

**AN INVESTIGATION INTO THE INTRODUCTION OF  
COMPUTER LITERACY INTO A SCHOOL CURRICULUM. A  
KWAZULU-NATAL EXPERIENCE.**

**FAKAZILE BERTHA MDUNGE**

**200101656**

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**SUPERVISOR●: Mr B.R Nel**

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## ABSTRACT:

The era of democracy has brought many changes in curriculum development in South Africa. The changes encompass equitable distribution of educational resources covering both previously advantaged and disadvantaged schools. The changes have meant merging of various educational departments with unequal resources into one. It is noted that the curriculum development in Information Technology area of learning brings with it number of challenges as introduction of technology lessons means a need for extra budget and staff development for it to be run smoothly. The current challenge is that the majority of learners come from disadvantaged communities where getting survival slice of bread is still an issue. We have learners who come from rural and informal settlements where computers are still viewed as the technology from the mars. Some learners are currently using the space under the tree as an area of formal learning.

Moreover, the current teachers were taught in a system of indoctrination and the question and answer method of teaching rather than learning was used as a way to

reproduce rather than to be productive. The focus on disadvantages of various methods of learning were also not given sufficient attention, hence, there is a major gap of understanding their impact.

As a result of this study which investigates the introduction of computer literacy into schools curriculum, it solicits to find the nature and extent of problems encountered by educators, parents as well as learners introduction of computer into the school curriculum. It looks at strategies employed by different schools in dealing with introduction of computer literacy into their school curriculum. Finally, the study focuses on the reasons and circumstances, which bring about different levels of success in different schools. The research is investigative and descriptive.

Three schools in Mpumalanga schools community is to serve as source of data. Mpumalanga is a microcosm of KwaZulu-Natal as it is community bedeviled by violence during times of Apartheid, there are schools belonged to two different departments of education, that is, one education and training and the others to department of education and culture. The community is divided into three, that is urban, rural and informal previously known as squatter camps. The

first part covers (Chapter one and Two)) the introduction, the purpose of the study, motivation and critical questions and rationale highlighting the definitions of content, computer, information communication technologies, South African policy and global change.

The second part covers (Chapter three and four) covers sampling methods, data collection and part one of research findings and analysis. The third part covers (chapter five and six) research findings and analysis part two, conclusion and recommendations.

## DEDICATION :

I dedicate this report to my husband, two daughters Tersia AND Hlengiwe for being so understanding, inspire me to do my studies even during difficult times.

## ACKNOWLEDGEMENT

I wish to express my deep heart feelings gratitude to the following excellent people who have generously contributed to the success of this report, even though they have been under tremendous work pressures. Mr Ben Nel, my supervisor. Mr Sibusiso Xaba for his encouraging technical support and all those who participated in the projects as learners, educators, librarians and printers.

## DECLARATION

I, Fakazile Bertha Mdunge, declare that this dissertation is my own work, and has not be submitted previously for any degree.

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Researcher

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Supervisor

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## **CHAPTER ONE**

### **TOPIC: AN INVESTIGATION INTO INTRODUCTION OF COMPUTER LITERACY INTO A SCHOOL CURRICULUM**

#### **1.1 INTRODUCTION.**

The researcher is an educator in a community where the government together with the private sector has provided computers to schools in order to help with teaching and learning. The introduction of computers into schools means changes to the school curriculum; and any change usually comes with difficulties, and at times people fear change and consequently resist it. It is, therefore, important that schools are given the necessary assistance during the introductory stages to enable them to cope.

This study is focuses on Mpumalanga, one of the district in KwaZulu-Natal Province of South Africa. This district consists of schools, which were formerly under the Department of Education and Training and those that were formerly under Department of Education and Culture. The infrastructure and resources in the

former Department of Education and Training schools were of better quality than those found in the schools which were formerly under the Department of Education and Culture. For example, almost in all schools under the former Department of Education and Training have laboratories and libraries, whilst most of the schools under the former Department of Education and Culture have none of these and only few have laboratories. The poor infrastructure and the lack of the educational resources in the rural African schools were as result of the policy of the former apartheid government .The Land Act of 1913, as amended by the Native Trust Act and the Land Act of 1936, stipulated that people of different races stay in separate areas. The supply of resources by the Government, to these separate areas, was uneven, and the "African Schools " had the poorest supply of resources and the poorest infrastructure Pigford and Ngcongo(1995:3). The schools, which were under the now defunct Kwa-Zulu Government (Department of Education and Culture) were even worse off. Pigford and Ngcongo (1995: 10) state that "the people sit on the hard, wooden benches that serve as their desks. Lack of proper furniture could be attributed to poor infrastructures. Three or four squeeze together to share a single book".

The present government is committed to changing the difficult circumstances, which prevailed in the many different departments

of education. These conditions were created by Apartheid and as a result most schools lacked computers. The current government is doing redress of the past imbalances. This commitment is shown in the statements found in the White Paper (1995:75) where it is stated that the system of education in this country must "open the gate of learning and culture to all, and ensure that our nation's human resources and potential are developed to the full. The former South African Minister of Education Bhengu:(1997) argued, "without accessing new technology we will be unable to compete internationally".

This study seeks to look at the difficulties facing educators during this period of change, and in particular the introduction of computer literacy into a school curriculum. It also looks at the different strategies employed by different schools in dealing with the introduction of computer literacy into their curriculum. Finally the study focuses on the reasons and circumstances, which bring about different levels of success in different schools. Success will be judged by the ability of learners to demonstrate the skills they have acquired in computer literacy e.g. if the outcomes are the ability of learners to describe the different components of a hardware and software and their functions then learners must demonstrate that competency and the final result is to produce people who are computer literate.

## 1.2. MOTIVATION FOR THE STUDY

The inspiration to conduct this study comes from the researcher's experience with the provision of computers to the former Department of Education and Training and former Department of Education and Culture schools in the Mpumalanga area. This research seeks to find out the methods used by teachers when teaching computer literacy because methods may either retard or accelerate the process of teaching and learning. It seeks to find out whether teachers do get assistance in how to develop an appropriate curriculum and how to formulate effective teaching programmes. The study seeks also to find out if educators are motivated enough to develop themselves and gain more knowledge and skills of teaching computer literacy. If there are hindrances preventing educators to develop themselves this study at its completion will reveal these hindrances and recommend solutions.

## 1.3. PURPOSE OF THE STUDY

This study aims to investigate the introduction of computer literacy into a school curriculum, i.e difficulties facing educators

during this period of change, and in particular the introduction of computer literacy into a school curriculum. It also looks at the different strategies employed by different schools in dealing with the introduction of computer literacy into their curriculum. Finally the study focuses on the reasons and circumstances, which bring about different levels of success in different schools.

## 1.4 CRITICAL QUESTIONS

This research seeks to answer the following critical questions:

1. What problems and successes have educators experienced in their efforts to introduce computer literacy in the school curriculum?
2. What steps have educators taken to introduce computer literacy into the mainstream of curriculum development?
3. What are the roles, which can be played by different stakeholders in promoting smooth transition from the old system to the new system that includes information technology and computer literacy?

The success rate is to be determined by the outcomes set out by the school, but finally the critical goal is to produce computer literate students. The effectiveness of the school programmes in

producing computer literate learners serves to determine the success the school endeavors in introducing computer literacy.

### 1.5. RATIONALE.

Developing countries have embraced computer technology to enhance governance, and even education. As the fastest growing technology this has engaged many governmental departments in policy formulation such as improve communication. One such department facing the challenge of rolling out computer literacy to previously disadvantaged communities is the Department of Education. The government is committed to redressing the imbalances created by the former educational system in this country. One of the methods identified by the department of education, to redress the situation, is the introduction of computer literacy into the national curriculum and the supply of computers into schools. According to recent educational reports (2000:6) the government has supplied computers to schools but teachers are not well prepared to use them for the benefit of learners. This study seeks to find out why this is the case. This case study hopes to also help the stakeholders in education like the Education Department in KwaZulu-Natal, educators, and



governing bodies in organizing teacher and student assistance, perhaps in the form of in-service training for their educators.

This study at its completion hopes to further empower and prepare learners to be able to tackle complex computer problems without fear. Most tasks given to learners include searching information either in libraries or any information centre and the learners will be better prepared to work independently.

## 1.6 RELEVANCE OF THE STUDY

The findings of this study could benefit the following:

- The school management and those who are responsible for the design and development of the curriculum.
- Policy makers who are responsible for the design of computer courses and teaching programmes
- Learners who are learning computer literacy.
- Educators who teach computer literacy
- The government in its quest for better education for all.
- The private sector that need people who are computer literate and information literate. A computer literate person is a person who has acquired skills to read and write using a computer, and information literate person is a person who

has acquired the necessary skills to find information, analyze it and apply it to solve problems.

## 1.7 LITERATURE REVIEW

Educational computing has a long history, but in South Africa there are schools where educational computing has only recently been introduced. This is as a result of the former government policy, which created imbalances between different racial groups. The present government, with the aid of the private sector is committed to redressing these imbalances. The former National Minister of Education Bhengu (1997) argued that "without accessing new technology we will be unable to compete internationally" In the White Paper (1995: 79) our national Minister of Education stated that "our system of education must open the gates of learning and culture to all, and ensure that our nation's human resources and potential are developed to the full ". In order to achieve this goal the national department of education must level the playing fields by providing similar infrastructure and resources in all schools. Holloran (1990), cited by Criticos (1997) states "as the information society develops, it will not be possible to achieve the goals of citizenship or to exercise the appropriate rights in the absence of an information

and communication system which provides the information base and the opportunities for access and participation for all citizens ". The supply of computers and the introduction of computer literacy into the schools where none existed before is the one of the ways in which the government addresses the imbalances of the past. The fastest growing trend these days by the government is the introduction of technology in all schools, usually starting with the introduction of computer literacy into the schools curriculum.

## 1.8 CONCLUSION

This chapter provides a reader the background information on the reasons motivating the conduct of the study. The main important issues are the purpose of the study, critical questions, motivation of the study and the rationale for the study. The next chapter discusses the theoretical framework of the study and the literature review.

## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 INTRODUCTION

There is indeed a need for more expert guidance in the use of computers in the classroom if it is to be widely used as an educational tool. Computers and its applications fascinate more and more people. This world of exploration is able to adequately disseminate information while at the same time developing people's skills in accessing, selecting and understanding information. In order to access such information, people need computer skills and Internet technologies, which may encourage and support effective learning (Watkins, et al, 1996 & Pomorina, 2000). A study by Cronje (2001:8) affirmed that lack of knowledge about technology or too little knowledge to use it optimally are major concerns for teaching and learning in their teaching programmes. Therefore, this chapter focuses on the benefit of using media in teaching and role and benefit of using computers in schools.

## 2.2 BACKGROUND OF THE STUDY

Computers have now been used in most schools for many years. This is due to the first concentrated government initiative to equip all primary schools with computers. This came in early 1980s when the Department of Education and Science (DES), as it was then called, orchestrated the provision of a minimum of one complete computer system for every primary school in the UK (Greenwood:21). In 1989, the National Curriculum Council recommended that each school should have one computer in every class. In 1992 the Parliamentary Office for Science and Technology (POST) took this even further by recommending that there should be at least one computer for every twelve pupil, an estimated additional increase in requirements across the country of more than 300 000 computers (Greenwood, 1993).

An emotive subject with teachers, pupils and computer literate parents is that of the depth (or lack of) computer knowledge in schools, as many teachers had entered the profession with arts-based qualifications. The introduction of computers into schools is now therefore a process which needs time to become self-generating and with young teachers now entering schools having used computers in their own training, the knowledge levels have snowballed so much that

even the most “technophobic” educators can now at least operate these systems to the extent of running a range of pre-loaded software packages (Greenwood, 1993). As a result of successful usage of computers in educational environments, computer-based training (CBT) has evolved as an activity which contains dedicated workstations but it was found that more powerful means of presenting information to the students was needed like photographs, complex graphic, stereo sound, as a results the multi-media was introduced (Greenwood, 1993).

## 2.3 DEFINITION OF CONCEPTS

### 2.3.1 INTERACTIVE MULTIMEDIA

Multimedia is a term that generally describes a computer-based program that integrates several forms of media that may include video, sound, images, animation, graphics and text (Neo & Neo, 2001). The term interactive that the media responds to some input from the user. While a high level of interactivity is common in computer-based games, interactivity in educational applications is frequently reduced to the level of page turning. Interactivity in educational applications should attempt to engage the learner so that a deep approach to learning is encouraged. This contrasts with a surface approach where the student may recall rules, procedures and principles but does not reach a level

of understanding that allows knowledge to be abstracted to new situation, or allow for the development of the skills of analysis and synthesis. If a computer is to be used to support or enable learning, the power of the technology should be employed to achieve the level of interactivity that best suit the learning task. At the highest level this represents a dialogue between the program and the user. Unfortunately it appears the much computer-based interaction in an educational context rarely extends beyond electronic page turning. Using multimedia in the teaching and learning environment enables students to become critical thinkers, problem solvers, more apt to seek information, and more motivated in their learning processes (Neo & Neo, 2004, p4). Reeves (1998) describes the difference between two approaches of how media and technology could be used in schools: "First, students can learn "from" media and technology, and second, they can learn "with" media and technology learning "with" technology is referred to in terms such as cognitive tools and constructivist learning environments"

### 2.3.2 A COMPUTER

According to Woolard (2004, p45), a computer is a tool, just as a ruler helps a student measure, a protractor helps calculate the degrees in an angle, and a pencil and pad assist in the capturing

of ideas so a computer assists the children in creating, manipulating, and producing various pieces of work. Greenwood (1993) described a computer as an excellent tool for teaching of programming skills. There is no magic formula for producing results in our students. In order for our children to succeed it will take good teaching combined with good tools. The computer can either be used properly and produce great results or improperly producing disastrous consequences depending upon who wields the mouse. There is no doubt that computer can add to the efficiency of the classroom, but standardised test scores have remained stagnant over the past few years (Woolard, 2004).

### 2.3.3 INFORMATION AND COMMUNICATION TECHNOLOGIES (ICT.)

Lundall and Howell (2000) explain that ICTs are the convergence of microelectronics, computers and telecommunications which make it possible for data including texts, video and audio signals to be transmitted anywhere in the world where these digital signals can be received. ICTs thus incorporate a range of technologies used to support communication and information. ICTs include both network and application. Network include fixed, wireless and satellite telecommunications broadcasting network.



Well-known application, are the Internet, database management system and multimedia tools. By implication, a holistic understanding of ICTs necessarily includes consideration of telecommunication policies, information policies and human resource development policies.

## 2.4 TECHNOLOGICAL TOOLS FOR TEACHING AND LEARNING

According to Martin (1996) technological tools for teaching and learning which are more common multimedia aids are such as videos, the tape recorder, the overhead projector and television. The technological tools are as follows:

### Audio-conferencing

Allow students to participate in a telephone-based discussion group from almost any location.

#### *2.4.1 EMAIL OR ELECTRONIC MAIL*

The most basic form of on-line communication on the internet enabling students to communicate with their teacher and each other on a one-to-one basis, mailing lists of student addresses

also allow teachers to broadcast information to all students on the list.

#### *2.4.2 CD-ROM (compact disk-read-only memory)*

An optical disk containing information which students may 'read' only (i.e. information cannot be changed or added to the disk); interactive CD-ROMs pose questions and provide answers and feedback to students.

#### *2.4.3 COMPUTER MEDIATED MEETINGS*

A local network system (e.g. meetingware) that allows students at computer terminals in the same room to respond simultaneously to a question or problem, collected text contributions are viewed by the class in the form of a projected image.

#### *2.4.4 INTERNET*

The largest on-line network in the world linking smaller networks; it is generally accessed by using email or the World-Wide Web. Networked displays enable students to view a 'masterscreen' (e.g. the teacher's) on their own computer terminal. On-line discussion group (news groups)

An Internet-based discussion group accessed through email or a browser; students and teachers can both post and respond to messages; the list may be moderated (managed) by the teacher through on-line mailing lists (listservs). Email distribution lists (usually moderated) which students and teachers can subscribe to where messages sent by subscribers are distributed to all other subscribers on the list.

#### *2.4.5 CHAT ROOMS*

An on-line discussion group, which allows for simultaneous, 'live' electronic discussion.

#### *2.4.6 URL (UNIFORM RESOURCE LOCATOR)*

An address on the Internet where you can find information in it or you can use search engine to find a particular topic (Web addresses usually begin with <http://> e.g <http://www.mathsteacher.com> ).

#### *2.4.7 PRESENTATION SOFTWARE*

A software program (e.g. PowerPoint), which provides layout, formats for the sequential presentation of text and graphics;

generally used in lecture situations as a more colourful and stimulating alternative to overhead transparencies.

#### *2.4.8 VIDEO – CONFERENCING*

Enables students and teachers in different locations to see each other and speak to each other 'live' via telecommunications links, which transmit video images and sound.

#### *2.4.9 DATASHOWS*

(Project images from computers) .g. from the World-Wide Web, PowerPoint, wordprocessing and spreadsheet packages) into a screen, enabling many students to view an image at the same time.

#### *2.4.10 HYPERCARD*

A software program (e.g. Toolbox, authorware) used by teachers to construct interactive tutorial programs.

#### *2.4.11 HYPERTEXT*

A system that allows electronic documents to be clicking on a highlighted word or graphic, enabling students to make choices about their next learning step within an interactive tutorial program.

#### *2.4.12 INTERACTIVE TUTORIAL PROGRAMME*

Accessed by students through floppy disks, CD-ROMs or Web pages, and include text as well as graphics (static or moving images); programs prompt students to respond to questions (often multiple choice) and provide feedback on their responses.

#### *2.4.13 VIRTUAL REALITY*

A sophisticated computer-based program involving human interfaces, such as headsets with stereovision and sound and datagloves or suits, which allow for the simulation of a particular reality.

Allows students to leave message for their teacher at any time, some systems enable students to obtain a voicemail reply by later dialling into another voice-mailbox.

#### *2.4.14 WORLD-WIDE WEB*

A hypertext-based service on the Internet providing students and teachers with access to databases in text, graphics and audio form for the purposes of research and self-directed learning.

Web files can be downloaded (transferred to the student or teacher's computer). Web pages or sites are often created by teachers and learners.

## 2.5 THE SOUTH AFRICAN POLICY AND SCHOOLING CONTEXT

Bertram et al (2001) mention that South Africa's new educational policy emphasises that educators and learners need to be media literate if they are to operate effectively in the new millennium. Two of the seven critical cross-field outcomes challenge educators to enable their learners to:

Collect, analyse, organize and critically evaluate information;  
Communicate effectively using visual, symbolic and/ or language skills in various modes.

Lundall and Howell (2000:52) further assert that policy in South Africa has moved a long way towards promoting and understanding the role of ICTs in society in general and in education in particular. There is a rich and productive discourse about ICTs that provides a useful starting point for promoting ICTs in education. The real challenge however, lies in the ability of the policy framework to enable schools to overcome the

inequalities of the past and provide quality education for all learners.

Since 1994 a number of new policies have been developed and implemented which have substantially altered the education system in South Africa. The most important of these has been the establishment of a single, education system to replace the separate, racially defined, education department that previously existed. The general philosophy, principles and goals for education are expressed in the White Paper 1 on Education and Training (1995). The way in which schools are organised, governed and funded is outlined in the South African Schools Act (1996). These two documents have been important in shaping the policy environment for the provision and use of ICTs in schools. It is important to recognise that any strategies developed around ICTs in schools have to be based on the principles outlined in the White Paper.

According to Lundall and Howell (2000:53) principles outlined in the White Paper can be summarised as follows:

A commitment to providing access to quality education, and a right to basic education as enshrined in the Bill of Rights.

A commitment to developing the full potential of South Africa's people for their active participation in all processes of a

democratic society and their contribution to the economic growth and development of the country.

Redressing imbalances of the past through the implementation of new teaching and learning strategies for the effective and flexible delivery of services within various learning contexts and through the equitable distribution of technology and other resources.

Implementing learning-centred and outcomes-based approaches to education and training in order to achieve quality learning based on recognised national standards.

Enabling all people to value, have access to, and succeed in life-long education and training.

Developing a problem-solving and creative environment in which new technology are harnessed to produce knowledge, products, and services.

Integrating technology into the strategies intended to reach these goals so as to advance South Africa's ability to harness new technology in its growth and development.

In line with provision of the Constitution, the practical implementation of these principles is the joint responsibility of the national and provincial departments of education. The National Department of Education is responsible for developing policy and setting national norms and standards and the Provincial Departments are responsible for the provision of



education. Provincial responsibilities include: provincial legislation, finance, personnel, logistics, information, physical facilities, provision of books, examinations and computer services. To undertake this responsibility, provinces have had to restructure, incorporating various department into one coherent education department. In addition, they have had to develop and adopt strategic plans to operationalise their responsibilities. Lundall and Howell (2000: 53) further mention that in the schools themselves, ownership, governance, and funding are set out in the South African Schools Act (1996). The Act provides for the setting up of governing bodies at all schools, which should be composed of parents (in secondary schools); non-educator staff and a co-opted non-parent member of the community. The Act also provides for a system of user fees (school fees) to supplement limited state funding to schools.

While all these regulations are significant for the provision and use of ICTs in schools, it is the area of school fees that is of particular importance. However, it is important to note here that the system of compulsory school fees, which supplements state allocation to schools, has perpetuated a number of the resource disparities in the education system. Linked to the above has been the government's setting of national norms and standards for school funding. As might be expected, a core focus of these national norms and standards is on redress of educational

inequities within the system. The provisions of this policy provide for a framework of government spending on schools that directs greater state resources to the most disadvantaged schools. In addition, it focuses on pressing budgetary problems within the schooling system, possibly large percentage of expenditure consumed by personnel items (i.e. salaries). Both of these aspects are directly relevant to attempts to increase the use of ICTs at schools. (Lundall and Howell, 2000: 54)

## 2.5.1 GLOBAL CHANGE

Bertram (2001:5) emphasize that developing a better understanding of media and information is echoed internationally. As societies become `knowledge` or `information` societies, so our ability to understand, select and manipulate information- our ability to read critically and be media literate – become vital to our productivity and power in society. Worldwide, then, schooling is moving away from the dissemination of information towards teaching methods that develop learner skills in accessing, and understanding information. Invariably, this requires a move away from didactic forms of teaching towards learner-centred teaching and towards

analysing the media messages that dominate our lives. This skill-media literacy- is developed throughout the module.

The introduction of computer literacy into school curriculum entails a change in teacher and learners attitude towards teaching and learning which is in line with Outcomes Based Education (OBE) and the National Qualification Framework (NQF). Christie (1996) argues that the National Qualification Framework attempt to increase learning opportunities, eradicate potential hindrances to learning for all South African citizens, from school to out-of-school youth and children to adult, employed and unemployed. This implies that teachers must move away from the old system of teaching and adopt the system which is learner-centred such as using the Keller Plan method which promotes a good-learner relationship as the educator's role is to stimulate learners who end getting highly motivated. Interestingly, learners can find the information on modules on-line as an online lesson(Costin,1972)

## 2.6 BENEFIT OF USING MEDIA

The best thing about technology is that all students can benefit from it especially students with special needs, regardless of their age, sex, or social-economic status (Adam & Burns, 1999).

Technology-enriched environments can aid in the preparation of students for success of high-stakes standardised testing by improving critical and higher-order thinking skills. Technology can also be integrated into teaching without causing chaos.

According to Adams & Burns (1999), introducing technology into the learning environment can encourage cooperative learning and student collaboration. If they are allowed to converse, most students like to talk about their computer work and share their strategies. Classroom activities that are structured so that computers encourage collaboration build on the learners' desire to communicate and share their understanding. It takes planning and intervention to build successful cooperative groups with or without computers, but groups that use computers as teambuilding tools have a better start with collaborative work. Beyond the classroom, computer networking allows students to communicate and collaborate with content experts and with fellow students around the globe. " Using technology as an educational tool, we prepare our students for real work skills and future success in the technological society that we live in today" (Adams. & Burns, 1999). They also stated the use of real world tools, relevant experiences, and meaningful data inject a sense of purpose to classroom activity. Part of the mission of educational institutions is to produce workforce-ready graduates

who can, among other things, manipulate and analyse raw data, critically evaluate information, and operate hardware and software. This technological literacy imparts a very important set of vocational skills that will serve students well in the working world (Adams & Burns, 1999).

According to Watkins, et al, (1996) & Pomorina, (2000), computer skills and Internet technology may encourage and support effective learning. Several studies also indicate that using educational technologies including Internet to complement and enhance traditional instruction and learning will lead to effective learning outcome (Summary & Summary, 1998; Ashton & Zalzal, 2000; de Villiers, 2001; Hogarth, 2001). Effective learning refers broadly to the increased connectedness between effective learning processes (such as collaboration, interaction, participation and responsibility) and learning outcomes and objectives (higher order thinking, critical thinking and problem solving skills). The evidence shows that by preparing students with computer skills and using internet in teaching, exciting opportunities are provided to both learners and teachers that facilitate collaborative, project based and authentic activities, which are otherwise not available through the traditional face to face mode of teaching. Effective learning will determine effective learning outcomes, which in turn will build human capacity and

contribute to the economic well-being of our learners and society as a whole. Furthermore, the skills and knowledge that will be acquired through use of the computers and Internet may be advanced into the workplace. This is in line with one of the priorities indicated by the objectives of South Africa's National Plan for Higher Education: "To produce graduates with the skills and competencies required to participate in the modern world in the 21<sup>st</sup> century" Ministry of Education, BHENGU (2001:18).

## 2.8 COMPUTER LITERACY IN TEACHING

Lundall and Howell (2000:37) assert that ICTs are being used in a variety of ways to engage with teaching and learning. Traditionally technology is used to promote 'drill and practice' type exercises; to teach technology itself, to introduce new subjects like computer studies; to teach basic computer skills like word-processing. More recently, technology has been used to promote student-centred learning teamwork. In the latter approach, ICTs become integrated into the curriculum so that students acquire new communication skills at the same time as learning about a knowledge domain.

While this approach comes closer to engaging learning in ways that deepen their learning experience it is teacher-intensive in

the levels of input and facilitation required (Alexander, 1999:9). It is important to recognise that student- centred learning does not alleviate teacher workloads. Teachers are still responsible for designing learning programmes that deliver content and enable the acquisition of competencies and in addition their role expands to include facilitation, guidance and the instilling of awareness in student of their own learning patterns.

Ausburn (1996) state that there is no longer any argument that computing technology is a powerful and necessary tool for education. There is however still questions as to how this tool can best be used. This answer to this question must be a major consideration for those concerned with the future of educational technology.

## 2.9 PERFORMANCE OUTCOME

The educational research literature shows that students who make use of every learning opportunity approach the final assessment tasks with a greater likelihood of high performance (De Vita & Heftler, 2001). Fowell, Southgate & Bligh (1999) suggested that from the teacher perspective, using a selection of methods allows performance from different sources to be related. Seale, Chapman & Davey (2000), who investigated which types of

assessment students found most motivating for their learning, found that having a range of assessment opportunities was most motivating (Peat & Franklin, 2003).

Feedback on performance, especially that of a formative nature, has been shown to be a valuable tool in the learning process enabling students to assess their own progress and understanding and remedy any weakness exposed by the assessment (Clariana, 1993; Macdonald, Mason & Heap, 1999; Zakrzewski & Bull, 1999). Studies of Peck & Dorricot (1994) and Van Dusen and Worthen (1995), (as cited in Hopson, Simms, & Knezek, 2001-2002) affirms that "the use of technology applications allows students to organise, analyse, interpret, and evaluate their work". These are higher order thinking skills that are made possible with the use of technology. Meyer (2003), reveals that "there is growing evidence that technology, will improve students' critical thinking and writing."

A study by Jurich (1999) seem to agree upon is the degree of difference that positive teacher involvement made to the use of ICTs in schools. The study all suggest a positive relationship between computer use and student achievement, especially for those students most in need (poorer and disadvantaged students)



## 2.9.1 INTEGRATING COMPUTER LITERACY INTO CURRICULA

According to Bertram et al (2001: 231) instead of having a separate subject for 'learning computer', we should also introduce computer use into all our lessons. In this way, we can extend what is done in special classes- but we can encourage learners to see computers as a tool for assisting with their normal school tasks. Computer serve as resource centres. Bertram et al (2001: 223) further assert that one of the major educational uses of computer technologies is their ability to store and catalogue vast amounts of information. Individual computers, but more particularly the World Wide Web or Internet, are a powerful source on information- a massive resource- for both learners and teachers. Teachers can find huge number of lesson plans, worksheets and even tests on the Internet. Lundall and Howell (2000:39) further add that the content/ learning/ technology dilemma is one that reinforces the complexity of the teaching process. In the experiences of the US-based Institute for Research on Learning (Goldman, et al. 1999) the following are helpful ways to create a healthy balance in integrating ICTs (Information and Communication Technology) in education:

Ensure that learners are dealing with real-world problems and that their projects are as realistic as possible-it seems that when learners are designing a project for the public domain, they assume responsibilities that accompany authorship.

Ensure that there is sufficient time for playing with the technology as part of the learning experience- due to pressure on scarce resource, it seems that learners often compromise learning for the sake of completion of their projects.

Ensure that students have the necessary skills that allow them to use the information to which they have access efficiently and effectively – while learners register a need for more information to improve the quality of their projects, they aren't always competent to use information resource proficiently whether online, computer-based or hardcopy.

Ensure that learners are involved in decision-making- it appears that as learners take greater control of directing and leading their projects as part of teams, they take greater control responsibility for driving the project and publishing the limits of the technology to get it to perform to their requirements rather than conforming to its capacities.

Ensure that there is systematic assessment throughout the project- in so far as possible, learners should be evaluating their

work themselves and monitoring their creations and development against agreed criteria.

Ensure that teachers are helping learners become conscious of the content they are learning - learners can register excitement about the technology or their authorship and yet remain unaware of what they have learnt about a particular topic.

These experiences are based on the application of ICTs to learning contexts in which teachers were particularly concerned with using ICTs creatively to impart their subject knowledge. The emphasis was on learning the content rather than the technology, although added an element of pleasure for learners. Since the introduction of computers into schools, computers have been used for supplementing existing teaching methods in curriculum subjects such as English and Maths (Greenwood, 1993)

## 2.10: CONCLUSION

Technology-enriched environment can aid in the preparation of learners for success of high-stakes standardized testing by improving critical and high-order thinking skills. We cannot afford to exclude computer technology in most activities of education and training. It helps us to control our activities, however, we need to gain control over it because if it controls us it would then do harm. All learners can benefit from learning

with \*computer\* technology. Understanding various relevant methods of teaching is crucial amongst educators and integrating computer knowledge of the learner with his or her background paves the way for quality performance and continuity” (Pech & Dorricot, 1994, p119). The next chapter deals with methodology.

## CHAPTER THREE

### TOPIC: RESEARCH METHODS

#### 3.0 INTRODUCTION

This is a qualitative case study. Merriam (1998:23) states that qualitative research seeks to “understand situations in their uniqueness as part of a particular context and the interaction there”. Denzin and Lincoln (1986) assert that qualitative research is multimethod in focus, involving an interpretive naturalistic approach to its matter. This means that qualitative researchers study things in their natural setting, attempting to make sense of or interpret phenomena in terms of the meaning people bring to them. The researcher have chosen the case study in particular because it is suitable for this study, investigating the phenomenon in its natural context that is; teachers and learners activities in the classroom situation, but Yin (1983:23) says a case study is “imperial enquiry that investigates a contemporary phenomenon within its real life context when the boundaries between phenomenon and context are not clearly evident, and in which multiple sources of evidence are used”. According to Arkava and Lane (1983:12) “case studies also involve observing the behaviors of the participants in naturally occurring environments and researchers must gather data about

the participants' present state, past experiences, environment and how these factors relate to one another".

Though case study design does not confine the researcher to pre-determined data collection methods and pre-designed tools, it is important to prepare preliminary methods and tools. This research instruments to be used in this study are determined by the nature of data to be collected is categorized into primary and secondary data sources (Gross and Leibach: 1996).

### 3.1 SAMPLING METHOD

The researcher uses a random sampling method. The schools were selected from Mpumalanga Region, i.e. Intakamazolo Junior Secondary school, Emaxolweni Junior Secondary school and Makeni school. A sample of one(1) educator and ten (10) learners per school were targeted. The reason for choosing a random sampling is that, its knowledgeable and informative about the phenomena investigated.

### 3.2 PARTICIPANTS

The research participants are participants from three Secondary Schools from Mpumalanga Township. The targeted groups are grade eight and nine (8 & 9) educators and learners from

Intakamazolo Junior Secondary school, Emaxolweni Junior Secondary school and Makeni High school.

### 3.3 DATA COLLECTION

During this research the data is to be collected by means of questionnaires, observations and interview schedules, from the three sampled schools in Mpumalanga District over 2 weeks. A deliberate effort will be undertaken to reduce bias in the results in particular a thorough briefing will be conducted among the selected respondents about the purpose of the study and how the findings will be utilized and it necessary checks and balances available thus eliminating the eagerness to launch attacks and provide inaccurate responses ( Morgan : 1997 ).

### 3.4 RESEARCH INSTRUMENT

#### 3.4.1 Questionnaires.

Questionnaires to be completed by teachers, who teach computer literacy and learners, who attend computer literacy classes. Learners responded only to close-ended questions, whilst teachers were expected to respond to both close – ended and open- ended questions. Close-ended questions was suitable for learners, because they allow for speedy responses, and the language used is simple to understand. (Cooper and Schindler:

2001). Another advantage of using close- ended questions is that it reduces reactivity. Open-ended questions for teachers have an advantage in that they allow respondents to provide a wide range of detailed responses and also allow a researcher too potentially discover relevant attitudes and experiences of respondents. The advantages of questionnaires as compared to interviews (which is another tool I am going to use) is that the questionnaires are to be delivered to schools and the respondents will be completed by them at their own time within two weeks of delivery. Completing a question when a respondent is all by him/ herself is less threatening than taking to another person. Finally questionnaires are not expensive and do not take much of the researcher's time (Kumar :2000).

### 3.5 INTERVIEWS

The one to one and group interviews were conducted with the important stakeholders in the school situation, the principal and the members of the governing body. It is anticipated that, mostly, the interviews will be influenced by responses received from questionnaires and also by what the researcher will observe in the classroom situation. The interviews will try to investigate the financial problems of the school, the availability of well trained teachers in the area, the training offered to teachers in order to



adjust to new changes, and finally will try to find the levels of success and the reasons attributed to these different levels in the schools.

In the schools where there is a slow progress, ( not achieving outcomes within the expected(time ) the researcher will try to find out, what are the reasons given for this slow progress. In the schools where there is a good progress, the researcher will discuss with the stakeholders how they overcome the problems of introducing computer literacy in their schools. The researcher will ask teachers, in successful schools , what they recommended as the steps to be followed when introducing computer literacy into the school curriculum.

The advantages of using interviews are that they ensure that particulars respond to questions much clearer than in questionnaires. In an interview, the interviewer reacts to the information provided by a respondent immediately, by either requesting for clarity or by exploring additional information, unanticipated topics brought up by the respondent (Guillermo : 2001)

### 3.6 OBSERVATION

The researcher observed the process of teaching and learning in the computer classroom situation. Observation gave a researcher a chance to see for herself

what is happening in the area of research. The researcher has also able to assess the validity of the responses given by the respondents in the questionnaires and interviews. Observations and interviews allow the researcher to do more detailed and more informing work. Geertz : (1979: 25) states " Fieldwork refers to being out in the subject's work, not as a person who wants to be like them , but as a person who wants to know what it is to be like them".

### 3.7 SECONDARY DATA / DOCUMENTS

During this research data will be accessed from credible sources like annual school reports on computer technology learner's academic performance records. School news letters, newspapers, bulletins and strategy documents of the schools in district of Mpumalanga will also be examined. These sources will be analysed and will give insight into what has happened over a period of time in order to measure our findings in comparison

with information gathered through questionnaires (Kitzinger : 1995).

### 3.8 DATA ANALYSIS METHOD

The primary data collected is be analysed using Microsoft word and Excel. The questionnaires data for each respondent will be entered onto a spreadsheet using the Excel programme and do frequency counts on the responses of all the respondents. Secondary data records will be used to review strategies used by educators in dealing with computer literacy problems (Morgan and Spanish : 1984).

### 3.9 CONCLUSION

This chapter gives a detailed description of how the study was conducted. This chapter covered issues like sampling method, data collection, data analysis and research instruments.

## CHAPTER 4

### TOPIC: RESEARCH FINDINGS AND ANALYSIS

#### 4.0 INTRODUCTION

The results presented in this section are analysed from the profiles collected according to the data collection method in chapter 3. The results are presented as they are, and no additional interpretations are included from theory in this section. This is intended to help the researcher bracket out her biases and to present the results that will make a baseline data from the introduction of computer literacy in schools curriculum. It is important that the presentation of the results start with the presentation of characteristics of the participants. This is important because it gives an indication of how factors like gender, age and computer issues were incorporated into the study.

The aim of the study guide data analysis at this stage, since the results need to answer critical questions. The data is then presented in categories that are made up under each aim. This makes data to be organized in systematical and logical manner. The presentation of data also includes tables and figures. These are presented sequentially in emphasis with the data where necessary.

#### 4.1 AIMS OF THE STUDY

The aims of the study are reiterated here, because the data will be presented and categorized under each aim of the study. The data was collected to answer the following aims of the study:

To find out what problems and successes have educators experienced in their efforts to introduce computer literacy in school curriculum.

To find out whether are there any steps educators can take to overcome the problems of computer literacy.

To determine roles which can be played by different stakeholders in promoting smooth transition from the old system to new system that includes technology and computer literacy.

#### 4.2 CHARACTERISTICS OF THE RESPONDENTS

The questionnaires were administered to one (1) educator per three (3) schools and ten (10) learners per three (3) schools targeted in Mpumalanga Township. Two types of questionnaires were distributed, that is for learners and educators.

Table 1 : Gender of the respondents

<b>Gender</b>	<b>Learners</b>	<b>Educators</b>
Male	10	1
Female	20	2
Total	10	3

Table 1 shows that four (4) were male learners, six (6) were female learners whereas One (1) were male educators and two (2) female educators in grade eight (8) and ten (10) from three targeted schools.

This shows that there are more female learners in secondary schools than male learners. It also reflects that computer skills particularly the applications are still perceived as women's secretarial job and as a result the prevailing perception is that acquisition of computer literacy is for women.

TABLE 2: Age Group

<b>Gender</b>	<b>Learner</b>
13-14 years	9
15-16 years	12
17-18 years	9

Table 2 shows that 25% of learners were between ages 13-14 years, whereas 50% were between ages 15-16 years and 25% were between 17-18 years old. It also shows that computer literacy interest is generated at the entry of secondary school education and as a result more and more learners get interested in doing computer related studies after realizing the benefits or seeing the nature and extent of opportunities offered by the mastery of computer knowledge. On the other hand learners from informal settlements and rural communities have less interests in computers as in their homes do not have a supply of electricity or a panel of solar systems. This table also shows an increase of interests amongst learners between age 14 and 15 who take computer literacy and again a sharp decrease between the age 16 and 17. The reason for sharp increase is that those who want to drop out of school early want to do so with skills and accreditation to use to get jobs and fight poverty as learners are drawn from informal settlements where learners are learning for survival rather than for fun. The sharp decrease may not only be attributed to difficulty of the subject content but lack of support material and other relevant resources as a back-up and the cost of learning materials needed to have an effective grasp of course contents which are not currently provided by government at no cost amongst learners. The last 25% of learners are mostly those from township who have a good back-up from their homes such

as electricity and computers and moreover money to buy additional resources or attend other extra-tuition classes in case they have difficulty with limited times offered at the school.

### 4.3 LEARNERS RESPONSES

Table 3 Availability of computers in schools

Computer Availability	Number of Learners
Yes	10
No	20

Table 3 shows that ten of learners agreed that computers are available in their schools and 20 of learners stated that computers are not available in their school. It must be noted that the availability of computers at school does not necessarily mean that teachers were well-qualified to teach the course effectively or all learners in that school were keen to study computers. The male learners were more interested in doing handy and craft work and as a result educators were unable to pick up such interests amongst the learners. It must noted that some learners who do not have computers in their schools use computes in their homes or attend special classes with the help from their parents and have computer facilities in their homes or friend's home. This



shows a gap between the nature and extent of learning the learners are exposed to at their homes and at the schools. It is crucial that the current Outcomes Based Education (OBE) system of learning be adaptive to such circumstances.

#### 4.4. USABILITY OF COMPUTERS IN SCHOOLS

Some of the respondents ( 30%) stated that they use computers during computer periods and 70% stated that they do not use computers because they do not have them at their schools. The critical outcomes specify that the learner will communicate effectively using visuals, mathematical and language skills in the mode of written presentation. Direct access to computers will help learners to organize and manage their activities. The usability of the computer also entails the mastery of specific outcomes of Microsoft word such as opening, saving , closing the file, inserting page breaks and page numbers. In Microsoft excel, learners to work with cell ranges, add borders and patterns, align data, and in case of the Power point use slides finder, summary and expand slides. With internet, learners will correctly be able to access or visit various Websites, use internet search facilities, use e-mail addresses to communicate, list basic hardware required for dial-up connections.

#### 4.5 LEARNERS' RESPONSES ENCOUNTERED IN THE INTRODUCTION OF COMPUTER LITERACY IN THE SCHOOLS.

Most of the respondents stated that they need more computers and more time to practice in order to familiarise themselves with computers.

60% stated that they do not have computers in their schools

5% stated that they forget the signs of the keyboard.

They do not have computers in their homes for them to practice in the evenings and during school holidays.

Some of the learners stated that most of the educators are not well-qualified for teaching computers.

#### 4.6 IMPROVEMENTS /CHANGES IN LEARNERS STUDIES

70% stated that they think there would be an improvement in their studies if Government can provide them with more computers.

40% stated that there is improvement in their studies because they know how to write letters, Curriculum Vitae, assignments and tests using a computer.

#### 4.7 OTHER SCHOOLS WITH COMPUTERS IN THE AREA

TABLE 4 SCHOOLS WITH AND WITHOUT COMPUTERS

Computer schools	Number of schools
Yes	1
No	2

Table 4 shows that 10% of learners agreed that there are other schools with computers in their areas and 90% disagreed. This shows that access to computer knowledge is inequitably distributed amongst the schools. Such an experience pose a threat to access sustainability and as a result more and more learners are less likely to stick into advancement programmes of computer literacy.

#### PRACTICE ON COMPUTERS

TABLE 5

Practice on computer	Percentage
Yes	5%
No	95%

Table five shows that 5% of learners agreed that they do not practice on computers available in other institutions and 95% disagreed because they do not have money to pay for using computers. This means that poverty plays a major role as a hindrance to many learners to have access to computer knowledge hence there is a need on the side of the government to increase the capacity of learners to learn computers through provision of sufficient learning materials and resources.

#### 4.8 LEARNING ASSISTANCE WITH COMPUTERS FROM EDUCATORS

TABLE 6

Learning assistance with computer	Percentage
Yes	40%
No	60%

Table 6 shows that 40% of learners agreed that they are getting learning assistance with computers from educators, and 60% disagree because there is a shortage of computer educators. This means that most of the schools even if they have computers at school teachers are unable to provide them with computer

knowledge hence there is an urgent demand to equip the current educators with knowledge on computer usage.

#### 4.9 SUGGESTIONS MADE WITH REGARD TO COMPUTERS LITERACY AND COMPUTERS AT YOUR SCHOOL.

Computer literacy should start at lower grades in every school.

The government should supply all schools with computers so that they will fit in working environment.

All learners must all have access to computers.

It is important to have computer lessons in schools so that you won't have any problem in tertiary institutions or at work.

We need well-trained educators to teach computers in our schools.

We need more computers in our schools, so that we can have more computer classes and spend more time on computers.

#### 4.10 EDUCATORS RESPONSES

##### 4.10.1 EXPERIENCE EDUCATORS HAD IN TEACHING COMPUTER LITERACY BEFORE GOVERNMENT SUPPLIED COMPUTERS IN THEIR SCHOOLS

TABLE 7

Teaching computer literacy experience	Percentage
Yes	33%
No	67%

Table 7 shows that 33% of educators agreed that they had earlier experience in teaching computer literacy before government supplied computers in their school and 67% disagreed. This means that there is a great demand on the side of government to make sure that computer literacy be integrated as part of teachers' / educators' qualification curriculum development, or computer literacy be made compulsory for all future educators.

#### 4.10.2 PROBLEMS EDUCATORS ENCOUNTERED IN THEIR EFFORTS TO INTRODUCE COMPUTER LITERACY:

Table 8

Problems encountered by Educators	percentage
Yes	67%
No	33%

Table 8 shows that 67% of educators agreed that they encountered problems in their efforts to introduce computer literacy and 33% disagree.

The nature and extent of problems encountered are as follows:

Shortage of computers in schools

Every learner wants to be taught about computers

You need to give full attention to them otherwise out of frustrations they can break equipments leading to spiraling costs of repairs.

Teachers are not properly trained on computers

Short computer periods, need to be extended.

This means that integrating computer literacy in schools brings with it additional costs which are currently not absorbed by the current budgeting system. It also means that their shortage whilst in high demand expose them to high theft, meaning a need for quality security systems. With the high rate of children drawn from poor families computer security problems are still to provide much challenges in schools in terms of security. The lack of quality security systems pose a threat of immaturely depriving some of the learners continuity in computer literacy studies.

#### 4.11 SUCCESS STORIES EDUCATORS HAVE ACHIEVED AFTER COMPUTER LITERACY HAS BEEN INTRODUCED.

They achieved great stories because learners are excited because many jobs require people with computer knowledge and they love the computer periods more than others. It means that it would be wise to link all other subjects into a computerized environment as such a move would increase learner appreciation of the ability to master computer usage.

#### 4.12 DIFFERENT EXPERIENCES IN THEIR ENDEAVOURS TO INTRODUCE COMPUTER LITERACY INTO SCHOOLS CURRICULUM

Table 9

Differences of experiences	Percentage
Yes	60%
No	40%

Table 9 shows that 60% of educators agreed that they have different experiences in their endeavour to introduce computer literacy into the school curriculum and 40% disagreed. Some of the teachers use to apply for donations, others received them as awards for good teacher performances in sports and the work of



art. In other schools it is government and private sector led projects to upgrade and improve learning conditions in schools. There are few cases where schools were donated computers from an international donor as part of international relations development and those that decided to buy them out of their own budgets on a small scale but growing gradually.

#### 4.13 PROVISION OF COMPUTER TRAINING TO EDUCATORS BY GOVERNMENT.

Table 10

Government Computers	Provided	Percentage
Yes		25%
No		75%

Table 10 shows that 25% of educators agreed that the government provides them with training and 75% disagree. It shows that it has not yet become the government's priority or standardised programme to ensure that every teacher is computer literate and such poses a threat in ensuring that most of the learners get exposed and more over making sure that every learner has access to computer knowledge. This is a

continuation of inequitable provision of learning resources equivalent to times of discrimination and inequality.

#### 4.14 LEARNERS ABILITY TO ACHIEVE OUTCOMES OF THE SUBJECT;

TABLE 11

Ability To achieve Outcomes	Percentage
Yes	100%
No	0%

Table 11 shows that 100%, that is, all educators' responses stated that learners are showing the ability to achieve outcomes of the subject. Seemingly, computers involve theory and practice simultaneously which increases learner participation and it is more interactive. It encourages working together with learners and amongst themselves, stimulating critical and creative thinking as well as increasing their attention during practical learning sessions. Computers seem to be a fascinating technology of the twenty-first century designed to fascinate, empower and create unlimited boundaries of creativity in improving and upgrading standard of learning. In itself, a

computer is a technology for all types of learning integrating fun and games into making a meaning to education.

#### 4.5 SUGGESTIONS REGARDING COMPUTER LITERACY IN SCHOOLS

Government should provide more computers in schools so that there will be more computer classes.

More educators need to be trained about computer literacy and there must be a computer technician in each school.

Computer periods should be longer providing space for practicals. Computer literacy should start at lower grades in every school.

We must all have access to computers and teacher continual training to update themselves with current computer developments in their various functionalities.

#### 4.6 CONCLUSION :

Chapter four summarises the research findings of the study.

Educational institutions and other organizations indicate that there is a need for computer training of educators. It is clear that

in order to access new computer technology knowledge, learners need computer skills to ideally start in lower grades for basics because we cannot afford to exclude computer technology in most educational and training activities. The introduction of computer literacy in schools is still going to provide immense challenges as most of the learners come from poor families which have no provision to support the evolution of computer based learning. Computer learning is still viewed as a commercial and science learning area excluding art . This nature of perception means that the current majority of teachers, particularly from Black communities never done science and commerce in their times of study and such a prevailing scenario places computer literacy on the receiving end of the priority list. The parents have a role to play as the majority of them are working in the private sector or have started companies which rely on the use of computers to encourage their companies to make investment in schools to ensure that from schools they draw on relevant skilled personnel . The following chapter discusses the data analysis of the research study.

## CHAPTER 5

### RESEARCH FINDINGS AND ANALYSIS PART II

#### 5:0 INTRODUCTION:

Change is based on class work, home work, group work, questionnaires, interviews, assignment results, projects and the practical examination results. Computer literacy focuses on the skills to drive the computer so practical examination are crucial to monitor and evaluate progress of the learner. The nature and the extent of seating arrangement and educational resources are crucial for effective participation and development of the learner. Teachers and classes chosen became possible through the advise of the Department Of Education and the Best computer literacy training institute of kwaZulu-Natal. Teachers are experienced in computer curriculum and teaching with curriculum 2005 and committed to learner development. Teachers chosen live in or off areas from which learners come and have better understanding of the lives of learners and committed to providing them with high quality education. Learners from townships, informal settlements and rural communities. We discussed about learner's lives and interest. The researcher also worked with teachers designing and discussing areas to be observed such as the levels of computer literacy amongst the participants ranging from computer illiteracy, semi-computer literacy to computer

literacy and challenges encountered in teaching and learning effective use of Microsoft Word, Microsoft Excel, Microsoft Powerpoint, Windows Explorer, Internet and other learning materials.

#### 5:2 THE STUDY WAS GUIDED BY THESE QUESTIONS:

What experiences, interests and knowledge do learners have, that might be used as the basis for computer learning and to which the school may benefit. How do teachers and lesson content influence the level of engagement between learners and teachers. How do teachers solve the problems of introducing computer literacy into mainstream curriculum?

#### 5:3 SAMPLE OF SCHOOLS SELECTED :

Secondary School in township environment with seven insufficient number of computers but having three teachers qualified to teach computers . Secondary School in township environment with fully-fledged computer laboratory but four teacher trained to teach the entire school learners computers. Secondary Schools in the semi-rural environment with six computers having three teachers qualified to teach computers. Each of these schools have learners drawn from township, informal settlements and semi-rural environment . The

Learners chosen for this research project were from grade 8 and 12 since these schools have introduced computer literacy program to these grades . The geographical map of the area is included in this analysis and it is attached as the appendix to showcase that Mpumalanga community has urban, informal and rural communities. Photographs are also attached to showcase that other schools have the computer resources but are not enough to match the number of learners. The area of interest is that there are schools with computers but only to find that teachers themselves are not well-conversant with the use or professional use of them.

### **SCHOOL A: : Number of Learners ( Township School)**

**Table 12**

Status	Grade 8	Grade 9	Grade 10	Grade 11	Grade12
Female	34	30	28	25	23
Male	31	27	28	25	23
Township	28	20	19	15	12
Informal settlement	30	25	30	34	35
Semi-rural	2	14	7	6	3

This table shows the combination of learners drawn from various communities in school A who are learning computers. What interesting aspect in this case involves learners from semi-rural establishment where the infrastructure is so poor that we hardly have electricity meaning that learners once they are home they are doubly disadvantaged by poor environment and lack of support from the parents.

## **SCHOOL B ( Number of Learners From Township School)**

**TABLE 13**

Status	Grade 8	Grade9	Grade10	Grade11	Grade12
Female	27	28	26	27	27
Male	15	17	18	17	23
Township	29	30	24	26	32
Informal-settlement	11	14	18	14	14
Semi-rural	2	1	2	5	4

This table shows that the dominance of learners from townships pose a threat to learners from semi-rural communities. The learners from the semi-rural communities are very few and as a result their special needs for excellency in their studies may be ignored. The educators would assume that all learners from townships have good supportive infrastructure. It also shows that participation from the semi-rural communities has a lot of fluctuations meaning that most of them are drop-outs and only realised late in life to come back to school to finish their education. The number of those who realise the importance of education is still minimal if one considers the adult population of people living in rural communities.



## **SCHOOL C : Number of learners ( Semi-rural School)**

**Table 14:**

Status	Grade8	Grade9	Grade10	Grade11	Grade12
Female	23	25	20	27	23
Male	21	13	11	12	17
Township	0	0	0	0	0
Informal-settlement	15	10	12	14	25
Semi-rural	29	28	19	25	25

This table shows that in semi-rural schools there are more female learners compared to male learners and there are no learners from the township but there is a participation of learners from informal settlement and semi-rural communities. Most of the learners are learning computers with little relevance to the environment where they come from. The environment is not lacking support in terms of the infrastructure but also in terms of local human resources who can play as role models to generate interests amongst the learners. It means that it is only during school hours that they get proper orientation to computer literacy program. The educators need to tailor-make these computer literacy programs to be relevant to needs of learners from the rural establishment otherwise they would learn the skills that are not applicable to their environment and cause a spiralling of unemployment once they have completed their studies and more over their performance would be far below the expected standard of performance.

The above table shows that learners from townships do not attend semi-rural schools and there is a high drop out rate from both boys and girls.

Table 15

NUMBER OF LEARNERS WHO RESPONDED TO QUESTIONNAIRES AND INTERVIEWS IN GRADE 8 AND 12 :

Status	Grade 10	Questions	Interviews	Grade 12	questions
Female	59	59	20	52	52
Male	52	52	10	40	40
Township	22	22	5	26	
Informal settlement	73	73	20	61	61
Semi-rural	20	20	5	25	25

NUMBER OF TEACHERS WHO RESPONDED TO QUESTIONNAIRES AND INTERVIEWS ACCORDING TO SEX, SCHOOL, GRADES, EXAMINABLE, NON-EXAMINABLE

Table16

Sex	Schl:A	Schl: B	Schl: C	Question s	Interview s
Female	2	3	2	8	8
Male 1	1	1	2	4	4

The table shows that only twelve teachers were interviewed, four males and eight female teachers.

Teachers chosen for this research are trained to cover the following topics on computer literacy:.

- Introduction to computers.
- The evolution of the computer, showing diagrams
- Introduction to Windows Part 1and 2
- Introduction to Microsoft Word Part 1 and 2
- Introduction to Microsoft Excel Part1 and two
- Internet
- E-mails
- Computer viruses
- Conclusion

#### 5:4 EXPECTED OUTPUTS

A learner must be able to run the computer independently without any assistance after the completion of the session.

A learner must be able to open, operate, save and retrieve the file either in harddrive or stiffy disk

A learner must be able to use the internet and send e-mails.

A learner must be able to protect the computer from potential viruses.

#### 5:5 NATURE OF RESOURCES AVAILABLE TO LEARNERS :

Libraries

Newspapers

Magazines

Television set

Computers

Skilled persons in communities and some are students

#### 5:6 RESULTS FROM OBSERVATIONS :

Most of the computers used in schools are second-hand donated by big companies.

Most of the teachers are not properly qualified to teach computers.

Out of the three schools, one school has brand new computers awarded by the department of education.

There is insufficient resources such as lack of computers and disks for learners to save their documents, no printing machines and paper and as a result teachers need assistance to buy computer ink.

#### 5:7 METHOD OF ASSESSMENT :

Allocation of performance awards are done as follows:

- Theory and fundamentals of computer : 25%

Class work, Homework, Assignments :and projects 10%

Tests : 10%

Practical examinations : 55%

#### 5:8 TYPES OF QUESTIONS FOR THE TESTS AND EXAMINATIONS

One word answers essay

Problems-solving

Definitions

TABLE 7

## LEVELS OF PERFORMANCE BY LEARNERS GRADE 10 AND 12

Status	Grade 10	Pass rate/t/f	Pass rate/assignment	Pass rate/pr/ex/x	Grade 12	Pass rate/pr/exam
Female	59	55%	30%	20%	52	54%
Male	52	45%	30%	15%	40	50%
Township	22	50%	70%	75%	26	50%
Informal settlement	73	30%	20%	15%	61	28%
Semi-rural	20	20%	10%	3%	25	15%

The table 7 shows poor performance by informal settlement and semi-rural community learners and there reasons are that there is no electricity, water, computers at home in informal settlements and rural communities.

## 5:9 OTHER SUBJECTS TAUGHT BY TEACHERS

In these undermentioned subjects taught at school, learners tend to like computer more because they are able to learn about them using the computer as a learning tool and they feel that they can do the work faster . In subjects like maths and accounting the built-in programs help them to find answers quicker. With English, they are able to know when they have written a wrong spelling and when their grammar is distorted. Through, the use of internet they are able to learn more about Lifeskills by just typing in the word 'lifeskills'. They can write IsiZulu on computer which make them excited because they initially taught that computer was for Western things only.

Maths:

Lifeskills

English:

Accounting:

Physical Science

IsiZulu:

B.E:

Biology:

Economic management :

Subjects you have the worst teacher

The learners never mention 'computer studies' as linked to the worst teacher but the results excluded also economics management and Biology.

None:	8%
English:	10%
Gen. Science	20%
Accounting	30%
B.E:	2 %
Maths:	30%

## 5:10 LEARNERS's RESPONSES TO MICROSOFT WORD QUESTIONS:

As a basic literacy information for grade 10 and 12 their responses indicated that 70% of learners were good , 10 % fair and 20 % were poor in Microsoft Word. Learners stated that the function of the Ms Word were to write notes, letters and create documents while others did not know the correct answers.



## 5:11 LEARNERS RESPONSES TO MICROSOFT EXCEL

Most learners did not know what this was all about. There was no responses. Learners did not state the function of Microsoft Excel that it is used for calculations, budgets and spreadsheet for numbers.

## 5:12 LEARNERS RESPONSES TO INTERNET QUESTIONS.

The schools are not yet connected to Internet . So even the teachers were still discussing how to get linked into Internet. The principal did not even know that the department of education provides the budget for Internet linkage in schools.

## 5:13 QUESTIONS ABOUT THE TEACHERS.

90 % of the learners were happy with their teachers because allowed them to play games on computer, teach them in Zulu when they do not understand things, friendly and not rushing them. 10% of learners also indicated that they were shouted at if

they used the computers in the absence of the teacher concerned in class. The learners living in informal settlement presented challenges of not having access to electricity and computers once they are at home.

## 5: 15: TEACHING AND PARENTS INVOLVEMENT

Dimensions of parents as major contributors in curriculum development were erroneously left out, hence, their input in this data is missing. There were constraints on the teachers because they were bound by the curriculum and time resources.

## 5:16 DATA WERE COLLECTED BY THE FOLLOWING METHODS:

There were interviews with teachers. These interviews were collected on the number of occasions, some with individual teachers, but especially as a group. The purpose were to gather information on learners lives, interests and the ways in which the learners related to their everyday experiences and their formal learning of computers. The researchers also worked with teachers in preparing and responding to computer lessons challenges.

## 5: 17 CLASSROOM OBSERVATIONS:

The researcher was present to observe activity and theory based computer lessons. English language proved to be a major stumbling block. Though English was used as the medium of instruction learners communicated in Isizulu amongst themselves during the session. Observations involved watching and listening to learners as they acted with each other watching what they did and wrote down personnel comments when they completed their activities. In-depth interviews were conducted with learners. There were pre and post probe questions. The purpose of these interviews was to hear from learners how they took home what they learned at school, and what knowledge and experience and questions from home they brought back to school. Learners were given home assignments where they were asked about their homes, out of school experience and the ways they used computer literacy at home.

## 5:18:METHODS OF TEACHING:

Telling method

Question and Answer Method

Learner centred approach

Teacher centred approach

Content centred approach

## 5:19 DETAILED NOTES FROM INTERVIEWS, AND CLASSROOM OBSERVATIONS:

The researchers focused on aspects which concentrated on the level of engagement. The content the kind of computer literacy knowledge the learners were contributing as well as the use learners and teachers were making of that computer literacy knowledge.

## 5:30 FINDINGS AND DISCUSSIONS:

Children's lives and experiences::

Living conditions in Impumalanga township kwaZulu-Natal are well documented through research studies, census information, newspaper stories, poverty, gangstar activity, political violence and substance abuse. Teachers offer similar descriptions adding characteristics of hardness, communal hardship and leadership optimism if learners and teachers can work together harmoniously through improved communication.. Teachers identified three groups: township groups, informal settlements group and rural group. Township group live in proper houses, sufficient income enable the children to go to the shopping centers, watch movies and buy treats. On the other hand the children from the informal settlements live in home made shacks,

losely packed sometimes without piped water and electricity, providing meager shelter from rain, cold and accidental fires. Much of life is in the street gangs, physical abuse and sexual abuse.

All children are interested in computer technology and how things worked but they have experienced different technologies, such as the use of calculators, game machines, cellular phones, radio and cars. Most of them show interest in living things. All enjoyed factual information. All interested in traditional sayings and teaching. In other worlds see culture as important. Township children are more orientated learning for fun and informal settlement learning for survival.

## 5: 20:0 LESSONS PLANS AND CLASSROOM OBSERVATION:

Same computer lessons taught in classes, however, they were developed differently. It also depends on teacher's personality. Not all learners have access to computer lessons in a classroom.

## 5:21:0 ANALYSIS AND FINDINGS:

Analysis of interviews show that learners relate strongly to content that deals with their lives in the township and informal settlements. The greater the degree of connectedness with

learning material, the deeper the levels of engagement with each other and the teacher for example, internet knowledge can help informal settlements to overcome fire out-breaks. During the teacher directed phase of learning, learners were inclined to engage freely with the teacher but they were reluctant to do so if the content did not relate with experience. Secondly the learner engagement was higher during the activity phase of the lesson irrespective of the content.

In planning of activities teachers made the considerable efforts to link the activities to learners' everyday experiences such as improving living conditions by knowing various career opportunities which increases a person's options in life and time-management. While there were variations between teachers for each teacher the teachers were generally likely to grasp and build on learner's comments and ideas during the lessons. Unplanned opportunities were generally ignored teachers and learners alike seemed to make the transition on between the informal, and unstructured every day knowledge and the formal structure domain of school computer literacy. Part of the issue is diversity within each class and three identifiable groups of learners. There were variation between teachers and for each teacher. The teachers did not sieze the opportunities for building systematic computer literacy understanding that were available, nor feed that understanding back to children's every

day knowledge and interests. The study produced evidence that the use of every day knowledge in computer literacy increases engagement of learners. The conditions in which the learners live and events that have a profound influence on their lives as well as things that interest them in the surroundings need to be researched more deeply including computer literacy. The computer literacy programme needs to be incorporated into effective curriculum design.

Data showed that curriculum is intense and well-regarded by learners and educators. Educators and learners enjoyed the introduction of computer literacy and felt they had much more to learn. The data showed that teachers in the classroom employ various approaches such as teacher centred, more participative and learner centred. The educators scored high on classroom management, planning and content knowledge, however, they scored less on creating stimulating innovative environments and opportunities for learners to explore problem areas and display higher order thinking skills such as using information from the computer to solve introduction of computer literacy challenges in the current curriculum, for example searching through the Internet to find the good practice around the world and also using Internet Websites in finding ways and methods of improving their current levels of teaching styles and methods.

Teachers and learners very enthusiastic about manuals, their usefulness and ease of use though the language to some learners is totally inaccessible. Learning computers as a game proved to be popular amongst the learners which contradicts teachers interests and time allocated for computer hand-on experience. Of particular concern was the short duration of exposure and insufficient computers. Other concerns were teacher centred lessons and failures to provide opportunities for learners to engage in problem solving and creative critical thinking.

## 5: 22 CONCLUSION

After engaging in such analysis, it becomes apparent that there is a dire need to integrate computer literacy as integral part of the mainstream learning process. Such an initiative cannot be achieved in a vacuum but it can be fostered in an environment where there is going to be improvement of schools curriculum and down-to- earth commitment by government and private stakeholders to make necessary capital and financial investments to improve learning and living conditions of learners so as to produce quality outputs of learners. Much has to be done to equate the living standards of learners from informal settlements and those living in rural communities. Creating an



environment of education for relevance is crucial in integrating diverse life experiences and styles of learners and the computer is the right educational instrument to achieve such. Though there has been an oversight of parents' role it appears obligatory that they get involved at early stages as the introduction of computer requires a change of the mindset and costs and to parents who are currently not working particularly from the informal settlements would feel the hit as they may also need to establish supporting learning environment for their children so as to ensure that what is learned by their children has a direct bearing in changing their lives for the better. The current pass and coping rate of learners and their motivation to do computers offers a renewed energy of getting learners interested in education.

## CHAPTER 6

### TOPIC : CONCLUSION AND RECOMMENDATIONS

#### 6:0 INTRODUCTION

This chapter evaluates the summary of the report in order to help readers who do not have time to read the whole report. It also includes specific suggestions of what can be done to improve the learning and teaching situation in countering challenges related to integrating computer literacy into school's mainstream curriculum..

#### 6:1 THE RESULTS

The results of the questionnaire, assignments and the examination indicate that Ms Word is the most successful module followed by Ms PowerPoint and Ms Excel. It is possible that learners concentrate more on the three modules, because they are popular. They achieved well even if they were tested on parts they did not cover in the classroom. For example, group 1 { case study one } did not learn slide transition and animation, but they organized the relevant information for themselves. This indicates that they were demonstrating attainment of the second critical

cross-field outcome, which is about organizing their activities. No one told them to do their curriculum vitae, but they simply organized themselves. As a result of the Internet modules they ended up communicating with Cellular Phones using the Internet. However, there are some elements, which indicate that they did not get sufficient practice or access to the computers, because of different reasons. One of the reasons mentioned is that over the weekends teachers do not allow them to come for practice and moreover learners in the informal settlements did not have computers in their homes and the provision of electricity. Other learners cannot afford to pay additional R 30.00 for use of computer laboratory during study hours. It may be possible that there is a gap between what they learned in classroom and what they should apply as their needs are unique. They may be learning only to pass the examination only, not much on the application side.

## 6.2 RECOMMENDATIONS

### 6. 2.1 TO EDUCATORS AND POLICY-MAKERS:

encourage more learner-centred teaching approach

Increase number of schools having access to computers

In-depth training of teachers to teach computers in a manner that integrates learner's knowledge experiences, interests and living conditions.

Allow learners to have more exposure to use of computers

### 6.2.2 TO LEARNERS

Learners must be punctual in the class. Do assignments as teachers prescribe on time.

Learners from informal settlements must learn to share resources with the haves.

### 6.2.3 TO CURRICULUM DEVELOPERS:

Make sure that schools have properly qualified teachers and undergoing ongoing training on matters related to technology and computer use.

### 6.2.4 TO COMMUNITY LEADERSHIP:

Elected Councillors must ensure that people living in informal settlements have access to electricity so that the children can have access to information through having access to radio,

television and reduced computers prices so that most parents can afford to buy them.

#### 6.2.5 TO GOVERNMENT :

Since education department is both a national and provincial competencies ( that is, it has a national minister and provincial Minister unlike Department of water and science and technology where ministers only exist at the National level only), it is advisable that the local governments be mandated to offer developmental services to schools such as provision of computers, supporting continual training of teachers involved in computer literacy projects.

Motivate teachers who do well in these programmes by providing incentives such as exchange programmes with other international schools or local private schools which have advanced ways of teaching computers.

### 6.3 REVISION

Revision sessions should be increased in order to accommodate those who cannot manage the practice sessions, because of different reasons.

### 6.3.1 ACCESS TO COMPUTERS

Access to computers should be increased. This may help the learners to finish their assignments, practice and whatever they learn in the classroom.

### 6.3.2 TECHNICAL SUPPORT

On-line lessons should be introduced to support learners. This suggest at least one 3.5 floppy disk {stiffy), which is programmed for the learner to use even at home or libraries or internet café's over the weekend to those who can afford it. It should be a step-by-step program that teaches the learner even in the absence of the teacher / tutor or home based subject advisor.

### 6.3.3 DEMONSTRATION

Each module should be demonstrated to the students to show them how it works in a certain context of a practical situation. For example, if PowerPoint was taught it would be important to use a Video Projector in order to motivate the learners. By so doing it may stimulating them to go and use the PowerPoint

application effectively, especially those who ought to do presentations. The same applies to learners who are interested in games, word processing or desktop publishing.

### 6.3.5 CAREER GUIDANCE

Presentations of other subjects should be conducted. Such presentations should not be limited only to computer literacy classes, but it must include subjects for further studies as learners continue with their studies . It should also include some loans / bursaries / sponsorships, because other learners are from poor families who cannot afford to buy expensive computer based learning materials. Some learners are expecting the teachers to tell them where to go for further studies / employment after they finished their studies or to earn a living as they are from poor of the poor families.

### 6.3.6 OUTCOMES

Teachers, tutors, technical supporters and learners should be given all the outcomes of the computer literacy classes that has to be achieved, before the course starts. This would help them to see which of those outcomes are not achieved, and then work on them. The outcomes {competencies} go beyond the book content, because they specify even the behavior of a learner

after completing any module. For example indicate specific outcomes of computer fundamentals, Microsoft Word, PowerPoint, Microsoft Excel and Internet as follows:

A: Specific outcomes of Computer fundamentals:

The efficient ability of the learner to point out the following:

Name or list and describe three essential computer principles

Define the concept of computer

Describe the origin of computer

Name the main purpose for which computers can be used.

Name four generations of computer development.

Name and describe the major components of computer.

List the main parts of computer operating systems.

Name various types of the input devices.

Name various types of the storage devices.

Name different types of computers available today.

Name and discuss four types of software.

Name or list different types of application software available

Describe the purpose of the utility software.



## B: Specific Outcomes of Microsoft:

Learners will correctly perform the following tasks:

- Create new Word document.
- Type text into the word document, align and change text case.
- Save the word document
- Change view of the active Word Document.
- Close the Word Document
- Work with multiple documents
- Change font size, type and colour
- Apply different bullets and numbering formats in the Word format
- Indent and un-indent text
- Use left, right, centre and decimal Tab stops.
- Apply borders and shading to the word document
- Change line spacing of paragraph
- Set margins of a document.
- Set paper size and page orientation of the document
- Create a table and add text to the table
- Add rows and columns to the table and change row/ columns.
- Find and replace text as well as cut/ copy and paste
- Insert symbols

- Insert page breaks and page numbers
- Use thesaurus, check, spelling and grammar

## C SPECIFIC OUTCOMES OF MICROSOFT EXCEL

Learners will perform the following task:

Name some activities suited to the use of a spreadsheet.

Describe a manual spread sheet.

Describe some problems associated with manual spreadsheet.

Explain the meaning of an electronic spreadsheet.

Name advantages of using an electronic spreadsheet package.

Start Microsoft Excel windows.

Enter data into the cells and name the address of the active cell.

Use Help features and close Excel window.

Explain the purpose of f5 Got To key.

Work with more than one Workbook and arrange them.

Move around the worksheet area so that they can access the cells of the worksheet area.

Close worksheet and open an already existing worksheet.

Edit data into the worksheet, move data and copy data.

Work with cell ranges.

Work with relative and Absolute cell references

Insert and delete cells, rows, and columns

Name, Insert, rename, delete, move and copy  
worksheets.

Format data with bold, italics and underlining feature.

Change font, font colour, size, and background colour

Align data

Change number format.

Resize column row and use increase.

Add borders and patterns.

Hide and UN-hide and protect data in rows and columns

Protect worksheet and workbook

Adjust the paper size.

Adjust print quality

Set page numbering.

Set and remove page breaks

Set Margins.

## D SPECIFIC OUTCOMES OF MICROSOFT POWERPOINT

Learners will perform these tasks adequately:

- Start Powerpoint presentation and use different slides.
- Create new presentation and open existing presentations.
- Use different types of views
- Use office assistant
- Use slide finder, summary and expand slides
- align text
- Change fonts, font size and colour.
- Use master slide
- Use slide colour scheme, different background and design.
- Edit, select, move, copy and delete text.
- Insert object, graphs, organizational charts and clipart into slide.
- Save and close presentation documents
- Use multiple document interface.
- Use slide transitions and custom animation.
- Set up a slide show, show type, slide and use advance slide.
- Print presentations and check spelling.
- Name four presentation guidelines

#### E) SPECIFIC OUTCOMES OF THE INTERNET AND E-MAIL.

Learners will correctly demonstrate their abilities in the following :

- Access and visit different websites
- Use internet search facilities
- Use-email to communicate
- List basic hardware required for dial-up connection.
- List services required for dial-up connection.

#### 6.5.0 LIMITATIONS

The study has the following limitations which are listed below:

Learners tried to give the researcher only positive answers, in order to impress the researcher, because she is one of their teachers and the teacher lives in the vicinity where learners and other teachers from the chosen schools live. The researcher had to play a double role {observer & teacher} during observation. Therefore, he had to record the whole observation at the end of the lesson. Other teachers and learners felt that the researcher was trying to expose their weaknesses and felt uncomfortable and hence hid some of the information. Educators and learners tried to use the opportunity to express themselves if there was

something that they were unhappy with. Such information may be a misleading information, which may not relate to the critical, questions. Funds for the project limited the quantity and quality of pictures {Plates and Figures} for illustration in this study. The numbers of learners to respond fluctuated as others end up being drop-outs due to deaths change of place of residence particularly those who live in informal settlements. My study did not look at computer science education as it is currently not yet in the schools targeted. In there is no coverage of programming courses offered at school whilst one is aware that such curriculum is being offered in other schools. The focus of my research focused mainly on applications and interaction of learners with computers and educator's methods of presenting computer literacy subject matter.

## 6.6 CONCLUSION

The study took about 10 months. It involved three (3) educators and thirty (30) learners in grade 8 and 10 learners who were only visited for one module in order to triangulate data collected from the 2

groups. Even if they had some other commitment they responded very well, because I never had less than 110 respondents .This

type of participation that the respondents understood the importance of this research topic. It has come to my attention that almost all schools are busy developing outcomes / competencies for all courses that they are offering to help learners solve localized problems and be relevant to their special interests.. The institutions are forced to define their outcomes clearly, because the new system of education and training in South Africa {OBE} requires well defined outcomes for any training that is offered in South Africa.

This topic also includes the evaluation of teaching and learning resources. Some of those recourses are computers, books and others that are used by teachers when preparing for lessons. I suggest that they should extend the time for the course in order to accommodate all the methods of teaching that are commonly used for technical subjects (such as computer based designs and drawings and produce good results. Almost all organizations include computer technology in their development {including educational institutions}.This means, they need to participate in the topics that include computer technology. Books and other training materials should be evaluated in order to define outcomes / competencies of all courses clearly.

Therefore, this topic is important for all education and training institutions in order to be in line with the new system of

education and training and more over overcome challenges that go together with needs pertaining to integrating computer literacy into mainstream curriculum of learning and development.



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## ANNEXURES



## ANNEXURE 1

### DRAFT QUESTIONNAIRE FOR EDUCATORS WHO TEACH COMPUTER LITERACY

1. Did you have earlier experience in teaching computer literacy before the government supplied computers in your school?

Yes

☐

No

☐

2. Are there any problems have you encountered in your efforts to introduce computer literacy in the school curriculum?

Yes

☐

No

☐

If yes, please mention them:

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3. What success stories have you as an educator achieved after computer literacy has introduced?

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Do you think schools have different experiences in their endeavors to introduce computer literacy into the school curriculum?

Yes

☐

No

☐

Why? -----  
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5. Is there an educator/ educators in your school who has experience in teaching computer literacy?

Yes

☐

No

☐

6. Does government provide any training in computer literacy for educators in your area?

Yes

☐

No

☐

7. Are learners showing ability to achieve outcomes of the subject?

Yes

☐

No

☐

Explain how?

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8. What suggestions would you like to make with regard to computer literacy and computers at your school?

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## DRAFT QUESTIONNAIRE FOR LEARNERS

Does your school teach computer literacy?

Yes

No

☐☐

Do you attend computer literacy in your school?

Yes

No

☐☐

When do you use computers in your school?

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4. What problems have you encountered in the introduction of computer literacy in the school curriculum?

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5. Are there any improvements / changes in your studies?

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6. Is there any other institution with computers in your area besides your school?

Yes                      No

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7. If yes, do you get to practice on those computers?

Yes                      No

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8. Are you getting enough assistance in learning how to use computers from your teachers?

Yes                      No

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9. What suggestions would you like to make with regard to computer literacy and computers at your school?

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DRAFT INTERVIEW SCHEDULE FOR IMPORTANT  
STAKEHOLDERS (PRINCIPAL, TEACHERS AND MEMBERS  
OF THE GOVERNING BODY AND/OR LEARNERS)

Have you encountered any problems in your efforts to  
introduce computer literacy in the school curriculum?

Yes

☐

No

☐

If yes, what are those problems?

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2. What success stories can you tell from the introduction  
of computer literacy into the curriculum?

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3. What steps have you taken to overcome the problems of  
computer literacy?

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4. What roles can you play in promoting smooth transition from the old system to the new system that include technology and computer literacy?



## QUESTIONS TO LEARNERS WHO ARE DOING COMPUTER LITERACY

Where do you live?

What is your age?

What is your sex?

Where do your teacher live?

How many are you in a class?

What language is used in a class ?

How are students seated in class?

How do students work in class of the time?

Do teachers give notes?

How do teachers give notes?

If you develop your own notes, how do you do that?

How often a week do you get homework?

What type of homework your teacher gives?

How often a week does you teacher mark homework?

Do teachers give projects to do by your self?

What type of homework do you prefer?

How often do you write tests a month?

Generally what types of questions does you teacher set in tests?

Which type of assessment do you prefer?

Are you satisfied with your tests marks?

What do you understand by computer literacy?

What are computer lessons do you do?

What do you understand by Microsoft word?

What do you know about Microsoft Excel?

What do you know about Internet ?

Why computer literacy is so important in your education.?

What do you know about Computer viruses?

Which one do you prefer?

Which ones are challenging?

What type of assistance do you need?

## APPENDIX – 02 ATTACHMENTS

Questions Administered to learners

Availability of computers in schools

Usability of computer in schools

Problems encountered in the introduction of computers in school

Improvements/ changes in learning computer studies

Practice on computers

Learning assistance with computers from educators

Suggestions made with regard to computers

Suggestions made with regard to computers literacy and computers in your school.

Questions Administered to Educators.

Experience educators had in teaching computer literacy before government supplied them in schools.

Problems educators encountered in their efforts to introduce computer literacy.

Success stories educators have achieved after computer literacy has been introduced. Different experiences in the

endeavours to introduce computer literacy into school curriculum.

Provision of computer literacy to educators by Government.

Learners ability to achieve the outcomes.

Suggestions regarding computer literacy in schools.

Intakemazolo School



Township School = X<sub>1</sub>

## Isibukosezwe High School



Township School =  $X_1$



