

# **THE MANAGEMENT OF COMPUTER LITERACY IN ESIKHAWINI TOWNSHIP SECONDARY SCHOOLS**

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## **1. Introduction**

The project focused on the management of computer literacy in Esikhawini township secondary schools. Founded in about 1972, Esikhawini is a township to the east, and at least 7 km away from the University of Zululand, and 18 km away from Empangeni/Richards Bay. Since its foundation, Esikhawini Township is dramatically increasing its population day by day, most of its population being the black community. The Esikhawini population totals about 30 000.

Esikhawini township is divided into four sections, namely: J1, J2, H1, H2 and is surrounded by rural subsections, namely: Gobandlovu, Dube village, Mkhobosa, Mandlankala, Port Dunford and Mpembeni.

Esikhawini has many schools ranging from pre-schools, lower primary, higher primary and senior secondary schools. The total number of learners in this township is about 15 000. Secondary schools found in Esikhawini Township include: Dlamvuzo, Mdlamfe, Tisand, Khula, Hlamvana, Qantayi and Matamuzana Dube. The number of learners in these secondary schools is approximately 5500 with 120 educators. Learners mostly come from poor families (low income earners), since families with better resources take their children to multiracial schools in Empangeni/Richards Bay.

### **1.1 What is computer literacy?**

According to Hornby (2000:231) computer literacy is defined as the competency of using computers for learning, work and leisure. Luerhrman (1981) sees computer literacy as the ability to do computing and not merely to recognize, identify, or be aware of alleged facts about computing.

Computer literacy implies some skill or knowledge which is necessary for every person to be able to cope with our computer-centered society, thus the ability to use computer well is an asset. According to Bristow (1997) computer literacy can be the ability to turn a computer on and to read and select form a menu. He further states that computer literacy can also

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encompass a course designed for students who wish to gain an overall understanding of computers, where students are exposed to integrated application programs, introduced to hardware of a typical system, introduced to terminology of computer systems and expected to do various assignments on the computer.

According to Eisenberg and Johnson (2005) computer literacy can mean knowing the basic operation, terminology maintenance of equipment, knowing how to use computer-assisted instructional programs, having knowledge of the impact of technology on careers, society, culture and computer programming.

For the purposes of this paper computer literacy will be defined as the study of obtaining skills for the effective utilization of a computer as well as obtaining knowledge concerning the terminology associated with computer literacy.

## **1.2 Computer education in schools**

According to Future Kids of South Florida (1997) the need for computer education in schools is creating a tremendous problem and a great opportunity at the same time. All schools are struggling with how to integrate technology into the classroom and curriculum, that return must be measured in terms of increased learning opportunities for our children and the increased skill level expected of teachers. Schools administrators and teachers surveyed in America reflect the same general thoughts about the state of computer education in schools, i.e.:

- Many schools have made large investments in hardware and software. Some have built computer laboratories; some have placed computers in the classrooms.
- Few teachers are computer illiterate, meaning they are not comfortable using computers and fully exploiting the power of the many tools they offer, such as databases, spreadsheets, multimedia, graphics and telecommunications.
- Most schools believe that computer technology will increase learning in the classroom.
- The immediate provision of a national competency standard for computer literacy in secondary schools. Similar to the national reading, writing and numeracy benchmarks, the standard would specify the minimum acceptable benchmarks for aspects of computer literacy at different year levels.
- Ongoing professionals' development for school teachers to ensure they are confident and competent in using information technology effectively. IT skills should be embedded into pre-service teacher education.

- Government must ensure that all schools have access to an affordable broadband connection that meets their IT needs, regardless of geographic location. Schools must also be adequately funded so that technical support staff can be appointed to manage the network of software and hardware systems.

### **1.3 Key components of Technology Plan in schools**

According to Future Kids of south Florida (1997) businesses have long since learned that purchasing hardware and software is secondary to successfully implementing technology. Educators have learned that people do not learn effectively without a curriculum. Unfortunately, however, these factors continue to be overlooked in most schools technology plans.

The three key elements necessary for successfully implementing a technology plan are:

- Appropriate hardware and software
- Computer-literate staff
- Technology curriculum

If any of these components is missing, then the use of technology is limited and the return on the schools substantial investments in technology is greatly reduced.

### **1.4 Staff development**

As schools implement state-of-the-art technology plans, the need to improve the technology skills of teachers becomes paramount. The first step to ensuring that a student become literate is ensuring that staff is computer literate. This is achieved through implementing a structured comprehensive staff development program that builds fundamental computing skills in such areas as word processing, telecommunications, spreadsheets, multimedia and more. (Future Kids of South Florida, 1997).

A staff development program should feature individualized attention and hands-on computer activities to guarantee effective learning. Also critical to the success of such a program is instruction on how to apply newly acquired computer skills to classroom integration and to the development of teachers own personal lesson plans. Staff development ultimately should empower teachers with the ability to create their own technology-integrated materials rather than simply implementing “canned” projects prepared by others, (Future Kids of South Florida, 1997).

## **1.5 Selecting Hardware and Software**

Faced with the prospects of upgrading or purchasing new equipment for computer labs and classrooms, educators find themselves thrown into an arena full of clashing operating systems, developments uncertainties, and software turmoil. Schools must buy software the way businesses but it and they must measure performance, price, and software stability (Future Kids of South Florida, 1997).

## **1.6 Computer Literacy Curriculum for Students**

According to Future Kids of South Florida (1997) following the model offered by FUTUREKIDS, the curriculum should integrate key technology objectives with software specially selected for its academic value and ability to help students gain lifelong high-tech skills. Objectives should be defined by a Scope and Sequence document and cover 10 core technology areas: desktop publishing, telecommunications, spreadsheets, databases, programming, multimedia, applied technology, word processing, operating systems, and graphic design.

A powerful technology curriculum is also grade and age appropriate, emphasizing problem solving through project-based, interdisciplinary activities. Just like mathematics, science, or social studies curricula, lessons plans should build on previously gained skills to ensure an effective learning experience. To chart student progress, the curriculum should include assessment and grading procedures. (Future Kids of South Florida, 1997).

## **2. Background**

Founded in about 1972, Esikhawini is a township near to the University of Zululand with a population of about 30 000. The town has about eight secondary schools catering for the high school pupils. Five of these schools, i.e. Dlamvuzo, Mdlamfe, Tisand, Khula, and Hlamvana were targeted for the project.

The researcher has observed that learners in Esikhawini secondary schools complete school without computer literacy skills. Additionally, it has been observed that when learners complete their matric, they find it difficult to use computers at tertiary institutions. The researcher assumed that if learners could reap benefits from computers at school, computers can be increasingly used for life long learning.

## **3. Aim of the study**

The aim of the study was to examine the management of computer literacy in secondary schools in Esikhawini Township.

#### **4. Objectives of the study**

- To establish the availability and functionality of computers in secondary schools in Esikhawini Township.
- To find out whether computer literacy skills classes are being offered in secondary schools in Esikhawini Township.
- To find out whether learners are interested in obtaining computer literacy.
- To establish the problem facing the teaching of computer literacy in Esikhawini Township secondary schools.
- To find out whether the department of Education (DoE) has introduced computer literacy in the curriculum of secondary schools.

#### **5. Method**

The researcher in this study used quantitative approach, particularly the survey research method. According to Popenoe (1993:39) quantitative methods are designed to study variables that can be measured in numbers, such as income, age, and educational level.

For the purpose of the study interviews and observations were used as data gathering methods. Interview and observation schedules were constructed. The interviews were held with the 5 designated computer teachers in each school, while the researcher personally observed the computer facilities available. Data analysis was done using manual methods.

#### **6. Results**

##### **6.1 Interview Results**

###### **6.1.1 Availability of computers**

With the exception of Dlamvuzo secondary school, all the other secondary schools (Mdlamfe, Tisand, Khula and Hlamvana) are in possession of computers. However, Dlamvuzo secondary school has been promised computers and a computer laboratory for the school by a private company.

###### **6.1.2 Utilization of computers**

The computers are mainly used for administrative purposes and for literacy classes amongst scholars.

At **Mdlamfe** they are used for administrative purposes e.g. typing and after school, computers are used for computer literacy classes.

**Tisand** use computers for literacy classes and compu-typing.

At **Khula** computers are used for learning purposes, and by educators to look for information from the Internet and for administrative purposes, and at

**Hlamvana** they are used for administrative purposes

### 6.1.3 Software availability

All the schools use Microsoft products especially Windows 98. the following list also shows the other products used by the respective schools:

**Mdlamfe** – Microsoft Windows 98

**Tisand** – Office 2000, Windows 98

**Khula** – Microsoft Windows XP, 2000, Office 2000

**Hlamvana** – Microsoft Windows 2000

### 6.1.4 Hardware availability

The schools are in possession of printers and faxes. Hlamvana also has scanners.

Table 1 shows the hardware available:

SCHOOL	HARDWARE
Mdlamfe	Computers, printers, fax
Tisand	Computers, printers, fax
Khula	Computers, printers, modem, fax
Hlamvana	Computers, printers, scanners, fax

*Table 1: Hardware availability*

### 6.1.5 Textbooks

Textbooks are extremely important in an educational environment as they both aid the teacher and student in gaining a clear understanding of the topic. However, the study showed that prescribed textbooks are not available in all the schools, resulting in teachers compiling notes or creating their own textbooks.

At **Mdlamfe** there are no prescribed books in the school, the teacher compiles from different computer textbooks, while at **Tisand** a teachers compilation is used. **Khula** uses the textbook “*Word processing with Microsoft Word and Microsoft Excel*” by Sandra Jacobs and Marina Myburg. **Hlamvana** does have handbooks although classes only start next year.

### 6.1.6 Departmental contribution

Ideally the Department of education should take responsibility for all costs involved in teaching computer literacy at high school level, especially in previously disadvantaged areas where funds are hard to come by. The study showed that **Hlamvana**, **Khula** and **Tisand** received a departmental contribution in the form of books, but **Mdlamfe** does not.

### 6.1.7 Maintenance of computers

Maintenance of computer laboratory requires some technical skills and should ideally be performed by dedicated technicians. However at Mdlamfe and Tisand the teachers fix the machines by themselves, while Khula and Hlamvana take the machines to technicians in case of problems.

### 6.1.8 Problems concerning the utilization of computers

Several problems are experienced:

At Mdlamfe the machines break easily since they are used daily, especially hardware like keyboards and mice are problematic.

Tisand experiences problems with outdated software. However both Khula and Hlamvana reported no problems.

### 6.1.9 Computer budget

Computer laboratories are expensive to run and maintain, thus a budget should be available for that purpose. Table 2 shows how budgeting is being done:

SCHOOL	BUDGETING
Mdlamfe	No proper budgeting for computers
Tisand	The school requests assistance from parents
Khula	There is a budget in place
Hlamvana	Still have to do the budgeting

*Table 2: Computer budgeting*

### 6.1.10 Management of computers

Ill-managed computer laboratories can lead to severe losses in both hardware and software. Supervision should be available at all times. The study showed that at:

**Mdlamfe:** computers are not utilized unless there is supervision by the teacher.

**Tisand:** the laboratory introduced rules to be followed by the users.

**Khula:** educators monitor time table at all times, no class may use the laboratory without an educator.

**Hlamvana:** are still waiting for classes to start.

### **6.1.11 Grades doing computers**

At the entire schools grade 10, 11, 12 are doing computer literacy classes.

### **6.1.12 Computer teaching problems**

The following problems are experienced:

**Mdlamfe** – no textbooks for the teacher and learners and there is a shortage of computers.

**Tisand** – each class consist of +- 40 learners and there are 20 computers thus making it difficult to conduct classes properly.

**Khula** – learners don't have text books.

**Hlamvana** – none

### **6.1.13 Students interest in computers**

At all the schools students are highly interested in learning computer literacy.

## **6.2 Observation schedule**

The following observations were made of the facilities available for computer literacy teaching:

**Mdlamfe** – there is no laboratory at all

**Tisand** – enough space was found to move around, the ventilation is there by Samsung air-conditioning and a writing board is built on the wall, Tisand laboratory is tidy and up to the standard to be used for learning purposes.

**Khula** – the space is rather too small to move around freely, but ventilation is available, aircon is there and a writing board is on the wall and the lab is properly functioning.

**Hlamvana** – the lab is not yet utilized

## **7. Conclusions**

Esikhawini secondary schools are in possession of properly functioning computers with computer literacy classes being offered in all these secondary schools except for Dlamvuzo. The learners in these secondary schools are highly interested in learning computer literacy classes.

However, though the Department of Education has made computer literacy part of the secondary schools curriculum, a shortage of computers and textbooks is seen as a major problem in all Esikhawini secondary schools.

## 8. Recommendations

Considering what has been found during the study, the researcher would like to make the following recommendations:

- Each and every school must build a computer laboratory and be fully networked to cater for computer classes.
- Schools must employ computer educators that have proper computer qualifications.
- The department of Education must prescribe one software for all the schools, because some schools are doing programming whereas some are not and they are also doing totally different computer applications.

## 9. References

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