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A study of the Junior Secondary School Teachers and Learners' perceptions and challenges that contribute to the implementation of Computer Practice into schools in the Khomas, Omaheke and Otjozondjupa Education Regions.

A thesis submitted in partial fulfillment of the requirements of the Masters Degree (M.Ed) in Education.

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June 2006

A STUDY OF THE JUNIOR SECONDARY TEACHERS AND LEARNERS' PERCEPTION AND CHALLENGES THAT CONTRIBUTE TO THE IMPLEMENTATION OF COMPUTER PRACTICE INTO SCHOOLS IN THE KHOMAS, OMAHEKE AND ONDJOZONDJUPA EDUCATION REGIONS

M.ED DEGREE

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APPROVAL PAGE

This thesis has been examined and is approved as meeting the required standard for partial fulfillment of the requirements for the degree of Master of Education.

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4. _____ _____

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STATEMENT OF ORIGINALITY

The author at the University of Namibia completed the research work contained in this study from 2005 – 2006. It is the original work of the author except where references are made and neither has it been nor will it be submitted for an award of any other University.

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(Signature) (Date)

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DEDICATION

This thesis is dedicated to my beloved wife Maureen Kamerika for her love, kindness, and generosity throughout my studies including my three loving sons Amuzembi, Kakunamua and Hitjiua.

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LIST OF ACRONYMS

CP – Computer Practice

IT – Information Technology

ICT – Information & Communication Technology

JSC – Junior Secondary Certificate

JSE – Junior Secondary Education

KDD – Knowledge Driven Development

MBESC – Ministry of Basic Education, Sport & Culture

MHETEC – Ministry of Higher Education, Training & Employment Creation

MOE – Ministry of Education

NIED – National Institute for Educational Development

UNAM – University of Namibia

SPSS – Statistical Package for Social Sciences

ABSTRACT

The application of computers has become an integral part of the present-day society, including Namibia, to the extent that the skill to use a computer is a major requirement for many vocations and it contributes to efficiency in many others. The introduction of computers in education is a large-scale complex innovation in which many obstacles need to be overcome before successful implementation can take place (Plomp & Pelgrum, 1993). The MBESC (1999: 2) introduced the Computer Practice subject at Junior secondary school level in 1999. Some of the major reasons for introducing it included; to develop in students an appreciation of the range and power of computer applications, to foster an interest in, enjoyment of, and confidence about computing, to foster a desire to use computers within other interests etc. However, literature regarding the implementation of the subject indicated that there exists a number of challenges such as lack of adequate physical facilities, for example; computers to support teaching and learning in the schools (O' Donnel, 1996).

The main aim of the study was to find out the perceptions of teachers and learners with regards to the implementation of Computer Practice in schools. Firstly, the study focused on a number of issues to be investigated, inter alia, the teachers' views on computer use and their computer skills; their perceptions with respect to the implementation of Computer Practice as a subject; the challenges they faced in improving the quality of teaching. Secondly, it also addressed a number of issues to be investigated such as the learners' views on computer use, skills and competencies; their perceptions with regards to the implementation of Computer Practice as a subject; the challenges they faced in improving learning. In addition, both the teachers and learners were also asked to suggest steps that could be used to improve the curriculum of the subject in schools of the Khomas, Omaheke and Otjozondjupa Education Regions.

CHAPTER ONE

INTRODUCTION

Background of the study

Since independence in 1990, Namibia has managed to distinguish herself as a country with an enabling environment for development in general, and for Knowledge Driven Development (KDD) in particular. Despite an enabling environment and good growth prospects, the country has consistently experienced difficulties in meeting its development goals and set performance targets (The World Bank, 2005). To better respond to these challenges, the government recently undertook to dramatically reform the national development strategy. The reform agenda is encapsulated in a long-term vision for national development – Vision 2030 (The World Bank, 2005). According to The World Bank report (2005: xiii);

> "a key aspiration of Vision 2030 is to rapidly transform Namibia into a high-income, and a more equitable, Knowledge Economy (KE). As a starting point, a knowledge-based Namibian economy would be manifested in an enhanced capacity to apply knowledge and technology to increase the range, and value of products derived from the country's rich natural resources ".

The MBESC (1999) implemented the Computer Practice subject at Junior secondary school level in 1999. The subject Computer Practice (CP) in Namibia was designed to provide vocational orientation and training in this important domain and is in itself a complete course taught in Junior Secondary Schools (MBESC, 1999). Some aims of the Computer Practice course are;

- to develop in students an appreciation of the range and power of computer applications.
- to foster an interest in, enjoyment of and confidence about computing.

- to develop students' ability to solve problems using computing techniques, and
- to foster a desire to use computers within other interests.

It is also a suitable foundation course for the subject Computer Studies in the Senior Secondary Phase (SSP) (MBESC, 1999: 2). According to MBESC (1996: 16) learning about technology includes applying knowledge of how to do work more efficiently and effectively using tools, materials and processes. It is a specific way of solving problems through planning, design, realization and evaluation. Learners develop the necessary knowledge, skills and attitudes to perform tasks using appropriate technology (MBESC, 1996).

The application of computers has became an integral part of the present-day world, including Namibia, to the extent that the skill to use a computer is a major requirement for many vocations and contributes to efficiency in many others. The introduction of computers in education was a large-scale and complex innovation in which many obstacles needed to be overcome before a successful implementation could take place (Plomp & Pelgrum, 1993).

Information and Communications Technology (ICT) in the new millennium has made people become a more technologically based society. It has had a further impact on education by requiring an urgent shift from the traditional-view of education towards the "reconstructivist concept of education" at higher institutions of learning. Teacher training institutions are required to equip student teachers with knowledge and skills in handling the new technological developments (Iipinge, 2004). ICT is a powerful tool if applied in education. It significantly extends what people can do in schools and as a learning tool in classrooms it is particularly effective. It can make learning easier and more attractive; for example, a resource for learning about animals could include written information about their habitat and pictures.

It supports open, independent and flexible learning (Crawford, 1997). It is also more than just another teaching tool. Its potential for improving the quality and standards of pupils' education is significant. Equally, its potential is considerable for supporting teachers both in their everyday classroom role and in their continuing training and development (Ager, 1998).

According to Gooden (1996) the electronic world provides profoundly new challenges to education that both confound all other problems and provides hope for solving them. Schools should incorporate computers into everyday functioning and prepare students to live in an adult world where computers are pervasive. Scott & Bell (1987) noted that in rapidly changing society, there is a growing awareness of the need to educate children for a different world. There is need to ensure that the children are prepared to deal with a technological-based society whose directions can only be guessed at. By educating them in being computer-literate individuals, they can be prepared for the difficult decisions they will need to make concerning the use, role and potential of computers.

The use of computers in education and training has been greatly influenced by the history of their introduction into universities, colleges and industry, and by their use in applications other than education and training. Many of the earliest recognizable computers are developed and operates in universities on both sides of the Atlantic (Rushby, 1997). Since those early days, the computer has grown in importance as a research tool so that now it would be unthinkable, in many subject areas, to carry out research work without access to a computer. The effective, large-scale use of computers requires a cadre of trained staff to design and support computing systems and to help potential users who might not be skilled programmers. At secondary school level, where the research aspect was absent, computer education was dominant (Rushby, 1997).

Clyde (1997) noted that all members of the school community have information needs, many of which can be met through the library and through the use of resources and services on the Internet. School learners need information related to their school subjects, their hobbies and special interests; their sporting, cultural and recreational activities; vocational preparation and personal development. The learners need access to a range of recreational materials and resources, including books, magazines, games and discussion forums. Teachers need information related to new developments in education and teaching generally and to their particular teaching areas and academic interests, as well as information about current research and important projects in these fields. The teachers also need information and resources to support their teaching, classroom activities and any extra-curricular activities that they organize within the school's program by having access to a computer.

Teachers play a significant role in developing knowledge and skills, which are crucial in the social and economic development of Namibia as a country. In a rapidly changing technological world, skills in retrieving and using information accessed through technologies become a demand in daily lives of teachers and learners. When teachers have access to their own computers, they rapidly become competent and confident at utilizing different technologies. Teachers' preparation in using and infusing technology become a crucial aspect of the teacher education curricula for both pre- and in-service teacher education (MBESC, 2004). According to McLoughlin (1998), a number of theorists have commented that computers are used in a way that is 'decoupled from the mainstream of classroom life'. This meant that computers are often seen by teachers as devices for saving time and increasing the efficiency of teaching and learning.

Statement of the problem

The MBESC (1999: 2) introduced the Computer Practice subject at Junior secondary school level in 1999. Some of the major reasons for introducing it included; to develop in students an appreciation of the range and power of computer applications, to foster an interest in, enjoyment of, and confidence about computing, to develop students' ability to solve problems using computing techniques, and to foster a desire to use computers within other interests. To date the subject is taught in 37 out of 269 schools in Namibia (MOE, 2006). However, literature regarding the implementation of the subject indicated that there exists a number of problems such as lack of adequate computers to support teaching and learning (O' Donnell, 1996). Therefore, the purpose of this study was to find out the teachers' and learners' perceptions of the process of implementation as well as the content of the Computer Practice subject at the Junior secondary school level in the Khomas, Omaheke and Otjozondjupa Education Regions.

Questions of the study

Answers to the following questions were sought:

1) What are the teachers' perceptions of the implementation of Computer Practice subject in schools?
2) What are the learners' perceptions of the implementation of Computer Practice subject in schools?
3) What challenges are perceived by teachers as influencing their performance in teaching Computer Practice in schools?
4) What challenges are perceived by learners as influencing their performance in learning Computer Practice in schools?

5) Which skills and competencies should teachers have to be able to teach Computer Practice effectively in schools?
6) Which pre-requisite skills and competencies should learners have to be able to learn Computer Practice effectively in schools?

Significance of the study

It was important to find out the perceptions of Junior Secondary School teachers and grade 10 learners with regard to the implementation of Computer Practice in schools because it could provide information on possible shortcomings and how they would be tackled to help improve the quality of teaching and learning of Computer Practice in schools. The study would identify the challenges affecting the teachers' and learners' performance in Computer Practice and eliminating them. The findings would help in implementing the current ICT policy for education and Computer Practice syllabus of Junior Secondary Education (JSE) in Namibia. Finally, it might also help to determine ways and means of helping curriculum developers, teachers and learners meet the challenges of Computer Practice Syllabus in terms of curriculum content.

Limitations of the study

The following constraints were encountered in this study:

There was limited time to involve all the teachers and grade 10 learners because of the preparations of final year examinations. The study was therefore confined to 16 Junior Secondary Schools in the Khomas, Omaheke, and Otjozondjupa Education Regions due to the above-mentioned constraints. The time available at the researcher's disposal was limited to collect more information for the study. Financial constraints to cover all the schools because of the vast geographical size of the region also hampered the thorough investigation

of the problem. The main reason was that the funds allocated for this study were not adequate for transport to many rural and urban schools that offered Computer Practice in the country.

Delimitations of the study

The study was confined to Junior Secondary School teachers who taught Computer Practice and grade 10 learners who were studying Computer Practice as an elective subject in the Khomas, Omaheke, and Otjozondjupa Education Regions.

DEFINITION OF TERMS

Perception: The acceptance of sensory stimuli by the teacher or learner, given meaning based primarily on past experience (Forcier, 1996).

Implementation: The second phase of the Plan, Implementation and Evaluation model. Focus is on the use of instructional materials and activities designed to help learners achieve the objectives specified in the instructional or lesson plan (Newby et al., 1996).

Computer literacy: It will be taken to mean the knowledge required with respect to the uses, applications, limitations, and implications of computers for society.

Curriculum: The term 'curriculum' denotes the content and process of learning in schools (the intended and implemented curriculum) as well as the outcomes of learning (the attained curriculum) (Forcier, 1996).

Well-resourced computer laboratory: A term used to describe physical facility with full access to equipment (e.g. computers, monitors, printers (hardware), software, workstations (network points), etc.).

Average-resourced computer laboratory: A term used to describe physical facility with reasonable access to equipment (e. g. hardware and network points only, etc.).

Poorly-resourced computer laboratory: A term used to describe physical facility which is poorly equipped and no access (e.g. no hardware and software or network points available, etc.).

Information & Communication Technology (ICT): Will mean all the technologies used for the handling of- and communication of information and their use specifically in education; e.g. computers, audio visual systems, broadcast receiving systems and telecommunication systems, media such as compact discs and videodiscs, microcomputer-based laboratories, the internet, virtual learning centers, local and wide area networks (wired and wireless), instructional software, print media, educational television, voice mail, e-mail, satellite communication, Video Cassettes Recorders, conventional and interactive radio.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter gives an overview of the views and opinions of scholars on issues pertaining to computers in education, the perceptions of teachers and learners, their skills and competencies as well as the challenges or obstacles encountered with regards to the implementation of Computer Practice in schools.

Concepts of computers in education

Namibia has recognized the importance of ICT to the development of the country. ICT has a role to play in education both directly as a subject, and indirectly as a technology to assist in education and the management of education within the Ministry of Basic Education Sport and Culture (MBESC, 2004). According to The World Bank Report (2005: 35), preparatory work is underway to integrate ICTs into the general education curriculum. A "Policy for Information Technology in Education in Namibia" was drafted in 1995, revised in 2000 and ultimately launched in 2005 (The World Bank, 2005). Objectives for ICTs in education have been articulated and implementation targets for the immediate period (2005), intermediate period (2010), and long-term (2015) have been articulated. However, there is little evidence of readiness to attain the objectives set for 2005. The broad content for ICTs has been articulated as comprising basic information science, computer literacy, computer practice and computer studies in primary and secondary schools (The World Bank, 2005).

Many analyses have been done of motives for nations' committing resources and formulating policy for ICT. Hawkridge (1991), as cited in Collis et al (1996), noted the following six major motivations;

1) The social rationale: Computers are important in society, thus learners should be prepared to deal with them;
2) The vocational rationale: Learners should use computers to prepare for future jobs;
3) The pedagogical rationale: Computers can improve instruction in traditional subject areas;
4) The catalytic rationale: Computers will set off wide-ranging changes in the educational system itself and change the nature of teaching and learning;
5) The IT industry rationale: Supporting computers in schools will help build up a market for a country's internal hardware and software production capability; and
6) The cost-effectiveness rationale: Computers can replace teachers or some of the costs of teachers. Each of these motivations calls for some kind of measure of success, or prediction of future success and should be taken into cognizance when implementing a curriculum in schools (p. 5).

According to Muffoletto (2001) technology used should be seen as simply a tool for education; a help, an option, an opportunity. Now, more and more, if an educator doesn't use modern technology in a classroom, school or district, he or she is seen as behind the times and uncaring of students. This is true even if there is no agreement on what outcomes are important for learners, or little dependable evidence that a given technology in education is effective in bringing about improved performance in primary and secondary schools.

Computers are being used increasingly in the world of work and learning, and being accepted more and more as an integral part of life. It is also generally agreed that computers, especially in configuration with audio and video, have great potential to help improve education. The potential for benefits include providing tools for more individualization in learning, implementing curricular reforms and increasing the instructional productivity of schools. In order to realize these benefits of computers and computer-mediated tools into classroom practice, many governments and organizations have supported the introduction of computers in education over the past two decades (Brummelhuis ten, 1995).

Sewell (1990: 28) indicated that the use of computers would result in improved performance in specific curriculum areas. This approach can be termed a 'product' orientation with an emphasis on the products of curriculum activities, for example, performance in mathematics, English, science, foreign languages, spelling, geography, etc. Applications in this context deal mainly with school curricula as they currently exist, and much software has emerged which targets particular curriculum areas. Use of computers in such a context involves making teaching as it presently exists easier, faster or more convenient. In addition to specific subject areas of Computer Practice, this can also involve automated testing, assessment and administration.

Teachers' perceptions of the implementation of Computer Practice in the schools

In the early days of computer development, it was thought that computers would eventually replace teachers, and this may have been a reason for the skepticism with which many teachers initially viewed computers. However, it quickly became clear that by themselves computers were unable to extend and develop children's education. The fact that computers, or rather the software that runs them, are able to provide endless patient support and feedback to children who are using them doesn't mean that large groups of children would like to sit in front of a screen for long periods of time. Excellent teachers are still needed who, by their infectious enthusiasm, make people change the way they think about a subject (Ager, 2000).

Mawson (1999) noted that teachers' perceptions of technology were closely linked with students' life experiences, although courses and activities undertaken during their teacher training had an influence on their perceptions of technology. Gooler (1986) argued that as computers increasingly become prevalent in primary and secondary schools, a disturbing trend is being observed by classroom teachers, namely, the differential use of computers by

girls and boys. According to Gooler (1986) the tendency of boys to be more involved in the use of computers is particularly ironic, given that some of the most prominent computer 'pioneers' were women. In spite of this early involvement of women in computers, today computers appear to be viewed as a primarily male domain. In advertising for computers, few women are shown in pictures, and when females are present, usually they are depicted in an'assisting' role (Gooler, 1986).

Carter (1987) as cited in Beynon & Mackay (1993), noted that female teachers differed sharply in their attitudes towards how computers should be used in schools, how computers should be allocated and how female teachers might serve as role models for female pupils. He stated that female teachers also tended to have egalitarian views, believing that computers could be used to teach any subject and that they should be available to all learners in schools.

Teaching about computers is to a certain extent a necessary prerequisite to teaching with them according to Simonson & Thompson (1997). This is because computer literacy, the primary thrust of a programme that teaches about computers, has become an important topic for schools. According to Simonson & Thompson (1997) generally, curriculum plans that teach about computers have a scope and sequence that begin in the primary school, continuing until secondary school graduation and therefore most educators' opinions are that teaching and learning with computers is ultimately more important to education than teaching about them. Once computer literacy competencies are learned, however, it is easier to use the computer, especially when new computer hardware and software become available (Simonson & Thompson, 1997).

Nieder & Frey (1992) as cited in Plomp & Pelgrum (1993), hypothesized that the location of computers may be a complicating factor in accessing them by teachers and learners. They stated that if school computers are available only in specially designed rooms, teachers are compelled to do their teaching in these rooms. This is more likely to preclude a short sequence of instruction involving computers than if computers are on the spot in the classroom. One may expect that the use of computers is enhanced if computers are located inside, instead of outside classrooms (for instance, in computer labs). One may also expect that the location of computers is related to how they are used. If they are located in classrooms, the number of computers is usually low (about 2-3 on the average) and, consequently, only a few students at a time will be able to use the available computers.

Mcffarlane (1997) stated that computers have the potential of being immensely powerful influence in the classroom, making new things possible in new ways, offering new opportunities and making new demands on both teachers and learners. But while few would dispute the power and efficiency of computers to store and manipulate information, it is quite another matter to claim, as advocates do, that their introduction will enhance the quality of learners' work, their learning and their motivation. Research into the educational benefits of using computers as an integral part of the curriculum has revealed a number of interesting points such as; learning time is reduced, retention time is increased, motivation is increased and that children's internal responsibility toward their own education is increased. It was also suggested that computers are often seen by teachers as devices for saving time, increasing the efficiency of teaching and learning (Scott & Bell, 1987).

Squires & Mcdougall (1994: 1), observed that all teachers' training, whether at the pre-service or the in-service stage, should include training in assessing and selecting software.

This should be part of the in-depth training in the pedagogical uses of the information technologies, which teachers need to supplement the introductory training they usually receive in the operation of microcomputers and in their classroom use. If teachers were given such training, they would be able to convert the potential of computer-based learning into the actuality of instructional use that would meet their objectives and curriculum needs.

The computer obviously plays a vital role in any process such as processing and dissemination of information since it is a multi-purpose device. It is pre-eminently the medium through which data are collected, processed and distributed. Virtually every sector of society such as the military, medical and transport systems as well as telecommunication, including education is dependent upon the computer for its efficient functioning (Garbers & De Lange, 1998). Therefore, Computer Practice as a subject in Junior secondary schools will have a positive impact on education in Namibia if implemented effectively in the schools curriculum.

According to Brummelhuis ten (1995), one of the important educational issues facing almost all nations around the world concerns the development, use and impact of new technologies. Perhaps one of the most vital developments in this context is the personal or micro-computer, a device that is altering many lives at home, as well as at work and in schools. In order to find out whether the worldwide efforts of introducing computers in education meet the promising benefits, it is necessary to record the different types of realities of implementation in schools.

One of the problems with a computer is that it is so versatile a tool that it is not always easy to know exactly how it is being used. Somekh (1997), as cited in Ager (2000), identifies three views which teachers can take when using computers. Some view the computer as a *tutor*,

with the expectation that a child will sit down in front of the machine and be 'taught' by it, with no further intervention from the teacher until the work is finished. Others view the computer as a *neutral tool* in that children will be able to use it to complete tasks that they may have originally done with pencil and paper. The third group sees the computer as a *cognitive tool* that can be used to enhance children's learning by allowing them to do things that are only realistically possible by using a computer.

Learners' perceptions of the implementation of Computer Practice in the schools

Forcier (1996) noted that equal participation of boys and girls in computer literacy and application activities in the primary and junior secondary grades was notable. Girls and boys appear to be equally enthusiastic when it comes to using the computer. As learners move into senior secondary school, stereotypes exert themselves. Girls continue to refine word processing skills and other business skills while boys overwhelmingly populate the computer science classes. Many boys spend countless hours playing video-games as pre-adolescents and gravitate toward the use of computers while females tend not to be drawn to this type of software and therefore, spend less time at the computer as an enjoyable diversion. According to MBEC (1996: 27) learners respond best when they are interested in the things they are learning. There, it is the teachers' responsibility to find out what the learners are interested in, and to plan learning activities which cater for those interests and which are meaningful to the learner.

According to Lawler (1997: 45), the people who should determine what computer experiences are offered to children should be the children themselves, their parents or their teachers or others who are close to the children and share their experiences – hopefully,

sensitive, caring instructors with a progressive commitment to what is best for the children. Computers and their languages should be accessible to such people, easy for them to use as a casual, creative medium. If they are not so, the children of the world will not be properly served.

Teachers' perceptions of the challenges facing them in improving the teaching of Computer Practice in the schools

The computers, like most other technologies, are widely used throughout society, in schools and by teachers. If they are to be relevant to society, Namibia's teachers and learners should understand their variety of applications to make Computer Practice easier in schools. For schools and teachers to take full advantage of the potential of computer-related technologies, more time for training should be allotted for teachers to learn to use the technologies (Simonson & Thompson, 1997) in order to implement the Junior Secondary Education syllabus effectively.

The computer has become part and parcel of one's everyday existence. Without doubt the present and future generations will increasingly become dependent upon, and be involved with, the use and application of computers in an ever-increasing number of fields (Garbers & De Lange, 1998) such as education and training. According to Brummelhuis ten & Plomp (1993), it is imperative to assess how computers are used in education; to study the effects and changes that are taking place over time; and to look at how different material conditions, such as hardware and or software availability as well as immaterial conditions (such as teacher training facilities or support structures) affect the implementation of the use of computers by teachers and learners especially in schools. Effective teaching and learning are

closely linked to the use of materials (e.g. books, posters, charts, etc.) and media (e.g. radio, newspaper, audio cassettes, etc.). The teachers must select and develop the most appropriate materials and media for the learners to enrich and reinforce learning and assist them in achieving the learning objectives (MBESC, 1996).

Hope (1998) as cited in Iipinge (2004), mentioned obstacles to teachers using computers and related technologies thus:

> Schools' leaders neglect to identify the problem(s) to be addressed by the introduction of technology in schools; failure of school management to create a vision of how technology transforms teaching; teachers vested interest in other pedagogies to accomplish teaching and learning objectives; teachers' lack of access to the technology they are expected to integrate into practice; and failure of change agents to articulate the advantages technology has over what teachers presently do to accomplish their work (p. 4).

According to The World Bank Report (2005), there are no statistics on the number of teachers who are qualified in ICT-related subjects in Namibia. Five years ago, only seven teachers were recorded as qualified to teach Computer Practice at Junior Secondary level and Computer Studies at Senior Secondary level in Namibia. The Ministry of Education (MOE), the National Institute For Educational Development (NIED), and donors have proposed a Computer Assisted Teacher Training Project. Among others, the project will provide practicing teachers access to computer-based training. More support for the training of teachers is envisaged under a partnership for the learning initiative of the government and Microsoft (The World Bank, 2005).

According to Mcffarlane (1997), the schools might look to newly trained teachers to bring them up to date with computer use. However, data on the competence and confidence of

trainee teachers suggest this cannot be relied upon. Youth or recent training is no guarantee of classroom expertise with computers, any more than maturity and experience preclude it. With the increase in time student teachers spend in schools, trainees look increasingly to qualified teachers for advice on the use of computers in the classroom.

Learners' perceptions of the challenges facing them in improving the learning of Computer Practice in the schools

Garbers & De Lange (1998) found that the implementation of an educational medium simply on the basis of its availability or the wish to make room for it, can only hope for limited success. It is therefore, essential that challenges in education, which can best be satisfied or prevented through the use of the computers, should be identified with a view to justifying their use in education. They stated that any rationale for the use of the computer in education should be based on the realization that there are needs in modern society and education, which necessitate the implementation of the computer in education.

Blomeyer Jr. & Martin (1991) found that over the past 25 years there has been much discussion about the advantages and disadvantages of using computers with children in the classroom setting. Educators are divided into two camps: the computer enthusiasts and the skeptics. Armed with glowing anecdotal evidence of great intellectual strides made by learners with computers, the enthusiasts have lobbied for the allocation of more and more resources for computer-related instruction and management in education. The skeptics, on the other hand continue to demand hard evidence to show that putting learners in front of computers can increase the literacy rate, raise test scores, improve student retention, and indeed, give the overall boost to the ailing educational institutions that are being hyped by the vendors of the new instructional technologies.

Forcier (1996) found that schools in the United States of America have reasonably high ratio of computers to learners. The computers are located in regular classrooms, libraries, media centers, and open computer laboratories available before, during and after school hours. Learners can search for information, practice skills and concepts, and create their own products. However, because of a scarcity of resources, apathy toward technology, or lack of leadership, other schools have a paucity of computers and a poor selection of software. According to The World Bank Report (2005) in Namibia there is a low ratio of computers to learners in most primary and secondary schools due to lack of financial support from private and public stakeholders. This ultimately impacts on the quality of teaching from the teachers' side and as well as poor performance from the learners' side in terms of access to computers.

Pelgrum & Law (2003: 7) observed that the implementation and integration of computers and technology into schools is an expensive and sometimes complex process. It requires all the necessary equipment, competent staff to get it up and running, technical support and teaching of others to use it correctly and effectively. However, its advantages are evident, and the benefits that it can bring to schools and their pupils are significant enough to make the introduction of technology into classrooms one of the priorities of educational planners in both developed and developing countries, although the challenges and obstacles that may need to be overcome in both of these settings can be quite different.

CHAPTER THREE

METHODOLOGY

In this chapter, the research design, population, sample and sampling procedures, the data collection instruments, methods used to collect data from the sample and data analysis procedures are described.

Research design

The study investigated the perceptions of Junior Secondary School teachers and grade 10 learners with regards to the implementation of Computer Practice into schools. The study made use of the qualitative method in order to gain understanding and insight into the world of the research participants (Mouton, 2001). This was done to obtain the required written information from the respondents' point of view in terms of their perceptions and challenges that contributed to the implementation of Computer Practice in schools. However, a quantitative method was also employed which was aimed at providing a broad overview of a representative sample of a large population (Mouton, 2001). In this regard, the questionnaires were used to compare the number of respondents' responses on their perceptions and challenges that contributed to the implementation of Computer Practice as a subject as well.

Population

The target population for the study consisted of 16 secondary schools, all 16 teachers who taught Computer Practice as well as all 410 learners who were taking this subject in Junior Secondary schools in the Khomas, Omaheke, and Otjozondjupa Education Regions. The reason for using this population was that all the three education regions had 16 schools,

which offered Computer Practice in 2004 and therefore was a good representative of all the teachers and learners in the country who were doing Computer Practice (MBESC, 2004).

Sample & sampling procedures

The number of selected schools, regions, teachers as well as the learners are given in Table 1.

Table 1: The number of selected schools, education regions, teachers and learners.

Schools	Regions	Teachers	Learners
Winnie du Plessis SSS	Omaheke	1	10
Donatus JSS	Otjozondjupa	1	10
A. Shipena SSS	Khomas	1	10
ST. Joseph RC high school	Khomas	1	10
Centuarus high school	Khomas	1	10
Windhoek high school	Khomas	1	10
Delta SSS	Khomas	1	10
Jan Möhr high school	Khomas	1	10
Khomas high school	Khomas	1	10
Concordia College	Khomas	1	10
Total	**3**	**10**	**100**

A total sample size of 10 teachers at 10 selected secondary schools out of 16 schools teaching Computer Practice in Khomas, Omaheke, and Otjozondjupa Education Regions were selected purposefully based on their location i.e. urban or semi-urban schools. This was due to the fact that only one teacher was responsible for teaching Computer Practice at more than one grade

levels in all the schools. One school namely; Winnie Du Plessiss SS school was selected from the Omaheke region and Donatus JS school from the Otjiozondjupa region because only those schools had 49 and 20 learners respectively who were studying Computer Practice in these regions. The remaining schools were selected from the Khomas region. Altogether 11 schools in this region offered this subject and had also altogether 341 learners (MOE, 2006). In the Khomas region the schools were selected using the following guidelines; two senior secondary schools namely A. Shipena SS school and St. Joseph RC high school were from the formerly disadvantaged schools in Katutura and areas around Windhoek respectively because of their historical background and also in terms of their location. The rest of the advantaged schools were selected from the whole of the Khomas region. All teachers from the 10 selected schools were involved in the study because these schools had only one teacher who taught Computer Practice. Ten learners from each one of the 10 grade 10 classes were selected randomly for the study, based on the number of learners in each grade at the identified school. The respondents were selected with the aim to have representative samples. The study targeted both male and female teachers and learners with different ages from both semi-urban and urban schools in the Khomas, Omaheke, and Otjozondjupa Education Regions. A total of 100 learners formed the sample for this study (See table 1).

In order to get the selected schools, the researcher obtained the list of secondary schools from the regional head offices in all three education regions. The principals of the selected schools helped the researcher to identify the subject teachers. All the 10 teachers of the selected schools were involved in administering the instrument. A list of all the schools offering this subject in the Khomas, Omaheke, and Otjozondjupa Education Regions is given in Appendix C.

Research instruments

The instruments for this study were two structured questionnaires, one for teachers and one for learners, which were developed by the researcher. The researcher designed these questionnaires because part of good research design concerns making sure that the questionnaire design addresses the needs of the study. The questionnaire is also a widely used and useful instrument for collecting survey information, providing structured and often numerical data (Mouton, 2001).

Both questionnaires consisted of Likert-type scale, open ended and closed ended questions, which were used to collect the data from the respondents. The teachers' questionnaire was administered to all 10 teachers in the selected Secondary Schools. It consisted of four sections comprising 18 questions. This questionnaire dealt with the biographical information of the teachers studied in terms of age, sex, teaching grades, general teaching experience, teaching Computer Practice experience, teaching qualifications, teachers training institutions, whether they were trained as Computer Practice teachers initially or not and how they acquired their Computer Practice skills, their computer use and skills, their perceptions, their challenges faced with regards to the implementation of Computer Practice as a subject as well as suggestions made to improve the curriculum of the subject in schools.

The learners' questionnaire was administered to 100 learners. It consisted of four sections also comprising 10 questions. It sought biographical data of the learners studied in terms of age, sex and name of their schools, their computer use, skills and competencies, their perceptions, the challenges faced with regards to the implementation of Computer Practice and suggestions made to improve the curriculum of the subject in schools. The questionnaires were developed for quantitative measures of teachers' and learners' perceptions of their

experiences, with a series of statements using a four point Likert-type scale and were expected to rate the statements as: strongly agree (a value of 1), agree (2), disagree (3) and strongly disagree (4). Qualitative measures used open ended and closed questions of teachers' and learners' perceptions with regards to the implementation of Computer Practice as a subject in schools. The two questionnaires are given in Appendix A and B respectively.

The content validity of the instruments was established by having the questionnaires reviewed and completed by the three supervisors at UNAM. Their comments were incorporated into each questionnaire before its administration.

Data collection procedures

A letter was obtained from the Permanent Secretary of the Ministry of Education to permit the researcher to conduct the research in the schools. This letter was taken to the principals of the sampled schools, and both the teachers and learners were briefed on the purpose and procedure of the study. The structured questionnaires were distributed personally by the researcher to all the respondents in their classrooms with the help of the subject teacher. It was also administered during class time. After the respondents had completed the questionnaires for about 15 minutes, the researcher collected them personally. The data were collected using two structured questionnaires developed by the researcher.

Data analysis procedures

The questionnaires were coded and analyzed using the Statistical Package for Social Sciences (SPSS) package. Frequency tables and pie charts using percentages were used for each component of the questionnaires. Pictures of different places of computer classrooms or computer laboratories were also taken during data collection period in the sample for

comparison purposes. The open-ended questions were analyzed through the recording of all responses to individual questionnaire items. The responses to the respondents' questionnaires were then compared to one another to obtain the relevant information. Categories were used in analyzing this part of the questionnaire.

CHAPTER FOUR

PRESENTATION AND DISCUSSION OF THE RESULTS

The analysis of the data obtained during the course of the study are presented in this chapter. The first questionnaire, being the main instrument for the teachers was used to collect information. It addressed their biographical data, their views on computer use and skills, their perceptions, challenges faced with regards to the implementation of Computer Practice and including their suggestions to improve the subject. While the second questionnaire, also being the main instrument for the learners was also used to collect information. It addressed their biographical data, their views on computer use, skills and competencies, their perceptions, challenges faced with regards to the implementation of Computer Practice and as well as their suggestions to improve the subject in the schools of the Khomas, Omaheke and Otjozondjupa Education Regions.

DEMOGRAPHIC CHARACTERISTICS OF THE TEACHERS

Teachers' ages by teaching experience

The responses with regards to the teachers' ages by teaching experience are given in Table 2.

Table 2: Teachers' ages by teaching experience (N=10)

Age intervals in years	Frequency (%)
18-25	2 (20)
26-33	2 (20)
34-41	5 (50)
Above 41	1 (10)
Total	**10 (100)**

Table 2 shows that 50% of the teachers were aged between 34-41 years, while 20% were aged between 18-25 and 26-33 years respectively. The majority of teachers who fell in the age group 34-41 could be said to have gained a lot of teaching experience. This could imply that since the implementation of Computer Practice into schools in 1999, not many qualified teachers have been trained to teach the subject in the secondary schools.

Teachers' sex

There were five male and five female teachers at the 10 selected schools.

Teachers' ages by sex

The teachers' responses with regards to their age by sex are given in Table 3.

Table 3: Teachers' ages and sex (N=10)

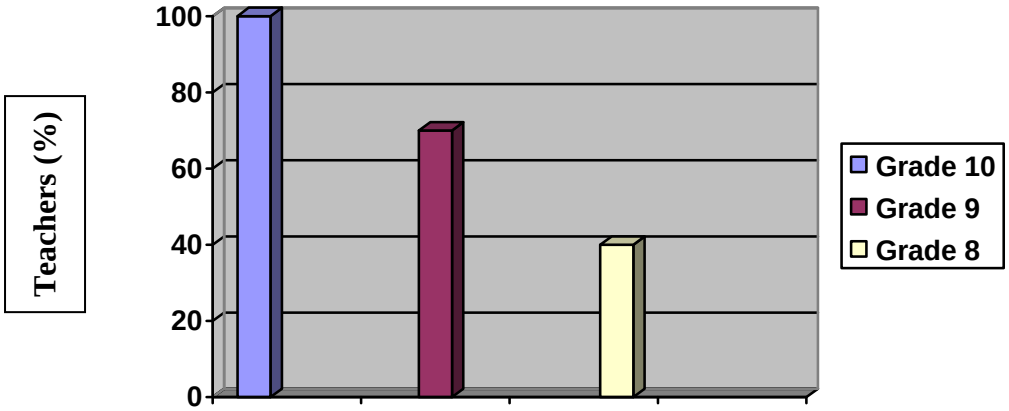
Age	Sex		Frequency (%)
	Male	Female	
18-25	2	----	2 (20)
26-33	----	2	2 (20)
34-41	2	3	5 (50)
Above 41	1	----	1 (10)
Total	**5**	**5**	**10 (100)**

Table 3 shows that 50% of the teachers were in the age category 34-41, three of them were female teachers and two were male teachers.

Teaching grades taught in schools

The teachers taught Computer Practice in the grades shown in Figure 1.

Figure 1: Computer Practice grades taught in schools (N=10)



Computer Practice grades taught in schools

Figure 1 shows that 100% of the teachers taught Computer Practice at grade 10 level in all their schools. Seventy percent of the same teachers taught the subject at grade 9 level, while 40% of the respondents also taught the subject at grade 8 level. This means that some of these teachers taught Computer Practice at both grade 9 & 10, while others taught the subject in grades 8, 9 & 10.

The teachers' ages by qualifications

Teachers' responses with respect to their age by qualifications are given in Table 4.

Table 4: Teachers' ages by qualifications (N=10)

AGE	Qualification				Frequency (%)
	Grad12 + 3yrs Dip.	Grad12 + 4yrs Deg.	Grad12 + Deg. PGDE	Others	
18-25	2	----	----	----	2 (20)
26-33	----	1	----	1	2 (20)
34-41	1	2	2	----	5 (50)
above 41	1	----	----	----	1 (10)
Total	**4**	**3**	**2**	**1**	**10 (100)**

Table 4 shows that most of the teachers had a professional qualification. Forty percent had grade 12 plus a 3 years teachers' diploma, 30% of them had grade 12 plus 4 years teachers' B.Ed Degree qualification, 20% had grade 12 plus a plain Degree and a Post Graduate Diploma in Education. Ten percent had a two years Master of Business Administration Degree and a one year Computer Training Course from the Institute of Technology in Windhoek. Two teachers had received their initial teacher training from the University of Namibia, two from the Windhoek College of Education, two from the Stellenboch University, one from the University of Pretoria, one from De Paul College - Loyola College of Education in India, and one from Hochzchule Luneburg in Germany. One teacher had only received computer training from the Polytechnic of Namibia. It was therefore evident that 90% of the teachers in the study were professionally qualified except one as mentioned above who hadn't undergone the required teacher training programme needed to be able to teach the subject at the secondary school level.

The teachers' training for Computer Practice course

The teachers' responses with regards to training for Computer Practice are given in Table 5.

Table 5: Teachers' training for Computer Practice course (N=10)

	Frequency (%)
Yes	3 (30)
No	7 (70)
Total	**10 (100)**

Table 5 shows that 70% of the teachers were not initially trained as Computer Practice teachers, while 30% of them were trained to teach this subject in schools. The study revealed that due to lack of proper training as Computer Practice teachers, the teachers who were not

initially trained as Computer Practice teachers undertook to improve their professional skills and knowledge in this specific subject and attended short computer courses and training at different IT levels at the institute of technology in Windhoek as well as relevant workshops at NIED. The study further also found that these teachers tended to read a lot of relevant Computer Practice books and other teaching materials. They had pure Computer Science qualifications without the required post-graduate teaching qualification. The teachers had other relevant qualifications such as diplomas due to personal interest in the field of Computer Practice. They had enrolled for part-time computer studies at local ICT institutions or computer training providers in Khomas, Omaheke and Otjozondjupa Education Regions.

THE TEACHERS' VIEWS ON COMPUTER USE AND SKILLS IN THE SCHOOLS

Teachers' responses with regard to their views about the number of computers in the schools are given in Table 6.

Table 6: The number of computers in well-resourced, average-resourced and poorly-resourced schools' laboratories (N=10)

Number of computers	Frequency (%)
1-5	1 (10)
16-20	3 (30)
21-26	1 (10)
Over 30	5 (50)
Total	**10 (100)**

Fifty percent of the teachers indicated that schools were well equipped with reasonable facilities and had over 30 computers, 30% of the teachers indicated that schools had between 16-20 computers. While 10% of the teachers indicated that schools had between 1-5 computers for teaching and learning of Computer Practice. Seven urban schools were well-

resourced compared to the one semi-urban school and another urban school that were not properly well-resourced. This could be seen from figures 2 and 3 showing Windhoek High as one of the advantaged and well-resourced schools as it has well-equipped computer laboratory and ST. Joseph/Döbra RC High as one of the disadvantaged and average-resourced schools with a computer room that had less computers and no network points, while figure 4 shows Winnie Du plessis SS as one of the advantaged and poorly-resourced schools with a computer room that had no computers and network points at all in the three education regions.

Figure 2: Well-resourced computer laboratory of one of the schools in the urban area.

Figure 3: Average-resourced computer classroom of one of the schools in the semi-urban area.

Figure 4: Poorly-resourced computer classroom of one of the schools in the urban area.

Places where the computers are kept in schools

With regards to the places where the computers were kept in the schools, the teachers' responses are given in Table 7.

Table 7: The places where the computers are kept during teaching (N=10)

Computer places	Frequency (%)
Classroom	1 (10)
Laboratory	8 (80)
Missing	1 (10)
Total	**10 (100)**

Eighty percent of the teachers in the urban schools such as Concordia College, Delta SSS, Centaurus high, Windhoek High, Khomas high and Jan Möhr high schools used computer laboratories sponsored by some private companies or donor agencies to teach Computer Practice. Ten percent in the semi-urban schools such as ST. Joseph high school used a classroom. The study revealed that the funds for the purchase of computers came from the school development funds which was inadequate to cover all the expenses such as the upgrading of the computer hardware and software and the provision of technical support. Ten percent or one of the urban schools (Winnie Du plessis SSS) didn't indicate anything due to the fact that the school offered computer practice without any proper computer room or laboratory. All 10 teachers indicated that they used computers in the laboratories or classrooms. The study also found that it was very important to use computers in a laboratory or classroom because it was easier to supervise the learners and it also made the teaching and learning of the subject very effective.

The teachers' computer literacy skills

The teachers' responses with regards to their computer literacy skills are given in Table 8.

Table 8: Teachers' computer literacy skills (N=10)

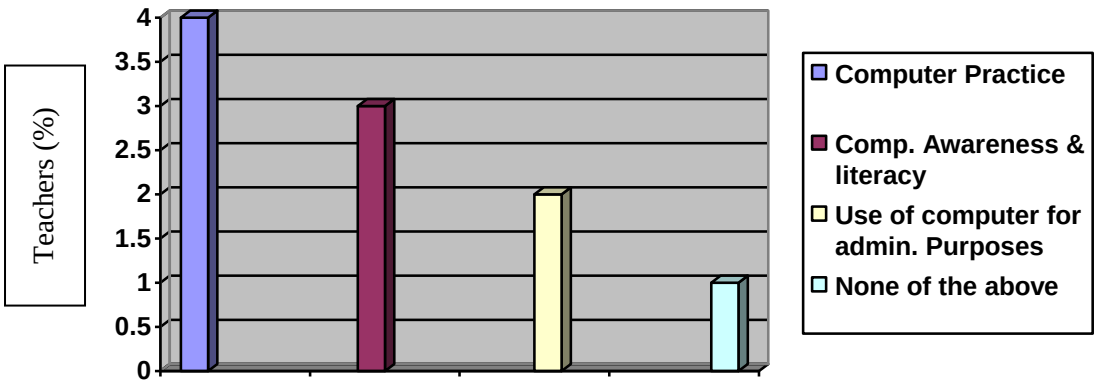
Teachers' skills	Frequency (%)
Intermediate user	3 (30)
Advanced user	7 (70)
Total	**10 (100)**

Seventy percent of the teachers were advanced computer users. This was something positive since the subject required that teachers should have reasonable computer skills to be able to teach Computer Practice in secondary schools. On the other hand 30% of them regarded themselves as intermediate users of the computer.

The potential uses of computers in education

Teachers' responses with respect to the potential uses of computers in education are given in Figure 5.

Figure 5: The potential uses of computers in education (N=10)



The potential uses of computers in education

Figure 5 shows that 40% of the teachers indicated that computers should enjoy the highest priority as a school subject. They revealed that it is because "at every workplace one has to

work with computers" and by " using different programs, learners would acquire computer skills for any job in the market." Also, due to the vast developments in the field, " learners would have more knowledge than just computer awareness and literacy skills. Therefore, they should be trained at a highest technological level to be able to serve the country's developmental needs". The teachers also indicated that Computer Practice as a subject shouldn't be taught to 750 learners because of a large number of learners. They indicated that this was the case at some urban schools because of certain practicalities, even if it was important in today's business world.

Another 30% of the teachers indicated that computer awareness and literacy should enjoy priority. They indicated that this was due to the fact that teachers could enjoy teaching if the learners were made aware of the need and importance of computer in the fast growing technology. They also indicated that if awareness was created among the learners on computer literacy, they would be prepared for future careers in computer science or perhaps became computer users. Twenty percent of the respondents indicated that computers were also used for administrative work. They revealed that this made the work of the teacher accurate and easier because nowadays no job could be done without a computer and computers could greatly reduce the amount of administrative work for staff in terms of reports, letters, etc..

The teachers' perceptions with regards to the implementation of Computer Practice into the schools

The teachers' responses with regards to their perceptions of the implementation of Computer Practice in Namibian schools are given in Table 9.

Table 9: Teachers' perceptions of the implementation of Computer Practice as a subject in schools (N=10)

	Statements	Strongly Agree (SA) (%)	Agree (A) (%)	Disagree (D) (%)	Strongly Disagree (SD) (%)	Total (%)
1	Most learners don't have computer literacy skills.	2 (20)	4 (40)	4 (40)	0 (0)	10 (100)
2	Enough computers make teaching easier.	6 (60)	2 (20)	1 (10)	1 (10)	10 (100)
3	Extra practical classes aren't compulsory, that's why learners don't take their work seriously.	0 (0)	1 (10)	6 (60)	3 (30)	10 (100)
4	Learners lack basic competencies in the subject.	1 (10)	5 (50)	2 (20)	2 (20)	10 (100)
5	Subject content is difficult and learners cannot cope with topics.	0 (0)	2 (20)	7 (70)	1 (10)	10 (100)
6	Training could have been given to teachers first before implementing the subject in schools.	4 (40)	4 (40)	2 (20)	0 (0)	10 (100)
7	Computer Practice could have been offered from grade 4-10 for learners to get exposure earlier to computers.	5 (50)	4 (40)	1 (10)	0 (0)	10 (100)
8	Teachers don't find the subject' syllabus user friendly.	2 (20)	2 (20)	4 (40)	2 (20)	10 (100)
9	Not easy to apply Continuous Assessment because learners find it difficult to complete their practical assignments.	2 (20)	2 (20)	3 (30)	3 (30)	10 (100)
10	Computer Practice is more practical oriented than theoretical.	3 (30)	3 (30)	4 (40)	0 (0)	10 (100)
11	Emphasis should fall on the promotion of the subject for a selected group of learners only.	2 (20)	2 (20)	5 (50)	1 (10)	10 (100)
12	Computer awareness and literacy should enjoy preference at a particular level.	3 (30)	6 (60)	1 (10)	0 (0)	10 (100)

Table 9 shows the teachers expressed perceptions with regard to the implementation of Computer Practice in schools. All the 10 teachers were requested to indicate for each statement whether they Strongly Agreed (SA), Agreed (A), Disagreed (D) or Strongly Disagreed SD). Forty percent of the teachers agreed with the statement that most learners didn't have computer literacy skills, while 60% of the teachers strongly agreed that enough computers at school sites made teaching easier. Sixty percent of the respondents disagreed that extra practical classes were not compulsory at school, that's why learners didn't take their work seriously to complete it. Fifty percent of the teachers agreed that most learners lacked basic competencies in the subject. Seventy percent of the respondents disagreed that the subject content was more difficult and learners couldn't cope with some topics in the syllabus. While 40% of the respondents agreed that proper training could have been given to teachers first before implementing the subject in the schools.

Fifty percent of the teachers strongly agreed that Computer Practice should be offered in schools from grade 4-7 (upper primary) to 8-10 (junior secondary) for the learners to get exposure earlier to computers. Another 40% of the respondents disagreed that the teachers didn't find the syllabus user friendly. Thirty percent of the respondents disagreed that it was not easy to apply continuous assessment properly because the learners found it difficult to complete their practical assignments. Forty percent of the teachers disagreed that Computer Practice was more practical than theoretical and 50% of them disagreed that the emphasize should be placed on the promotion of computer practice as a subject for a selected group of learners only. While 60% of the teachers agreed that computer awareness and literacy for all the learners should enjoy preference in all the grade levels in the junior secondary schools.

The teachers' class average grades for Computer Practice course

Teachers' responses with regards to their class average grades for this subject are given in Table 10.

Table 10: The teachers' class average grades for Computer Practice course (N=10)

Average grade	Frequency (%)
Grade B	5 (50)
Grade C	2 (20)
Grade D	2 (20)
Grade E	1 (10)
Total	**10 (100)**

Table 10 shows that 50% of the teachers indicated that their class average grades fell within Grade B, 20% of the teachers' class average grades fell within the Grade C and D respectively, while 10% of the teachers' class average grades fell within the category of Grade E. The respondents' class average grades results were due to the following contributing factors; lack of textbooks and teaching materials and lack of access and time spent on computer practice classes. The teachers indicated that learners were not very much interested in the subject because it was new to them. They also revealed that due to the lack of general or basic computer skills and peer-group influences among the learners was an obstacle to learn the subject in the schools.

Teachers' perceptions of the challenges faced by them in improving the quality of teaching of Computer Practice

The teachers' responses with respect to the perceived challenges they faced in improving the quality of teaching Computer Practice are given in Table 11.

Table 11: Teachers' perceptions of the challenges faced by them in improving the quality of teaching of Computer Practice (N=10)

	Statements	Strongly Agree (SA) (%)	Agree (A) (%)	Disagree (D) (%)	Strongly Disagree (SD) (%)	Total (%)
1	Learners don't attend regularly extra practical classes to improve their computer literacy skills.	0 (0)	4 (40)	3 (30)	3 (30)	10 (100)
2	Learners' lack of interest and low morale values.	4 (40)	2 (20)	3 (30)	1 (10)	10 (100)
3	Inadequate financial support from the Ministry of Education.	8 (80)	1 (10)	1 (10)	0 (0)	10 (100)
4	Classes are over-crowded.	7 (70)	1 (10)	1 (10)	1 (10)	10 (100)
5	Teaching package not attractive for teachers.	4 (40)	3 (30)	3 (30)	0 (0)	10 (100)
6	Experienced teachers leave the profession for better-paid jobs.	8 (80)	0 (0)	2 (20)	0 (0)	10 (100)
7	Lack of training opportunities for teaching staff.	6 (60)	4 (40)	0 (0)	0 (0)	10 (100)
8	Lack of Internet connectivity for teachers and learners.	3 (30)	5 (50)	2 (20)	0 (0)	10 (100)
9	Lack of upgrade and maintenance of computer facilities.	7 (70)	2 (20)	1 (10)	0 (0)	10 (100)
10	Computers have become too dominant over teachers.	1 (10)	3 (30)	2 (20)	4 (40)	10 (100)
11	Insufficient time to develop computer based lessons.	1 (10)	4 (40)	2 (20)	3 (30)	10 (100)
12	Difficult to integrate computers into classroom practices.	1 (10)	1 (10)	5 (50)	3 (30)	10 (100)
13	Insufficient number of computers available at schools.	4 (40)	6 (60)	0 (0)	0 (0)	10 (100)
14	Limitations of computers (e.g. outdated, too slow, insufficient memory).	4 (40)	3 (30)	3 (30)	0 (0)	10 (100)
15	Not enough software for instructional purposes available.	5 (50)	1 (10)	3 (30)	1 (10)	10 (100)
16	Lack of technical assistance to operate and maintain computers.	5 (50)	4 (40)	0 (0)	1 (10)	10 (100)
17	Lack of textbooks in schools.	5 (50)	1 (10)	1 (10)	3 (30)	10 (100)

Table 11 shows the teachers' perceptions of the challenges faced by them in improving the quality of teaching of Computer Practice in schools. The table shows that most teachers perceived the above statements as challenges as indicated by their agreement to each statement. These included the following; 40% of the teachers agreed that learners didn't attend extra classes regularly to improve their computer literacy skills while 40% of the respondents strongly agreed that the learners lacked interest and had low morale values to learn the subject.

Eighty percent of the teachers strongly agreed that there was inadequate financial support from the Ministry of Education, while 70% of them strongly agreed that classes were over-crowded. Forty percent of the teachers strongly agreed that the teaching package was not attractive at all for teachers and 80% of the respondents strongly agreed that experienced teachers left the teaching profession for better-paid jobs.

Sixty percent of the teachers strongly agreed that there was lack of training opportunities for teaching staff. Fifty of the respondents agreed that the schools lacked Internet connectivity for teachers and learners, while a further 70% of the teachers strongly agreed that there was lack of upgrading and maintaining of the computer facilities at the schools. Forty percent of the respondents strongly disagreed that computers had become too dominant over teachers.

Forty percent of the teachers agreed that there was insufficient time to develop computer-based lessons that could be used to teach Computer Practice. Fifty percent of the respondents disagreed that it was difficult to integrate computers into classroom practices. Sixty percent of them agreed that although they had few computers, there was still insufficient number of

computers available at schools to teach Computer Practice properly. Forty percent of the teachers in this study strongly agreed that there were limitations of computers (outdated, too slow, insufficient memory, etc.). Fifty percent of the respondents strongly agreed that there was not enough software for instructional purposes available at schools. Another 50% of the teachers strongly agreed that there was lack of technical support or assistance to operate and maintain computers at schools, while 50% of the respondents strongly agreed that there was lack of quality computer practice textbooks in schools.

Major general suggestions of teachers to improve the Computer Practice curriculum

The teachers indicated the following major suggestions to improve the Computer Practice curriculum:

1. Thirty percent of the teachers indicated that a specific worksheet be designed for all teachers teaching Computer Practice as a subject to make their administrative work easier in the classrooms.
2. Sixty percent of the teachers indicated that the hardware components of computers be upgraded at least annually including the upgrading of programming language.
3. Forty percent of the teachers indicated that Computer Practice needed to remain a limited number of learners' subject to make the management and maintenance easier due to lack of proper facilities and computers in schools.
4. Seventy percent of the teachers indicated that a task force team of technicians and system administrators be established by the Ministry of Education to lend proper support to schools in order to assist with the maintenance aspects of computers.
5. Eighty percent of the teachers indicated that proper facilities and more computers be provided by the Ministry of Education to schools. A ratio of 1:1 of computer to

learner in schools could make teaching and learning more effective and avoid over-crowded classes.

6. Sixty percent of the teachers indicated that Internet connectivity be provided by the schools to teachers at a minimal cost to search for important information that could be used for the projects.

BIOGRAPHICAL DATA OF THE LEARNERS

This part of the report dealt with the biographical information of the 100 learners studied. The number of schools and learners are illustrated in Table 1 (page 21).

Ages of the learners

The learners' ages are given in Figure 6.

Figure 6: Learners' ages (N=100)

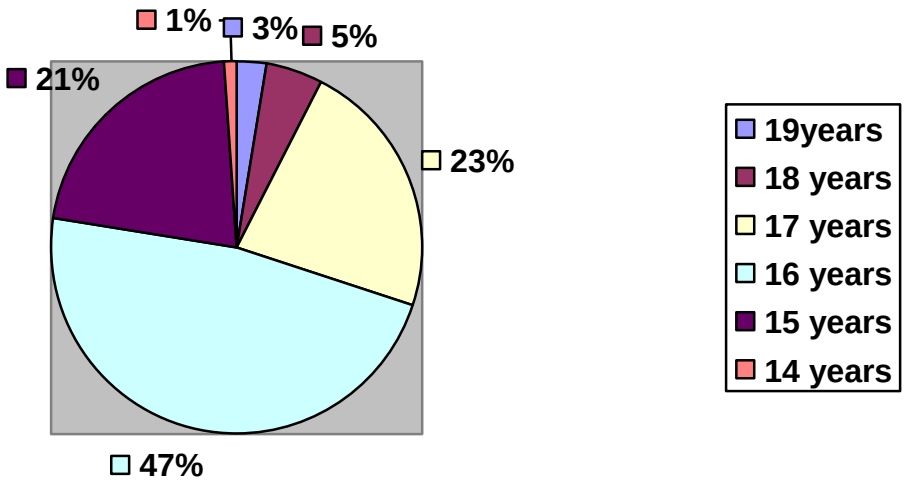


Figure 6 shows that 47% of the learners were 16 year old. Twenty three percent of the respondents were 17 year old, 21% of the learners were 15 years old and 5% of the respondents were 18 years old.

Sex of the learners

There were 51 female and 49 male learners who studied Computer Practice in this study. The majority of the learners were male who took Computer Practice as a school subject at grade 10 from all the 10 selected schools in the three regions.

LEARNER'S VIEWS OF COMPUTER USE, SKILLS AND COMPETENCIES

Learners' views of computer use outside the schools

The responses with regards to the views of learners of the use of computers outside the school are given in Table 12.

Table 12: The use of computers outside the school by learners (N=100)

	Frequency (%)
Yes	65 (65)
No	35 (35)
Total	**100 (100)**

Table 12 shows that 65% of the learners used computers outside the school at places such as their homes, parents' work places, Internet cafés, churches, Katutura Youth Complex, private libraries and Schoolnet Namibia. Thirty five percent of the learners didn't have access to computers at all. Some of the reasons given included; learners didn't have computers at home and to use one at an Internet cafés they had to pay for it. The learners used to pay N$10.00 per thirty minutes or N$20-00 per hour in Khomas region, which was too expensive. They

were not aware of other places where they could access computers especially in the semi-urban schools. Further, transport was a big problem due to long distances to reach the Internet cafés. The 65% learners who used computers at home and other places were more advantaged compared to the few learners who didn't have access to computers outside the schools in terms of improving their computer literacy skills in using computers on school projects.

The learners' use of computers by sex outside the school

The responses of learners with regards to the use of computers outside the schools by sex are given in Table 13.

Table 13: The learners' use of computers by sex outside the school (N=100)

SEX	USE		Frequency (%)
	Yes	No	
Male	36	13	49 (49)
Female	29	22	51 (51)
Total	**65**	**35**	**100 (100)**

Table 13 shows that 36% of the male learners used computers outside the school at different places such as Internet cafés, churches, parents' work places, etc. compared to 29% of the female learners. This could be one of the reasons why most male learners had interest in studying Computer Practice as indicated in Table 15 (page 45).

The purposes of using a computer at school

The responses of learners with regards to the purposes of using a computer at school are given in Table 14.

Table 14: The purposes of using a computer at school by learners (N=100)

Purpose	Frequency (%)
Playing games	4 (4)
Word processing	33 (33)
Searching for information	55 (55)
Others	5 (5)
Missing	3 (3)
Total	**100 (100)**

Fifty five percent of the learners used computers at schools to search for information and 33% of them used it for word processing. Four percent of the learners used it to play games, while 5% of them used it for other purposes such as downloading of information and music, listening to music and accessing the Internet to do their projects and school work.

The learners' interest in learning Computer Practice course

The learners' responses with regard to their interest in learning Computer Practice are given in Table 15.

Table 15: The learners' interest in learning Computer Practice as a school subject (N=100)

Interest	Frequency (%)
Poor	5 (5)
Fair	12 (12)
Good	48 (48)
Excellent	35 (35)
Total	**100 (100)**

Table 15 shows that 48% of the learners were interested in learning Computer Practice as a school subject. They gave the following reasons; they felt that by studying this subject, it

would widen their computer knowledge and skills and if one got a certificate he/she would become a computer technician, secretary or programmer. It would also be an encouragement to take Computer Studies in grade 11 & 12 as one of their subjects because they possessed basic computer skills already. The computers were interactive and exciting but importantly nowadays everything one did basically required computer knowledge and certain skills or talent. Only 5% of the learners indicated poor interest in Computer Practice due to the following reasons; the subject was more demanding than other school subjects, computer classes were more expensive than normal classes and lessons were less entertaining, parents didn't encourage and / or assist learners with homework. This has made the learners less committed to study the subject. In addition, there was a shortage of good quality textbooks and lack of skilled or qualified teachers. The syllabus was outdated, and some programs were not used anymore due to new technologies and there was also lack of supervision during practical sessions.

The learners' Computer Practice interest by sex

The learners' responses with regards to Computer Practice interest by sex are given in Table 16 and Figure 7.

Table 16: Learners' Computer Practice interest by sex (N=100)

Sex	**Computer Practice interest**				**Total**
	Poor	Fair	Good	Excellent	
Male	1	3	26	19	49
Female	4	9	22	16	51
Total	**5**	**12**	**48**	**35**	**100**

Figure 7: Learners' Computer Practice interest by sex (N=100)

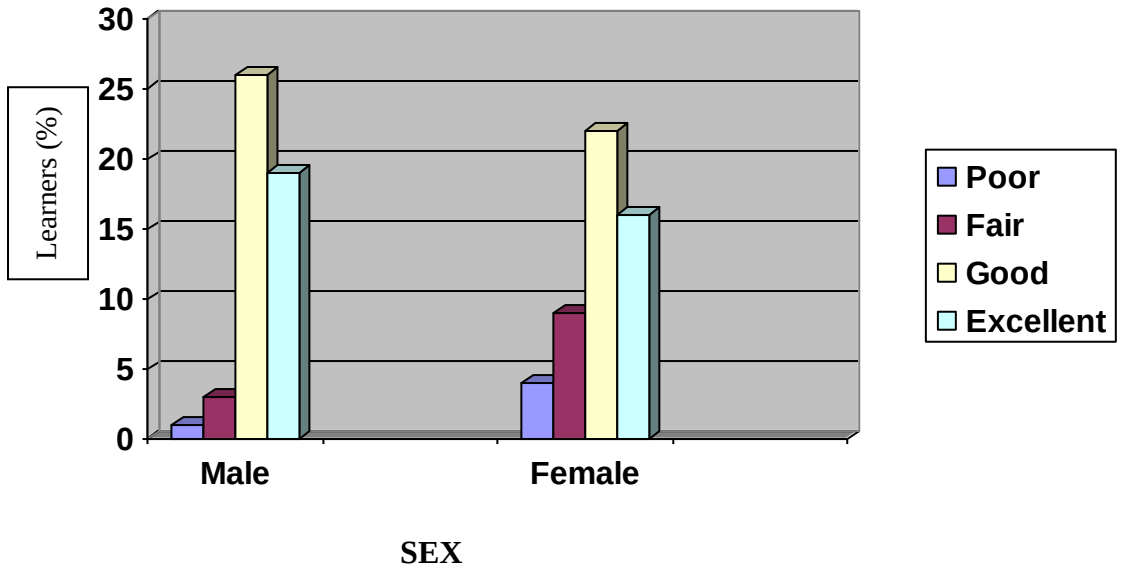


Table 16 shows that 49% of the male learners were interested in studying Computer Practice compared to 51% of the female learners. This is an indication that the majority of female learners were more interested in learning the subject than their male counterparts. Figure 7 shows that 26% of the male learners had good interest in studying the subject compared to 22% of the female learners who indicated the same degree of interest in Computer Practice.

The learners' computer literacy skills

The learners' responses with regards to computer literacy skills are given in Table 17.

Table 17: The learners' computer literacy skills (N=100)

Computer skills	**Frequency (%)**
Not used a computer before	1 (1)
Beginner	10 (10)
Intermediate user	76 (76)
Advanced user	12 (12)
Blank	1 (1)
Total	**100 (100)**

Seventy six percent of the learners indicated that they were intermediate users of the computer. This gave a positive reflection in terms of the learners overall computer literacy skills. Twelve percent of the learners were advanced users of computers in the schools. Ten percent of the learners were beginners, while only 1% had not used a computer before.

The learners' computer literacy skills by sex

The learners' responses with regards to their computer skills by sex are given in Table 18.

Table 18: The learners' computer literacy skills by sex (N=100)

Sex	**Computer skills**					**Total**
	Not used a computer before	Beginner	Inter-mediate user	Advanced user	Blank	
Male	1	6	35	6	1	49
Female	---	4	41	6	---	51
Total	**1**	**10**	**76**	**12**	**1**	**100**

Table 18 shows that 41% of the female learners were intermediate users of computers in schools compared to 35% of the male learners.

The learners' perceptions of the implementation of Computer Practice as a subject in the schools

The responses of the learners of the implementation of Computer Practice as a subject in the schools are given in Table 19.

Table 19: The learners' perceptions of the implementation of Computer Practice as a subject in the schools (N=100)

	Statements	Strongly Agree (SA) (%)	Agree (A) (%)	Disagree (DA) (%)	Strongly Disagree (SD) (%)	Total (%)
1	It is more beneficial for a learner to own a computer at home.	57 (57)	37 (37)	6 (6)	0 (0)	100 (100)
2	Parents don't encourage their children to take up computer related courses from younger age.	17 (17)	46 (46)	22 (22)	15 (15)	100 (100)
3	Inadequate computers at schools make learners' learning more difficult.	23 (23)	32 (32)	28 (28)	17 (17)	100 (100)
4	Computer Practice is more demanding than other subjects.	25 (25)	34 (34)	28 (28)	13 (13)	100 (100)
5	Teachers don't cover some difficult topics properly and that affect the learners' performances.	31 (31)	29 (29)	26 (26)	14 (14)	100 (100)
6	Learners need more time in the beginning of the year to work on computers to be able to improve their skills.	60 (60)	31 (31)	9 (9)	0 (0)	100 (100)
7	Parents' assistance with regard to homework is poor.	15 (15)	49 (49)	24 (24)	12 (12)	100 (100)
8	Learners need longer hours for practical classes than normal classes to improve their computer skills.	61 (61)	27 (27)	9 (9)	3 (3)	100 (100)
9	Learners don't get equal access to computers at schools.	19 (19)	32 (32)	29 (29)	20 (20)	100 (100)

Table 19 shows the learners' perceptions of the implementation of Computer Practice as a subject in the schools. The learners strongly agreed (SA), agreed (A), disagreed (DA) or strongly disagreed (SD) with the statements above (See Table 19). These included the following; 57% of the learners strongly agreed that it was more beneficial to own a computer at home than those who didn't have a computer. Forty six percent of the learners agreed that their parents didn't encourage them to take up computer related courses from a younger age and 32% of them agreed that inadequate computers at schools made learners' learning of Computer Practice more difficult, while 34% agreed that Computer Practice was too demanding than other subjects.

Thirty one percent of the respondents strongly agreed that teachers didn't cover some difficult topics properly and that affected their performance. Sixty percent of the learners strongly agreed that learners needed more time in the beginning of the year to work on computers to be able to improve their skills. In addition, 49% of the learners agreed that the parents' assistance with regard to homework was poor. Another 61% of the respondents strongly agreed that the learners needed longer hours for practical classes than normal classes to complete their assignments or projects and even to upgrade their computer literacy skills, while 32% of them agreed that they didn't get equal access to computers at schools.

The learners' perceptions of the challenges faced by them in improving their learning of Computer Practice in the schools

The responses of the learners' perceptions of the challenges faced by them in improving their learning of Computer Practice in the schools are given in Table 20.

Table 20: The learners' perceptions of the challenges faced by them in improving their learning in the schools (N=100)

	Statements	Strongly Agree (SA) (%)	Agree (A) (%)	Disagree (DA) (%)	Strongly Disagree (SD) (%)	Total (%)
1	Lack of qualified teachers to teach Computer Practice in schools.	21 (21)	35 (35)	31 (31)	13 (13)	100 (100)
2	Teachers lack computer literacy skills.	10 (10)	26 (26)	48 (48)	16 (16)	100 (100)
3	Lack of supervision for computer using learners.	15 (15)	44 (44)	33 (33)	8 (8)	100 (100)
4	Lack of interest of the teachers in using computers in classrooms.	14 (14)	26 (26)	41 (41)	19 (19)	100 (100)
5	Lack of computer lab facilities at schools.	23 (23)	27 (27)	29 (29)	21 (21)	100 (100)
6	Poor quality study materials, textbooks or manuals for Computer Practice.	19 (19)	35 (35)	32 (32)	14 (14)	100 (100)
7	Lack of extra computer practical classes for learners.	29 (29)	44 (44)	21 (21)	6 (6)	100 (100)
8	Computers are not accessible enough for the learners' own use.	20 (20)	39 (39)	29 (29)	12 (12)	100 (100)
9	Lack of e-mail facilities to communicate with other learners.	35 (35)	33 (33)	23 (23)	9 (9)	100 (100)
10	Parents cannot afford to pay for extra practical classes.	22 (22)	39 (39)	28 (28)	11 (11)	100 (100)

Table 20 shows the learners perceptions of the challenges faced by them in improving the quality of teaching with regards to the implementation of Computer Practice in schools. The table also revealed that most learners perceived the following as challenges; In the study 35% of the learners agreed that there was lack of qualified teachers to teach the subject in schools. Forty eight percent of the respondents disagreed that the teachers lacked computer literacy skills and 44% of the learners agreed that there was also lack of supervision during practical sessions. While 41% of the respondents disagreed that the teachers lacked interest in using computers in classrooms. Twenty nine percent of the learners disagreed that there was lack of computer facilities at the schools. Thirty five percent of the respondents agreed that there were poor quality study materials, textbooks or Computer Practice manuals.

Another 44% of the learners agreed that there was lack of extra computer practical classes for them at the schools, while 39% of the learners agreed that computers were not accessible enough for their use. Thirty five percent of the respondents agreed that there was lack of e-mail facilities to communicate with other peers or teachers, and 39% of the learners also agreed that their parents couldn't afford to pay for extra practical classes.

Major general suggestions of learners to improve the Computer Practice curriculum

The learners indicated the following major suggestions to improve the Computer Practice curriculum:

1. Sixty seven percent of the learners indicated that extra or special computer classes be introduced by the schools in the afternoons with more time allocated to learners to work on their projects and / or for the beginning learners to improve their computer literacy skills.

2. Ninety two percent of the learners indicated that the Ministry of Education should provide additional qualified Computer Practice teachers in schools to reduce pressure on the current teachers.
3. Forty eight percent of the learners indicated that they should be encouraged to do group work to be able to complete their assignments.
4. Eighty one percent of the learners indicated that Computer Practice lessons be taught for a longer period than other subjects so that the practical sessions could be covered promptly.
5. Fifty eight percent of the learners indicated that the Computer Practice teachers should use different computer software or programmes to teach the subject effectively including CD – ROMS.
6. Forty five percent of the learners indicated that the computer Practice learners be taught more about troubleshooting (hardware repair) or the basic maintenance aspects of a computer with theory.
7. Forty one percent of the learners indicated that practical examinations be introduced by the Ministry of Education for them in all the schools.

DISCUSSION OF THE FINDINGS

The findings are discussed by addressing the research questions of the study. The findings have been categorized into six themes namely;

1. The views of teachers with regards to the use of computers and their skills.
2. The views of learners with regards to the use of computers and their skills.
3. The teachers' perceptions of the implementation of Computer Practice as a subject in schools.

4. The learners' perceptions of the implementation of Computer Practice as a subject in schools.
5. The teachers' perceptions of the challenges faced by them in improving Computer Practice as a subject in schools.
6. The learners' perceptions of the challenges faced by learners in improving Computer Practice as a subject in schools.

The study found that teachers were not initially trained as Computer Practice teachers but only few of them were trained to teach the subject in schools. This is in support of The World Bank Report (2005) that stated that there were no statistics on the number of teachers who were qualified in ICT-related subjects in Namibia. Five years ago, only seven teachers were recorded as qualified to teach Computer Practice at Junior Secondary level and Computer Studies at Senior Secondary level in Namibia (The World Bank Report, 2005).

The teachers indicated that most of the schools in the urban area were well-resourced with reasonable facilities than others in the semi urban areas. Those urban schools had also over 30 computers at their premises. This can be supported by Pelgrum & Law (2003) who noted that the implementation and integration of computers and technology into schools was an expensive and sometimes complex process because it requires all the necessary facilities (well-resourced laboratories), competent staff to get it up and running, technical support and teaching of learners to use it correctly and effectively.

The study also found that it was very important to use computers in a laboratory or classroom because it was easier to supervise the learners and it also made the teaching and learning of the subject very effective. This finding supports the observations by Nieder & Frey (1992) as

cited in Plomp & Pelgrum (1993) who suggested that the location of computers might be a complicating factor in accessing computers by teachers and learners. It was also found that the teachers were not trained to teach Computer Practice initially, although most of them had professional qualifications. The teachers indicated that most of them were advanced computer users. They also revealed that the learners lacked basic competencies in the subject including computer literacy skills.

It was perceived by the Computer Practice teachers that enough computers at school sites made teaching easier. This is in support of Forcier (1996) who found that schools in the USA have reasonably high ratio of computers to learners. Therefore, the learners can search for information, practice skills and concepts, and create their own products. The teachers also indicated that proper training should be given to the teachers first before implementing the subject in the schools. This can be supported by Squires & Mcdougall (1994) who observed that if teachers were given such training whether at the pre-service or the in-service stage, they would be able to convert the potential of computer-based learning into the actuality of instructional use that would meet their objectives and curriculum needs.

The teachers indicated the following challenges which they faced with regards to the implementation of Computer Practice in the schools; There was inadequate financial support from the Ministry of Education, Computer Practice classes were over – crowded, the salary package was not attractive at all for teachers, the experience teachers left the teaching profession for better – paid jobs, there was lack of training opportunities of Computer Practice for teaching staff, the schools lacked Internet connectivity for the teachers and learners, there was lack of upgrading and maintaining of the computer facilities at the schools and there was also insufficient time to develop computer based lessons that could be used to

teach the subject. They indicated that there was lack of quality computer practice textbooks in schools. These findings support those by Garbers & De Lange (1998).

It was therefore, essential that challenges in education be satisfied or prevented through the use of the computers and their uses identified and justified as well. The teachers indicated that although the schools had few computers, there was still insufficient number of computers available to teach the subject properly. They also mentioned that there were also limitations of computers (outdated software, memory too slow, insufficient memory, etc.) and lack of quality Computer Practice textbooks in schools. Therefore, the Ministry of Education should seriously address the aspect of accessibility in terms of upgraded computers in schools through SchoolNet so that the teachers could teach properly.

The study revealed that most Computer Practice learners were intermediate users of computers and that they used computers outside the school at places such as their homes, parents' work places, Internet cafés, churches, Katutura Youth Complex, Private libraries and schoolnet Namibia. The study also found that most of the male learners were interested in studying Computer Practice compared to the female learners. This finding seems to support those by Gooler (1986). The learners also indicated the following as part of their perceptions of the implementation of Computer Practice in the schools; It was more beneficial to own a computer at home than those who didn't have a computer and their parents didn't encourage them to take up computer related courses from a younger age. They also indicated that inadequate computers made their learning more difficult because not all of them can utilize the computers available immediately for their assignments.

The learners indicated that Computer Practice was too demanding than other subject, the teachers didn't cover some difficult topics properly and that affected the learners' performance, the learners needed more time in the beginning of the year to work on computers to be able to improve their skills, parents' assistance with regard to homework was poor and the learners needed longer hours for practical classes than normal classes to complete their assignments or projects. The learners also indicated that they didn't get equal access to computers at schools. These findings support those by Forcier (1996). The learners indicated that Computer Practice should be offered in schools from grade 4-10 (upper primary to junior secondary) for the learners to get exposure earlier to computers. They also mentioned that Computer awareness and literacy for all the learners should enjoy preference in the schools.

The learners indicated the following challenges which they faced with regards to the implementation of Computer Practice in the schools; There was lack of qualified teachers to teach the subject, there was lack of supervision during practical sessions and there was lack of computer facilities at the semi urban schools. They indicated that there were poor quality teaching and learning materials such as textbooks and Computer Practice manuals. The teachers must therefore select and develop the most appropriate materials and media for the learners to enrich and reinforce learning and assist them in achieving the learning objectives.

The learners also indicated that there was lack of extra computer practical classes for the learners at the schools, computers were not accessible enough for the learners' use, there was lack of e-mail facilities to communicate with other peers or teachers and that their parents couldn't afford to pay for extra practical classes. These results appear to support those by Pelgrum & Law (2003). All those problems, which were indicated by the teachers and

learners in this study, hampered the effective implementation of Computer Practice as a subject in the Khomas, Omaheke and Otjozondjupa Education Regions.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents a brief summary of the study, the major findings and conclusions, as well as recommendations emanating from the results of the study.

SUMMARY

The importance of teachers and learners in the implementation of Computer Practice as a subject in schools cannot be overemphasized. Teachers are the backbone when it comes to curriculum implementation and they also play a crucial role as subject advisers at local and national levels. The learners on the other hand, if proper education is provided to them, would become future technology leaders and could ultimately contribute to the economy of the country.

The MBEC (1999) introduced the Computer Practice subject at Junior secondary school level in 1999. To date the subject has been taught in 37 schools in Namibia (MOE, 2006). However, literature regarding the implementation of the subject indicated that there existed a number of problems to support teaching and learning. Accordingly, the purpose of this study was to find out the teachers' and learners' perceptions of the implementation process of Computer Practice as well as the content of the subject at the Junior secondary school level in the Khomas, Omaheke and Otjozondjupa Education Regions.

The study addressed the following questions;

1) What are the teachers' perceptions of the implementation of Computer Practice subject in schools?

2) What are the learners' perceptions of the implementation of Computer Practice subject in schools?
3) What challenges are perceived by teachers as influencing their performance in teaching Computer Practice in schools?
4) What challenges are perceived by learners as influencing their performance in learning Computer Practice in schools?
5) Which skills and competencies should teachers have to be able to teach Computer Practice effectively in schools?
6) Which pre-requisite skills and competencies should learners have to be able to learn Computer Practice effectively in schools?

The qualitative method was used in obtaining the information from the 10 secondary school grade 10 teachers and 100 grade 10 learners doing Computer Practice. However, a quantitative method was also employed in order to compare the responses from the teachers and learners with respect to the implementation of Computer Practice in the schools.

Ten government secondary schools were selected purposefully on the basis of their location i.e. urban or semi-urban schools. Ten teachers from the 10 selected schools were also purposively selected because most of those schools had only one teacher for Computer Practice. Ten learners from each one of the ten grade 10 classes were then randomly selected for the study resulting in a total of 100 learners for the study.

The instruments for this study were two structured questionnaires, one for the teachers and the other for the learners, which were developed by the researcher. Both questionnaires consisted of open ended and closed ended questions. The teachers' questionnaire was

administered to all teachers in 10 Junior Secondary Schools and sought information on computer use and skills of teachers, their perceptions as well as challenges encountered with the implementation of Computer Practice in their schools. The learners' questionnaire was administered to the 100 learners. It also sought information on their perceptions, computer use and skills and the challenges faced in the implementation of this subject in their schools.

The researcher distributed the structured questionnaires to all the respondents personally in their classrooms with the help of the subject teacher. After the respondents had completed the questionnaires for about 15 minutes, the researcher collected them personally.

The Statistical Package for Social Sciences (SPSS) was used in the analysis of the data. The results were presented using frequency tables and graphs.

The study found that most schools in the urban areas were well-resourced with reasonable facilities than those in the semi urban areas. The study also stated that the teachers were not trained to teach Computer Practice initially, but most of them had professional qualifications. It was found that most teachers were advanced computer users, while the learners lacked basic competencies in the subject including computer literacy skills. It was perceived by the Computer Practice teachers that enough computers at school sites made teaching easier and that proper training should have been given to the teachers first before implementing the subject in the schools.

The teachers indicated the following challenges which they faced with regards to the implementation of Computer Practice in the schools; There was inadequate financial support from the Ministry of Education, Computer Practice classes were over – crowded, the salary

package was not attractive at all for teachers, which resulted in the experienced teachers leaving the teaching profession for better – paid jobs, there was lack of training opportunities for Computer Practice teaching staff, the schools lacked Internet connectivity for the teachers and learners, there was lack of upgrading and maintaining of the computer facilities at the schools and there was also lack of sufficient time to develop computer based lessons that could be used to teach the subject. The teachers indicated that although the schools had few computers, there was still insufficient number of computers available to teach the subject properly. They also mentioned that they used outdated computer software, low memory, computers are too slow, etc. and lacked quality Computer Practice textbooks in schools.

On the other hand, the study also revealed that most Computer Practice learners were intermediate users of computers and that they used computers outside the school at different places such as their homes, parents' work places, Internet cafés, churches, Katutura Youth Complex, Private libraries and SchoolNet Namibia. The learners indicated the following perceptions of the implementation of Computer Practice in the schools; It was more beneficial to own a computer at home, their parents didn't encourage them to take up computer related courses from a younger age, inadequate computers at schools made learning more difficult, Computer Practice was too demanding than other subjects, the teachers didn't cover some difficult topics properly which affected their performance, the learners needed more time in the beginning of the year to work on computers to be able to improve their skills, parents' assistance with regard to homework was poor, the learners needed longer hours for practical classes than normal classes to complete their assignments or projects and they also didn't get equal access to computers at schools. The learners indicated that Computer Practice should be offered in schools from grade 4-10 (upper primary to junior

secondary) for the learners to get earlier exposure to computers. They also mentioned that Computer awareness and literacy for all the learners should enjoy preference in the schools.

The learners indicated the following challenges which they faced in the implementation of Computer Practice in the schools; There was lack of qualified teachers to teach the subject in the schools, there was lack of supervision during practical sessions, there was lack of computer facilities at the semi urban schools, there were poor quality teaching and learning materials such as textbooks and Computer Practice manuals, there was lack of extra computer practical classes for the learners at the schools, computers were not easily accessible for the learners' use, there was lack of e-mail facilities to communicate with other peers or teachers and that parents couldn't afford to pay for extra practical classes.

All the above challenges were indicated by the teachers and learners in this study, and were seen as hampering the effective implementation of Computer Practice as a subject in the Khomas, Omaheke and Otjozondjupa Education Regions.

CONCLUSIONS

Based on the results of the study, the teachers and learners in this study demonstrated knowledge of the challenges they faced with regards to the implementation of Computer Practice as a subject in their schools. It became clear from the teachers' and learners' responses that for quality education to become a reality in all the three mentioned Education Regions, the Ministry of Education should put emphasize on curriculum development in order to enhance the Computer Practice syllabus and teaching in schools.

The issues of equity and access with respect to computers and laboratories should be

addressed seriously by the Ministry of Education. The provision of Internet facilities to teachers and learners in the schools should be a priority to enhance Computer Practice learning and teaching. In addition, the Ministry of Education should provide the resources such as quality Computer Practice textbooks and state-of-the-art equipment to improve the quality of Computer Practice teaching in all schools in Namibia. Proper resource allocation should be the norm if the schools are to perform effectively and efficiently in teaching Computer Practice.

RECOMMENDATIONS

The following recommendations are made based on the results of this study:

1. The Computer Practice syllabus should be revised frequently to meet the current and future needs of the Namibian society. It should include basic software principles such as Microsoft word, power point, Internet, desktop publishing, programming, database-system.
2. The Ministry of Education should provide more Computer Practice textbooks and other related teaching/learning including reference materials that could be utilized by teachers and learners in the schools.
3. The curriculum of Computer Practice programme should be frequently revised.
4. Only trained teachers in Computer Practice should be allowed to teach the subject in schools.
5. Training workshops or seminars on Computer Practice should be held on a regular basis to improve the quality of teaching and learning in schools.
6. Computer Practice teachers should be updated frequently with new technologies in education to enhance their teaching methodologies.

7. Computer literacy awareness should be raised especially in the rural schools and learners encouraged and informed properly about the importance of Computer Practice.
8. A reasonable fee structure for Computer Practice classes should be set up by the schools or alternatively, the classes could be subsidized by the Ministry of Education to encourage more learners to study the subject.
9. Computer Practice lessons should be taught for a longer period of time than other subjects so that the practical part of the subject could be covered properly. Practical examinations could also be introduced in the schools that offer the subject.
10. Further research should be conducted in more schools to find out why part-time Computer Practice learners perform better than the full-time learners and as well as the teaching strategies used by teachers to help Computer Practice learners when teaching this subject in schools in Khomas, Omaheke and Otjozondjupa Education Regions.

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Appendix A

Questionnaire on teachers' perceptions on the implementation of Computer Practice in schools

Instructions: This questionnaire attempts to gather information on the perceptions of Junior Secondary School Teachers with regard to the implementation of Computer Practice in schools. All information will be treated confidentially. Therefore, you are requested to kindly respond to this questionnaire honestly. Thank you for your help.

Please circle the appropriate number, e.g. (3)

Section A ***Biographical information***

Q.1 In which age group do you fall?

18-25	1	26-30	2	31-40	3	Above 40	4

Q.2 What is your gender?

Male	1	Female	2

Q.3 What grade(s) are you teaching?

Grade 8	1	Grade 9	2	Grade 10	3

Q.4 What is your teaching experience in years?

0-5	1	6-11	2	12-17	3	18 +	4

Q.5 What is your highest teaching qualification?

Grade 12 + 3 yrs teaching diploma	1
Grade 12 + 4 yrs Bachelor's Education degree	2
Grade 12 + B. Degree &Post Graduate Diploma	3
Others (please specify)	4

Q.6 At which institution(s) where you trained?

Q.7 Where you trained as a Computer Practice teacher initially?

Yes	1	No	2

Q.8 If no, how did you acquire your Computer Practice skills?

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……

Section B ***Computer use and skills***

Q.9 How many computers do you have in your school?

1-5	1	6-10	2	11-15	3	16-20	4	21-26	5	Over 30	6

Q.10 Where do you keep those computers used for teaching Computer Practice?

Classroom	1	Library	4
Computer lab	2	Other (please mention)	5
Media centre	3		

Q.11 At which level do you consider your skills regarding Computer Practice?

Never used	1	Beginner	2	Intermediate user	3	Advanced user	4

Q.12 In your view, which of the following potential use of the computer in education should enjoy highest priority? (Tick all uses)

Computer practice	1
Computer awareness and literacy	2
Use of computer for administrative purposes	3
None of the above	4

Q.13 If you have chosen any of the computer uses stated above, please give reasons why?

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Section C ***Perceptions of teachers***

Q.14 To what extent do you perceive the following statements in terms of agreement or dis-agreement with regard to the implementation of Computer Practice as a subject into schools?
Choose (**SA**=Strongly Agree, **A**=Agree, **D**=Disagree, **SD**=Strongly Disagree)

		SA	A	D	SD
1	Most learners don't have computer literacy skills.	1	2	3	4
2	Enough computers at school site make teaching easier.				
3	Extra practical classes are not compulsory at school, that's why learners don't take their work seriously.				
4	Most learners lack basic competencies in the subject.				
5	Subject content is more difficult and learners cannot cope with some of the topics in the syllabus.				
6	Proper training could have been given to teachers first before implementing the subject in schools.				
7	Computer practice should be offered in schools as from grade 4-7 (upper primary) to 8-10 (Junior Secondary) for learners to get exposure earlier to computers.				
8	Teachers don't find the subject' syllabus user friendly.				
9	Not easy to apply continuous assessment properly because learners find it difficult to complete their practical assignments.				
10	Computer practice is more practical oriented than theoretical.				
11	Emphasis should fall on the promotion of computer practice as a subject for a selected group of learners only.				
12	Computer awareness and literacy for all pupils should enjoy preference at a particular level. in schools.				

Q.15 What do you think, is your class' average grade annually in terms of your performance in Computer Practice? (Please, tick)

Grade-A	Achieved Basic Competencies exceptional well.	1
Grade-B	Achieved Basic Competencies very well.	2
Grade-C	Achieved Basic Competencies.	3
Grade-D	Partly achieved Basic Competencies.	4
Grade-E	Not achieved the majority of Basic Competencies.	5

Q.16 If Grade(s) D and / or E, what do you think could be the possible contributing factors?

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Section D ***Challenges and suggestions***

Q.17 To what extent do you agree or disagree with the following statements in terms of challenges facing teachers in order to improve the quality of teaching with regard to Computer Practice?

Choose (**SA**=Strongly Agree, **A**=Agree, **D**=Disagree, **SD**=Strongly Disagree)

		SA	A	D	SD
1	Learners do not attend regularly extra practical classes to improve their computer literacy skills.	1	2	3	4
2	Learners' lack of interest and low moral values.				
3	Inadequate financial support from the Ministry.				
4	Classes are over-crowded.				
5	Teaching package not attractive for teachers.				
6	Experience teachers leave the profession for better paid-jobs.				
7	Lack of training opportunities for teaching staff.				
8	Lack of Internet connectivity for teachers and learners.				
9	Lack of upgrade and maintenance of computer facilities.				
10	Computers have become too dominant over teachers.				
11	Insufficient time to develop computer based lessons.				
12	Difficult to integrate computers into classroom practices.				
13	Insufficient number of computers available.				
14	Limitations of computers (e.g. outdated, too slow, insufficient memory).				
15	Not enough software for instructional purposes available.				
16	Lack of technical assistance to operate and maintain computers.				

Q.18 What steps would you suggest should be done on the implementation of Computer Practice as a subject in schools in order to improve the quality of teaching?

1)…….
……
2)…….
……
3)…….
…….
4)…….
…….

Thank you so much for your time and input. Your contribution is very much appreciated.

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Appendix B

Questionnaire on learners' perceptions on the implementation of Computer Practice in schools

Instructions: This questionnaire attempts to gather information on the perceptions of Junior Secondary School learners with regard to the implementation of Computer Practice in schools. All information will be treated confidentially. Therefore, you are requested to kindly respond to this questionnaire honestly. Thank you for your help.

Please circle the appropriate number, e.g. (3)

Section A *Biographical information*

Q.1 In which age group age do you fall?

16-18	1	19-21	2	22 and above	3

Q.2 What is your gender?

Male	1	Female	2

Q.3 At which school are you? _____

Section B *Computer usage and skills*

Q.4 Which of the following purposes do you use computers for?

Playing games	1	Search for information	3
Typing (Word processing)	2	Others (indicate)	4

Q.5 How do you rate your interest in learning Computer Practice as a school subject?

Poor	1	Fair	2	Good	3	Excellent	4

Q.6 If poor, to what factors do you attribute your interest regarding this subject?

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……

Q.7 How would you rate your skills regarding Computer Practice?

Not used one	1	Beginner	2	Intermediate user	3	Advanced user	4

Section C ***Perceptions of learners***

Q.8 To what extent do you perceive the following statements in terms of agreement or disagreement with regard to the implementation of Computer Practice as a subject in schools?

Choose (**SA**= Strongly Agree, **A**=Agree, **D**=Disagree, **SD**= Strongly Disagree)

		SA	A	D	SD
1	It is more beneficial for a learner to own a computer at home.				
2	Parents don't encourage their children to take up computer related courses from younger age.				
3	Inadequate computers at schools make learners' learning more difficult.				
4	Computer practice is more demanding than other subjects.				
5	Teachers don't cover some difficult topics properly and that affects the learners' performance.				
6	Learners need more time in the beginning of the year - to work on computers to be able to improve their skills.				
7	Parents' assistance with regard to computer practice' homework is poor.				
8	Learners need longer hours for practical classes than normal classes to improve their skills.				
9	Learners don't get equal access to computers at school.				

Section D ***Problems/challenges and suggestions***

Q.9 To what extent do you agree or disagree with the following statements in terms of obstacles/problems facing learners in order to improve their learning?

Choose (**SA**=Strongly Agree, **A**=Agree, **D**=Disagree, **SD**=Strongly Disagree)

		SA	A	D	SD
1	Lack of qualified teachers to teach Computer Practice in school.	1	2	3	4
2	Teachers lack computer literacy knowledge/skills.				
3	Lack of supervision for computer using learners.				
4	Lack of interest of teachers in using computers in classroom.				
5	Lack of computer lab facilities.				
6	No rules in the school time-table for learners to learn about or how to use computers.				
7	Poor quality study materials, textbooks or manuals.				
8	Lack of extra computer practical classes for learners.				
9	Computers not accessible enough for the learners' own use.				
10	Lack of e-mail facilities to communicate with other learners.				
11	Parents cannot afford to pay for extra practical classes.				

Q.10 What steps would you suggest should be done on the implementation of Computer Practice as a subject in schools in order to improve the quality of learning?

1)……..
…….
2)……..
…….
3)……..
…….
4)……..
…….

Thank you so much for your time and input. Your contribution is very much appreciated.

Mr RJ Kamerika (M.Ed Student)
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Appendix C

Secondary Schools in Khomas, Omaheke and Otjozondjupa Education Regions which offered Computer Practice:

Omaheke:
Winnie Du Plessis SSS
Otjozondjupa:
Donatus high school
Grootfontein SSS
JG V/der Walt JSS
Otjiwarongo SSS
Khomas:
A. Shipena SSS
Academia high school
Centaurus high school
Concordia College
Delta high school
Jan Möhr high school
Khomas high school
Windhoek Tech. High school
Windhoek high school
ST. Georges College
ST. Joseph / Döbra RC SSS

Appendix D