same respondents indicated that these DVDs could only be effectively utilised if there were more computers for all the learners.

Twenty-five percent of the respondents indicated that they used television sets. They argued that they used these only occasionally because it was always difficult to take learners either to the viewing rooms or the libraries as they needed to book for the TV in advance and it frustrated teachers as it could lead to chaos and disturbance in the whole school. One respondent strongly emphasised on this point by saying that “moving learners to where the resources are could be a challenging exercise, it will
be better if each class can be equipped with at least a computer, a TV, an OHP, and a tape recorder. We can quickly download some reading and writing activities on the computer and use the OHP to display information for the learners.”

Twenty percent of the respondents indicated that they used overhead projectors to present lessons. It was observed that many classrooms were equipped with OHPs in urban schools; however, some respondents indicated that they did not make use of them as they did not know how to do so. They also mentioned that they were not motivated to use OHPs because it was never emphasised from the management side (i.e. school principals and heads of departments) that they must make use of the ICT resources availed in their classrooms.

Five percent of the respondents indicated that they used tape-recorders during English lessons. However, this tool did not enhance reading and writing but was more effective for speaking and listening comprehension. Teachers in rural schools indicated that tape-recorders were the most common technological tools used in English lessons. Furthermore, 20% of the respondents indicated that they made use of photocopy machines to duplicate enough reading and writing materials. They found this very helpful since many schools experienced problems with shortages of textbooks.

4.8 Challenges Faced by Teachers when Integrating ICT into the Teaching of Reading and Writing
Respondents were asked about the challenges that they experienced in integrating ICT into their lessons on reading and writing. It should be kept in mind that although many of the responses referred to school ICT facilities in general, the fact that these respondents were all English teachers implies that their comments are applicable to the use of ICT in the teaching of reading and writing as specified in the objectives of this study. Responses were as follows:

4.8.1 Lack of Teacher Training

Lack of teacher training was one of the major challenges indicated by respondents. This was supported by the findings as it was indicated that 100% of respondents in rural schools and 40% of respondents in urban schools had never been trained. All the respondents who indicated that they had never been trained mentioned that they rarely integrated ICT into their lessons because of lack of training and guidance.

Fifty-eight percent of respondents indicated that proper training in the ICT area was supposed to be the first priority before the provision of ICT resources. They further mentioned that there would be no significant difference in the integration of these resources if implementers had very little knowledge on what was to be done. One respondent emphasised: “training should be for all teachers especially those who were trained during colonial era as they were deprived of this opportunity as there were no modernized tools availed in their time.”
4.8.2 Inability to Operate ICT Facilities

Respondents who indicated that they were not trained indicated that they were unable to operate or work with ICT. This was supported by one respondent who commented emphatically that “we do not know how to use the modernized tools; we have very limited skills and this is the reason why most of us are so reluctant to integrate ICT in teaching, we need support to strive for excellence.”

4.8.3 Lack of Resources

Most of the respondents also mentioned that lack of ICT resources was one of the major hindrances towards successful integration. One respondent commented “the resources are very limited in comparison to the number of learners the school may have, schools are unable to purchase ICT resources as they are costly and government cannot cater for all schools at once.” Respondents mentioned that even though ICT resources were distributed among schools countrywide, there were not enough to cater for all the learners to have full access at any time.

The researcher observed that urban schools had a few ICT resources which were placed in libraries and laboratories and few or no ICT equitable classrooms. The ICT resources included mainly computers, photocopy machines, overhead projectors, tape recorders, DVDs and television sets. Schools in rural areas had even fewer ICT resources; they mainly had two computers (one for the secretary and the other one for the principal), one photocopy machine and one television set in the library and no ICT equitable classrooms.
Thirty-one percent of respondents mentioned that equal distribution of resources to all schools was of importance. Some respondents in rural schools felt that schools in urban areas were provided with more resources in comparison with schools in rural schools. Furthermore, one respondent argued that if resources were available, they would find ways and means to integrate them even if they were not trained. He said “training is not a big issue because if teachers are provided with resources they will find a way to integrate them in their lessons, younger teachers can train others.”

4.8.4 Burglary

A few respondents mentioned that as schools became equipped with ICT resources, they also became vulnerable to burglaries. Three respondents from different schools revealed that their schools had been broken into several times in an attempt to steal computers. One of the three respondents emphasised that “some computers and televisions were stolen and some of these resources just disappeared from the school and one really finds it difficult to explain these types of issues. In the end this would be extra costs for the school as broken windows and vandalised buildings have to be fixed.” They said that the situation was worrisome because expensive facilities kept disappearing. It was also indicated by some respondents that these facilities disappeared despite the fact that no record or proof was found of robbery at the school. This was rather a difficult situation and proper control needed to be exercised to make sure that teachers and stakeholders in the schools did not take these facilities for their own benefit. The same respondents explained that they felt it was the
responsibility of the school management to make sure that ICTs were regularly inspected and that teachers were using them to promote teaching and learning.

4.8.5 Lack of Motivation from the School Management

Respondents indicated that the management (i.e. principals and heads of department) showed no interest and did not motivate teachers to integrate ICT into their lessons. This lack of interest was clearly shown when the management did not follow up to see to it that available resources were utilised appropriately. It was also indicated by a few respondents that the principals and heads of department (HODs) on occasion discovered after a long time that computers or other ICT equipment belonging to the school were missing or were no longer functioning and that this was because of poor monitoring and negligence. Given the fact that the management did not put emphasis on the use of ICT integration, teachers ignored the whole process.

4.8.6 Lack of Parental Involvement

Three respondents from rural schools indicated that most parents did not show much interest in the education of their children. They mentioned that parents could become involved by assisting schools financially in maintaining the available ICT equipment or by purchasing a few items of ICT equipment for the schools their children were attending. If there could be collective efforts from the parents, then schools would not always have to wait for ICT facilities to be provided by the government. Lack of parental involvement could be a result of parents not understanding what they were contributing for and how it would benefit their children. One respondent in a rural
school indicated that about 90% of parents were illiterate, so it would be difficult for them to understand what ICT was all about.

However, four respondents from urban schools indicated that because of the parents’ collective efforts, they were able to purchase some ICTs for the school and were able to maintain them. They felt that parents needed to be educated on the importance of ICT in schools and needed to take initiatives to contribute where they could.

4.8.7 Language Barrier

It was indicated by most respondents that since English was the second language of the learners, these learners found it difficult to comprehend the technological language which was in English. They also said that they felt that the language policy was failing them since it stipulated that lower primary learners (grades 1-3) should be taught through the medium of mother-tongue. However, none of the ICT resources (i.e. reading and writing materials) were in the medium of mother-tongue, making it difficult for the teachers to integrate ICT in the lower grades where the majority of learners did not understand English.

One respondent from a rural primary school stated that the problem of the language barrier did not lie only in the lower grades, since even the upper grades had quite a number of learners who were still struggling with difficult ICT terminology. This was indicated mostly by respondents in rural schools as they felt that since their learners were not exposed to English, they could hardly understand, speak, read or write the language. Another respondent commented that “ICT resources are in English. When
learners watch television or make use of the computer, the interest is only on pictures but the conversation does not make sense to them. When learners have the opportunity to complete tasks on DVDs normally they fail because of the complex language they encounter.”

Respondents felt that the current language policy needed to be revised so that learners could be exposed to English as early as possible to enable them to deal with the complex language of technology. One respondent from a rural school emphasised that “English should be introduced as the medium of instruction from the first grade because learners especially from rural schools struggles with the language since the mother tongue policy is strongly emphasised.” When asked whether they also encountered a similar problem when it came to language, most of the respondents in urban schools mentioned that English was introduced from the first grade because many different language groups were often found in the same class and the only choice for the teacher was to teach through the medium of English.

4.8.8 Overcrowded Classrooms

Most of the respondents from both rural and urban schools said that their classes had close to 45 learners, making it impossible to pay attention to all of them at once. The fact that classes were overcrowded left very limited space where ICT facilities could be displayed in the classroom. Some respondents remarked that they would like to have ICT facilities displayed in their classes. One of them emphasised that “computer corners in every class will serve as an advantage as learners can play games and do many activities in English lessons which will enhance reading and writing.”
4.8.9 Conclusion

This chapter presented data gathered from respondents during the interviews and during observations of lessons.

In the next chapter, the researcher will present a discussion of the findings of the study.

CHAPTER 5

DISCUSSION OF FINDINGS

5.1 Introduction

In chapter 4, the researcher presented data gathered from the investigations at the six primary schools. The findings illuminated issues associated with the challenges in the integration of ICT in the teaching of reading and writing in English. Themes that emerged from the findings as presented in the preceding chapter provide the basis for this chapter where the researcher discusses the challenges of ICT integration in education. In addition, this chapter relates the outcomes of the study to the literature. Three themes that surfaced from this case study were factors enabling ICT
integration, support for teachers in ICT integration and imbalances in the distribution of ICT resources between rural and urban schools. The discussion in the chapter focused on these themes. The researcher found a number of general challenges to the integration of ICT, and that these naturally affect the teaching of reading and writing. In other words, there are general issues affecting all ICT integration, and then there are specific issues affecting reading and writing.

5.2 Factors Enabling ICT Integration

Enabling factors in this study refer to any approach which provides opportunities for teachers to be able to integrate ICT into their teaching practices, provided that these factors are fully and properly implemented. In this study, the researcher identified four enabling factors, which are: training, skills and competencies, access to resources and technical support.

5.2.1 Training

The first issue that was identified as an enabling factor in ICT integration was training. If teachers were provided with proper training, they could make better use of ICT in their teaching. Teachers felt that there was a need to continually develop their teaching strategies to keep up with changes that could be a challenge to them in the curriculum. ICT integration still remains one of the challenges that teachers reported facing. This was supported by the data which revealed that training was an enabling factor which was not effectively administered, leaving teachers confused and not knowing how to implement what was expected from them. Responses from the
teachers, as revealed in the presentation of data indicated that all the teachers (100%) in rural schools, and 40% of teachers in urban schools who took part in the study had never received training in ICT integration. Because of that, they were not able to integrate ICT into their reading and writing lessons. That these teachers were incapable of integrating ICTs in their lessons to enhance reading and writing indicates lack of initial training at teachers’ training institutions i.e. colleges and universities as well as the lack of attention from the government (e.g. in-service training).

The findings also revealed that most teachers were digital immigrants, meaning they grew up and went to school before the advent of digital technologies such as ICT were introduced, and they are normally not confident or comfortable with ICT. Schoepp (2005) claims that when new technologies need to be integrated in the classrooms teachers need to be trained in the use of each particular ICT. Teachers would be well informed if in-service training was provided for them to catch up with what was not part of their pre-service training. Glennan & Melmed (1996) state that the increasingly widespread use of technology in schools requires changes in both pre-service and in-service training and more generally, reform of policies that govern the professional development of teachers. Similarly, Becta (2004) emphasise that the issue of training is certainly complex because it is important to consider several components to ensure the effectiveness of the training, namely, time for training, pedagogical training, skills training and ICT use in initial teacher training.

This study revealed that because of lack of training, teachers were not able to include technology in their lessons. They had very little understanding of what technology was all about and this could lead to confusion. To curb the said confusion, there is a
need for them to be given a chance for professional development in the field of technology. This argument is supported by Robinson (1997, as cited in Passey & Samways, 1997) who argue that all teachers should be helped towards an understanding of the phenomenology of technology innovation and educational change so that they might better plan for their own professional development and for the development of the organisations within which they teach. They further contend that learning how to use ICT in the classroom involves more than training in hardware and software use. It requires pedagogic understanding of what computer assisted learning applications are trying to do and of what the hardware and software are capable of doing.

Additionally, the findings show that even if 60% of teachers in urban primary schools were trained in line with the integration of ICT, there was nonetheless a strong indication that they were still finding it challenging to integrate it into their reading and writing lessons. This shows that the training provided to those teachers was not effective since it made no difference between teachers who were trained and teachers who were not trained. One could also conclude that there was inequality in the benefits of teachers’ development between the rural and urban schools because there was quite a big gap between the number of teachers who were trained in urban schools and the number of teachers who were not trained in rural schools. Teachers in urban schools seemed to benefit to a certain extent in the area of ICT. Most of the in-service training given in the Ministry of Education focuses on urban schools, although this in-service training is also limited. However, in urban areas there are a lot of institutions which offer ICT training and many committed and interested teachers could opt to register in these institutions at their own cost. This is consistent with the
findings of this study, which indicate that most of the urban primary teachers are registered with different institutions offering ICT courses in Windhoek such as Polytechnic of Namibia, and they indicated that they are doing that at their own cost just to gain basic skills.

Training of teachers needs to be the first priority, more especially when a new phenomenon such as technology emerges. Osborne & Hennessy (2003) argue that when there are new tools and approaches to teaching, teacher training is essential if they have to integrate these into their teaching. Lawson & Comber (1999) also argue that teachers are more likely to use ICT in teaching and improve their skills if their ICT training is meaningful for their individual needs. As revealed in the findings of this study, teachers indicated that they were positive and looked forward to using technology provided they were trained in that field. This finding is consistent with the research done by Clement (1985, as cited in Donnell, 1996) whose findings indicated that the majority of teachers wished to receive training in utilising software for small-group cooperative learning activities and they also needed to understand the types of software available for reading and writing instruction.

A study of the problems of integrating computers into the classrooms has yielded a multiplicity of factors, with one outstanding problem being identified namely, the lack of proficiency resulting from lack of teacher training. In California for instance, a survey of education and technology use in K-12 schools conducted by the California Technology Project (CPT) in 1989, indicated that 27% of California teachers felt that they lacked computer proficiency, while 91% felt that the integration of computers into their classroom curriculum was a serious problem for them because they believed
that they were lacking in computer proficiency. On the same point, Cox et al. (1999),
argue that if teachers are to be convinced of the values of using ICT in their teaching,
their training should focus on the pedagogical issues. Karchmer (2000, as cited in
Karchmer, 2001) states that the most pressing reason why teachers do not use
technology in their classrooms may be lack of substantial training provided by teacher
education and staff development programmes. Even though ICT resources are
distributed to the schools, teachers who are supposed to be the primary resources have
no proper training, and it will thus be a waste of funds because there is no effective usage.

Because of lack of training in ICT, teachers lack the necessary skills and
competencies to operate ICT resources. Moreover, beside the need for pedagogical
training, according to Becta (2004), it is still necessary to train teachers in ICT skills.

5.2.2 Skills and Competencies

The findings of this study revealed that most teachers, including those who were
trained for ICT integration lacked the necessary skills and competencies in the ICT
field. The types of skills that teachers have are presented in Figure 1. Although
teachers indicated they had acquired these specific skills, they also indicated that their
competencies were very limited.

Given the results as presented in Chapter 4, this study revealed that teachers lacked
ICT skills and competencies and this led to the situation in which they were not
willing to make technology part of their teaching practices. This finding is supported
by an Australian research study described in Newhouse (2002) which revealed that many teachers lacked the necessary knowledge and skills to use computers and were not enthusiastic about the changes and integration of supplementary learning associated with bringing computers into their teaching practices. Another worldwide survey conducted by Pelgrum (2001) of the nationally representative samples of schools from 26 countries, revealed that teachers’ lack of knowledge and skills was a serious obstacle to using ICT in primary and secondary schools.

In addition, Demiraslan & Usluel (2008) emphasise that skills are important for teachers to be able to improve their teaching and their students’ learning experiences; knowledge is pre-requisite as the basis on which skills are developed. Similarly, Tanti & Moran (2008) believe that the knowledge of teachers regarding how to best operate ICT on its own is not enough for effective integration into the classroom. They further argue that it would be impossible to further any teacher in his/her ability to use ICT without sound knowledge on how to operate it and how to use it to improve teaching and learning in his/her subject area.

Similarly, Williams, Wilson, Richardson, Tuson & Coles (1998), in their research on teachers’ ICT skills and knowledge needs, indicate that teachers report a need for technical skills and knowledge in using the ICT resources they have available to them, but they also want to know more about how to apply that knowledge within the curriculum. In line with what Williams et al. (1998) indicate, one could reach the conclusion that teachers can improve their ICT skills if given the opportunity to explore these new tools from time to time.
Data presented in Figure 1 revealed that even though there were quite a large number of teachers in urban schools who reported that they had received training, the skills revealed by them did not correlate with this fact as the majority indicated having very few skills and competencies. This could have been caused by lack of confidence in using ICT in front of learners in their classrooms.

The result of the research by Cox et al. (1999) shows that after teachers attended professional development in ICT, they still did not know how to use ICT in their classrooms; instead they knew how to run a computer and set up a printer. Cox et al. explain that these courses focused only on teachers acquiring basic ICT skills and did not often teach teachers how to develop the pedagogical aspects of ICT. This result is consistent with what the findings of this study revealed, namely, that teachers who were trained still struggled with integrating ICT in their lessons as they felt the training they underwent had not made much difference. The findings of this study are consistent with what Cox found out in that teachers indicated that they still did not know how to integrate ICT in their reading and writing lessons after they had been trained. In line with Cox et al. (1999), Balanskat, Blamire & Kefala (2006) indicate that inappropriate teacher training is not helping teachers to use ICT in their classrooms and in preparing lessons. They suggest that this is because training programmes do not focus on teacher’s pedagogical practice in relation to ICT, but only on the development of ICT skills. Donnel (1996) mentions that the average classroom teacher is not computer literate and cannot utilise computers fully in the basic academic curriculum, and that as a result, the many computers that have been placed in schools are not being utilised to full capacity.
The literature describes the kind of skills teachers may need when integrating ICT into their subjects. The broad curriculum for the Ministry of Education (2008) suggested the following basic competencies in ICT: learners should be able to choose appropriate communication solutions, utilise hardware and software, evaluate information, transform information to knowledge, follow ethical practice, interact considerately, communicate clearly, etc. For learners to attain these skills, teachers should have gone through the right initial teacher training. Similar skills are also suggested by Stakenas, Tishkin & Resnick (1992, as cited in Roblyer, Edwards & Havriluk, 1997). They suggest the following:

1. **Basic knowledge about computer technology**: teachers must have a general grasp of how computers work and be able to use basic terminology.

2. **Equipment operations skills**: teachers must be able to perform standard computer operation procedures e.g. formatting disks, loading and running programmes, saving files and printing documents) as well as trouble shooting for minor problems.

3. **Productivity tools skills**: Teachers should use and teach word processing, database, spread sheet, graphics and desktop publishing software.

4. **Instructional application skills**: Teachers must evaluate and use various types of specialised computer software (e.g. drill and practice, tutorial, simulation, and problem solving packages) to accomplish specific educational objectives.
5. **Management application skills:** Teachers should use computers to manage and complete tasks such as record-keeping, progress reports, report cards, attendance, worksheets, tests, letters to parents and grade books.

The above skills were also supported by Newhouse (2002) who argues that while for many teachers computer implementation may require changes in attitudes and classrooms practices for most teachers there are a number of practical skills such as computer operation skills and classroom management skills which present an obstacle. Becta (2004, p.7) concludes that “many teachers who do not consider themselves to be well skilled in using ICT feel anxious about using it in front of a class of children who perhaps know more than they do.” This study revealed that ICT was used rarely and only to some degree, mainly by individual teachers with ICT confidence and competence. Teachers who lacked the necessary skills and strategies tend to turn a blind eye to the integration of ICT to avoid frustration and confusion on the part of learners. This shows already that it is not only operation skills which are needed for the effective integration of ICT, but teachers also need to manage their classes by ensuring that all learners engage fully in the activities at hand and that assistance is rendered at all times. Additionally, teachers can only gain the necessary skills and competencies if they are exposed to or have access to resources. However, the findings of this study indicated that teachers did not have access to ICT resources.

**5.2.3 Access to Resources**
The findings presented in Chapter 4 indicated that teachers had very little or no access to the ICT resources available in their institutions. The effective integration of ICT in schools depends upon the availability and accessibility of ICT resources (e.g. hardware, software and communications infrastructure). The findings of this study revealed that many schools were not fully equipped with adequate ICT resources which could be used by all teachers in those specific schools when needed. In addition, since many classrooms were not equipped with ICT resources, teachers were not willing to relocate the whole class to an ICT laboratory as it involved moving all the additional materials required for the lesson.

In Chapter 4 the results revealed that lack of resources was also one of the major challenges faced by teachers in integrating ICT to enhance reading and writing. Because of that, the few resources that were available were placed in libraries, computer laboratories or administrative offices. These findings are supported by Donnel (1996) who states that computers have been placed in computer laboratories, media centres and administrative offices, and are used teach keyboarding and computer literacy to conduct simplified research and for administrative bookkeeping functions. The findings of this study indicate that there is thus a huge need to increase school ICT resources that can be used by English teachers to integrate ICT in their reading and writing lessons.

Moreover, teachers revealed that there was a need for them to be exposed to ICT resources as it was very important for their teaching practices. Some teachers indicated that using the Internet made their work easier because they could access different types of teaching materials that include; reading materials for the learners,
learners could complete writing exercises on the internet which are automatically marked and they can search for information. Pickergill (2003) found that the ease of Internet access allows teachers to help students to become experts in searching for information rather than merely receiving facts. Through using the internet, teachers can explore diverse teaching techniques that they can use in their English lessons to teach reading and writing in different ways. Also, Chellive (2004) states that teachers can access an on-line library of 108 writing prompts spanning all grade levels in narrative, expository, and persuasive modes. Teachers need no longer to be the only source of information, but can rather act as facilitators so that students can actively interpret and organize the information they are given, fitting it into prior knowledge (Dole, et al., 1991). If there are no ICT resources integrated in lessons, the learners will not have these advantages.

According to Vision 2030 for the Republic of Namibia, Namibia should produce skilled labourers who have knowledge of ICT. In other words, Namibia should move from being literate to being a knowledge-based society. A knowledge-based society is one where knowledge is created, transformed, and used for innovation to improve the quality of life (The National Curriculum for Basic Education, 2008). Moreover, Hennessy, Harrison & Wamakote (2010) argue that teachers see ICT as kindling students’ interest and learning in a subject. ICT promotes a positive attitude towards information technology as an essential part of lifelong learning. Teachers also perceive the use of ICT as enhancing recall of previous learning, providing new stimuli, activating learner’s responses, providing systematic and steady feedback. Cox, Preston & Cox (1999) also support the notion that the factors contributing to ongoing use of ICT by teachers include making lessons more interesting, more
enjoyable for teachers and their students, more diverse, more motivating, and supportive of productive learning.

Pelgrum’s (2001) conclusion on his exploration of practitioners’ views from 26 countries on what the main obstacles were to the implementation of ICT in schools was that an insufficient number of computers, insufficient peripherals, insufficient numbers of copies of software and insufficient simultaneous internet access were among the top ten barriers related to the accessibility of ICT. In addition, Newhouse (2002) suggests that schools and educational systems must provide the infrastructure and support for students and teachers, as well as the maintenance of constructivist learning environments in which ICT is used. As discussed earlier, English teachers in this study mentioned that they should be provided with ICT resources as well as continuous support to keep them up-dated. They also mentioned that they needed access to new softwares and programmes that enhanced the value of reading and writing to learners. Similarly, Leach, Ahmed, Makalima & Power (2005) argue that teachers need access to resources which will supply ideas and material for different classroom application, including contact with peers who are also developing their own pedagogies and resources.

5.2.4 Technical Support

The findings of this study also revealed that resources tend to be neglected when they are out of order. This was so because schools had no trained technicians who could fix these resources and the school would have to call in private technicians and would
have to pay a lot of many from the school development funds. It is very costly to maintain these resources; however, the Ministry of Education can make provision for ICT technicians in every region or circuit. On the other hand, the Ministry could train one teacher as a technician at each school and in this way, maintenance would be cheaper. Korte & Hüsing (2007) argue that ICT support or maintenance contracts in schools help teachers to use ICT in teaching without losing time through having to fix software and hardware problems. In this study, however, it was found that schools were not provided with ICT technical expertise.

5.3 Support for Teachers in Integrating ICT

5.3.1 Support for Teachers at the School Level

It is the responsibility of the management in schools to make sure that ICT is integrated across the curriculum. As presented in Chapter 4, English teachers participating in this study reported that they had little support from their principals and head of departments who never emphasised the use of ICT. Fullan (1991) observes that while many researchers identify the school principals as a key factor in bringing about successful changes in schools, there is very little research on the relationship between principals and technology leadership. Similarly, Hans (2002) argues that principals need to inspire, encourage and support teachers to meet the
challenges that lie ahead. Moreover, Rockman & Sloan (1993) assert that school principals as building level leaders are important people to make change happen and take responsibility for technology or any kind of innovations. HODs also play a major role in promoting the usage of ICT within their departments. The current study indicated that HODs played no role in promoting technology as part of the curriculum.

5.3.2 Support for Teachers at National Level

Teachers also need support from the policy makers and advisory teachers. Policy makers need to go to schools and assist teachers as they know exactly what is expected from them. Teachers would learn better if they could observe people who are experts demonstrating to them how ICT is integrated into the lesson. The other way teachers could get support at national level is through the provision of on-going training which should be thoroughly evaluated to ensure that it is helping teachers. This control mechanism should go hand-hand with on-going support, and with making sure that teachers attend regular workshops to be up-dated. In addition, advisory teachers should also go to schools and do lesson presentations to show teachers how ICT can be integrated within their subjects. If the Ministry of Education takes development to the teachers, such as lesson presentations, this will enlighten them on issues which could be regarded as hindrances to the process of teaching and learning with ICT and be informed on what measures to take in overcoming those challenges.
5.4 Imbalances in the Distribution of ICT Resources between Rural and Urban Schools

This study revealed that urban schools were observed to be more advanced in terms of ICT in comparison with rural schools. The government funding for these resources is very limited and ICT resources tend to be more available in urban than in rural areas. In rural schools, access and usage of ICT, like the electricity supply itself, remain the biggest challenges. Kent & McNerney (1999) mention that President Clinton in his State of the Union address, emphasised access to telecommunication technology in schools so that a child in the most isolated rural town, the most comfortable suburb, or the poorest inner city school, could get the same access to the same universe of knowledge. In Namibia, ICT resources have been distributed countrywide in both urban and rural schools to provide equal learning opportunities for all learners which proves that there were imbalances in this distribution of resources. More emphasis should be placed on rural schools where access to ICT resources is a challenge, as is the socio-economic backgrounds of families who might not be in a position to buy or provide access to ICT resources, as opposed to those in urban schools who are in a better socio-economic position. For example, in developed countries, such as Scotland, it was reported that rural schools used ICT well to address issues arising from smaller school size and often isolated locations. They were beginning to use videoconferencing and online packages to maximize the learning opportunities for pupils, particularly in the upper years of secondary school (report by HM Inspectors of Education, 2005). Furthermore, in many parts of the world, rural schools have been neglected during the distribution of resources because of other obstacles, such as poor electrification, long distance from the cities, lack of ICT skilled teachers etc.
which made it impossible for ICTs to be provided. An article found on http://www.ccl.cca.ca/pdf/LessonsInLearning/10-03-01_06E.pdf reports that in Canada, for example, rural schools are disadvantaged relative to urban schools with respect to access to and the use of ICT. According to the available data on this website, although over 97% of Canadian schools, including both rural and urban schools, have computers and are connected to the Internet, urban schools may be better able to make use of this connectivity.

Furlonger (2002, as cited in Herselman, 2003) points out that urban scholars have the advantage of computer centres, internet access to information and experienced teachers while rural schools, on the other hand, face many challenges that are foreign to their urban counterparts. According to Furlonger, in most rural schools, unlike urban schools, it is unlikely that you will find a computer laboratory, let alone someone with knowledge of the Internet. He goes on to argue that the Internet can be used to bridge the gap between rural and urban schools through the use of educational web sites and lectures via satellite. On the same note, English teachers in rural schools participating in this study also stated that because of lack of ICT resources, lower primary classes are ignored and the focus is normally on upper grades. Williams, et al. (1998) report that teachers of lower primary levels feel that the upper primary levels have greater priority when it comes to the allocation of ICT resources. This would affect the level of reading and writing at lower primary schools to be in a very poor position as they would be exposed to the use of ICT when they reach the upper grades.
CHAPTER 6

Conclusion and Recommendation

6.1 Introduction

This study attempted to explore challenges in the integration of ICT into the teaching of reading and writing. Although the focus has been mainly on primary level, other educational levels such as grades 8-12 were also considered.

Summary of Findings
In the process of investigating challenges to integrate ICT into the teaching of reading and writing, the researcher found that in this regard, English teachers were affected by a number of issues regarding the integration of ICT in schools in general. The findings of this study indicated that teachers in primary schools lacked the necessary skills and knowledge for using ICT during their lesson presentations. They indicated that ICT integration did not really take place even though they were aware of some positive impacts that ICT could bring about in language learning. Some of the positive impacts include motivation of learners, eagerness of learners to explore and discover new knowledge, excitement on the part of learners, and vocabulary enrichment.

As found in this study through interviews with English teachers, there were eight main areas which were believed to be challenges in the integration of ICT. The first challenge was teachers’ lack of training. Lack of training of teachers was found to be a crucial aspect which needs to be seriously considered during policy formulation. ICT is a new development in the education sector and most of the teachers were overwhelmed or rather shocked by the idea of including it in their lesson presentations. At the time this study was conducted, only a few teachers had been trained, but even then, they were not integrating ICT into their lessons as there was no on-going support to strengthen what had been learned.

The second challenge identified was inability to operate ICT facilities. Teachers were willing to integrate ICT in their English lesson to improve reading and writing, but even though they were supplied with the necessary facilities, they were unable to operate them.
The third challenge was lack of ITC resources in schools. Most of the schools, especially in rural areas, were faced with this challenge and could not integrate ICT effectively. As a result, the available resources were placed in computer laboratories or libraries. Teachers preferred ICTs to be placed in their classrooms to maximize the opportunities for curriculum activities.

The fourth challenge was theft. Schools became targets for burglars who stole and sold ICT resources. These resources kept disappearing from schools because there was no proper control and monitoring.

The fifth challenge was lack of motivation from the school management. The management of the schools did not put emphasis on the integration of ICT, and there was no proper monitoring, thus leading to teachers becoming reluctant to use ICT technology.

The sixth challenge was lack of parental involvement. Parents had little knowledge about the importance of ICT in education, and this was the main reason they did not offer a helping hand in contributing towards the purchase of these facilities for the schools.

The seventh challenge was the language barrier. Teachers and learners faced the problem of the complex language of ICT, as they encountered difficult terminology. Learners in the lower grades were the most disadvantaged group because they were taught through mother-tongues as medium of instruction and thus could not understand the English used in ICT.
The eighth challenge was overcrowded classrooms. Most classes comprised of approximately 45 learners, making it impracticable for ICT to be used since teachers found it difficult to pay attention to all learners in a period of 45 minutes, especially considering the issue of limited resources.

6.3 Conclusion

This study revealed that ICT integration in education still has a long way to go. Although this study revealed general issues on ICT integration, these issues also directly affected the teaching of reading and writing. This was because the majority of teachers were unable to integrate ICT in their teaching practices. The main obstacle towards the successful integration of ICT was lack of training which resulted in teachers lacking the necessary skills and competencies. The study also revealed that many of the English teachers participating in the study were willing to make use of ICT for teaching and learning purposes even though they encountered many challenges in the process. They indicated that technology in education was a motivating tool both for them and for their learners as they became part of the global village where everything is technologically advanced. Although most of the schools benefitted from the deployment of ICT resources from the government, this study demonstrated that during the distribution of these resources there were imbalances between rural and urban schools. This conclusion was drawn after it was observed that urban schools were equipped with more ICT resources than their counterparts in rural schools. The study concluded that without proper infrastructure, facilities such as electric power, connectivity and computer related materials and human support,
ICT integration into teaching in general, and the teaching of reading and writing in particular, will not succeed.

6.4 Recommendations for Practice

Based on the findings of this study the researcher recommends the following:

• It emerges clearly that the implementation and application of ICT resources is quite limited and premature in the Namibian education system. However, there is a growing need to integrate ICT in the education system in an increasingly demanding ICT world.

• There is as great need to use and integrate ICT resources in the teaching of reading and writing. However, there is a lack of ICT resources for the use of primary teachers to enable the integration of ICT in their teaching practices.

• One of the major problems facing primary teachers in providing effective reading and writing teaching lessons to their learners is inadequate training in the application of ICT resources. There is thus a need to provide continuous training to all teachers to enhance the ability of learners to read and write. Moreover, teachers should also try to strengthen their professional needs related to ICT.

• The government should distribute resources equally between rural and urban schools. Rural schools tend to be neglected because of their long distances from towns, poor electrification, etc.
• Thorough research should be done before a policy is implemented to make sure that teachers can cope with that policy or to determine what type of support they will need. Advisory teachers should go to schools and do research with the teachers or even present lessons where they integrate ICT, after which they should evaluate the results to determine whether the lessons promoted learning in particularly reading and writing.

• School management should take a lead in encouraging the use of ICT in reading and writing lessons.

• Teachers’ input should be considered during policy formulation because they are aware of what their needs and those of their learners are. They will be better able to suggest how they want to integrate ICT into their English lessons because they know what kind of learners they deal with on a daily basis.

**Recommendations for Future Research**

The researcher also suggests the following recommendations for future research:

• A study of the impact of the Language Policy in the implementation of ICT. The Language Policy stipulates that lower primary grades should be taught through mother-tongue as the medium of instruction. However, none of the languages used in ICT is in learners’ mother-tongues. Research should be carried out to investigate what impact this has in the successful use of ICT in English lessons.
• A study to determine the extent to which schools formulate and implement ICT in internal policy. Do schools have internal ICT policies and how effective are these policies to make ICT integration real.

• A study to investigate what skills teachers and principals possess in the ICT field, and what ICT tasks they are able to perform with confidence so far.

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Appendices

Appendix A

Instrument title: Interview guide

Title: Challenges faced by English Teachers in Integrating Information and Communication Technology (ICT) in the Teaching of Reading and Writing in two Rural Primary Schools in the Omusati Region and four Urban Primary Schools in the Khomas Region of Namibia.

Below is the General guide that the researcher used which led semi-structured interviews.

1. Introduction
Welcome the participant and introduce the research at hand.

Explain the general purpose of the Interview Discussion and why the participant was chosen.

Explain the presence and purpose of recording equipments.

Address the issue of confidentiality.

Invite the participant to introduce her/himself and say a few words about him/herself.

2. Interview

A semi-structured interview was conducted.

1. Begin with eliciting their initial thoughts on the subject of ICT integration 10-15 minutes.

2. Explore themes and core themes. (Approximately 1 hour)

1. What ICT skills do English teachers at primary schools have?
   - Have you received any training on ICT integration in English?
   - What type of skills do you have in the ICT field?
   - Can you briefly comment on your positive experiences with regard to ICT integration?

2. What teaching strategies do teachers use when integrating ICT into English lessons?
   - How do you use ICT to support reading and writing in your lessons?
   - How does teaching using ICT differ from teaching without using ICT?
3. What types of ICT tools are mostly used in the teaching of reading and writing?
   - Which ICT tools do you normally use?
   - Do you think those tools make a significance difference with regard to the teaching of reading and writing? In what ways?

4. What challenges do teachers experience into the process of ICT integration?
   - Elaborate on challenges you face with regard to ICT integration as a primary teacher in the rural/urban school?
   - What type of assistance or training do you think will be most appropriate for you to effectively integrate ICT with minimal problems?

1. **Closing remarks:** Those are all the questions I have. Thank you for participating in this discussion.
Appendix B

Instrument title: Observation Guide

Background

The researcher carried out nonparticipant observation which took place during lesson presentations. In nonparticipation observation the researcher observes and records behaviours but does not interact or participate in the life of the setting under study (Gay, Mills and Airasian, 2009).

Purpose

The purpose of the observation was to explore challenges faced by English teachers in integrating Information Communication and Technology (ICT) in the teaching of
reading and writing in primary schools. These were the four main questions which the observer tried to answer:

1. What ICT skills do English teachers at primary schools have?
2. What teaching strategies do teachers use when integrating ICT into English lessons?
3. What type of ICT tools are mostly used in the teaching of reading and writing?
4. What challenges do teachers experience into the process of ICT integration?

Observations

Date:

Observer’s name:

<table>
<thead>
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<th>Theme and Topic</th>
<th>Comments:</th>
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</thead>
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<td>Comments:</td>
</tr>
<tr>
<td>Instructions given</td>
<td>Comments:</td>
</tr>
<tr>
<td>Type of activities</td>
<td>Comments:</td>
</tr>
<tr>
<td>Placement of equipments/ Physical setting</td>
<td>Comments:</td>
</tr>
<tr>
<td>Role of teacher</td>
<td>Comments:</td>
</tr>
<tr>
<td>Teaching strategies used</td>
<td>Comments:</td>
</tr>
<tr>
<td>Interactional setting</td>
<td>Comments:</td>
</tr>
<tr>
<td>How did the use of ICT support the learning process (reading and writing?)</td>
<td>Comments:</td>
</tr>
<tr>
<td>Do learners appear more motivated, engaged, or better prepared?</td>
<td>Comments:</td>
</tr>
<tr>
<td>Challenges observed</td>
<td>Comments:</td>
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</tbody>
</table>

**Appendix C**

Permission letter to the Permanent Secretary of Education.
01 September 2010

TO WHOM IT MAY CONCERN: INTRODUCING MS ESTER NUUYOMA

This is to introduce Ms Ester Nuuyoma again. Ms Nuuyoma is an M. Ed (Literacy and Learning) student at the University of Namibia. She is at the stage where she is collecting data from schools in the Ministry of Education. She was given permission to collect data in the Omusati Region. However, preliminary data analysis necessitated her to do a comparative study of schools in rural and urban areas, hence this letter requesting your good office to extend her permission to include the Komas Region. She intends to collect data at four primary schools in the Komas Region.

Her study is about the integration of ICT in teaching. I find this topic to be of paramount important especially at this time when we are moving in the direction of using ICT in schools. It is my hope that she will, upon completion of her study, make available to the Ministry of Education, a copy of her report so as to share her findings with the respondents and other stakeholders in the education sector.

I hope you will consider her application favorably.

Thank you.

Dr. J. Mushaandja

Head: Department of Educational Foundations and Management

Appendix D

Reply letter to conduct research from the Permanent Secretary of Education.
Ms Ester Nuyoooma
A. Shipena Secondary School
P/Bag 13320
WINDHOEK

For Attention: Identified School Principals

MS ESTER NYOOMA: REQUEST FOR PERMISSION TO CARRY OUT A RESEARCH STUDY IN FOUR (4) SCHOOLS AT KOMAS REGION.

1. Ms Nuyoooma, a teacher at A. Shipena Secondary School, has approached my office to request permission to conduct a research study in four unidentified schools at Khomas Region, in fulfilment of the requirements for an M.Ed (literacy and Learning) degree at UNAM.

2. It has always been the conviction of this Ministry that the teaching and learning in schools should not be disrupted whatsoever owing to individual, community or organizational activities, including carrying out research.

3. It is always crucial to have the input of the school principal in mapping out the modalities to ensure that disruptions of teaching and learning activities do not take place in the process of carrying out a research study.

4. Therefore, permission to carry out a research study in four schools is thus hereby conditionally granted pending the result of your discussions with school principals.

Yours in Education

Mr A. ILUKENA
PERMANENT SECRETARY

Cc – The Regional Education Director: Khomas Region
Appendix E

Reply letter from the Permanent Secretary to the Postgraduate Committee

REPUBLIC OF NAMIBIA
MINISTRY OF EDUCATION

Dr. J. Mushaandja
Member: Postgraduate Committee
Faculty of Education
University of Namibia
Private Bag 13301
WINDHOEK

Dr. Mushaandja

REQUEST TO DO RESEARCH IN OMUSATI REGION: MS. ESTHER NUUYOMA

Your letter dated 08 July 2010 refers.

Permission is hereby granted for Ms. Nuuyoma to conduct her research, provided that she consults Ms. E. Nghipondoka, Director of Education: Omusati Region, before she starts with the research and that there will be no interruption of teaching and learning at the schools she intends to visit.

Yours truly,

P. NGHWETE
ACTING PERMANENT SECRETARY

cc Ms. E. Nghipondoka, Director of Education: Omusati Region
Ms. E. Nuuyoma

All official correspondence must be addressed to the Permanent Secretary