

**TITLE OF THE THESIS: THE DEVELOPMENT AND
IMPLEMENTATION OF COMPUTER LITERACY
TERMINOLOGY IN ISIXHOSA**

THESIS

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BY

SCARA

Msindisi Sam

^

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**School of Languages: African Language Studies
Rhodes University
Grahamstown**

Supervisor: Professor Russell H Kaschula

Co-Supervisor: Doctor Lorenzo Dalvit

DECLARATION

I the undersigned, hereby declare that this thesis is my own original work and has not, in its entirety or part, been submitted at any university for a degree

SIGNED:.....

DATE:.....

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ABSTRACT

This thesis addresses the issue of accessibility of technology in our society. This involves the accessibility of the ICT infrastructure by the disadvantaged communities. In South Africa, due to the imbalances of the past and other factors, language has been a barrier to the access of information and other basic services by the indigenous people of this country. English hegemony has deprived the marginalised people the right to participate and benefit from the new technologies. English continues to be a dominant language in the field of ICT and technology. Moreover, ICT tools have been instrumental in improving access to basic services and information all over the world. These tools also play a role in improving the social and economic status of everyone. The two essential aspects that play a role in worsening the digital divide are insufficient proficiency in the language used for instructions and the poor accessibility of the ICT infrastructure.

This thesis presents the findings of research carried out in two different sites. This research explores the adoption of ICT terminology developed in isiXhosa. This terminology has been developed as part of the SANTED (South Africa – Norway Tertiary education) multilingualism programme which is housed with the African Language studies section within the School of Languages at Rhodes University. The first test site was in rural area in Dwesa in Transkei. This is part of an ICT for development project called Siyakhula. This project is a joint venture between both Fort Hare and Rhodes universities. Moreover, this project is managed by Telkom Centre of Excellence (CoE) and CoE. The second test site is based in Grahamstown and forms part of the eYethu project which is a joint venture between the Department of Education and Coe, both at Rhodes University. The main aim of using two test sites was to track language varieties associated with the use of African languages.

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CHAPTER 2

CORPUS LANGUAGE PLANNING WITH REFERENCE TO ISIXHOSA

2. Introduction

In this chapter I explore the contribution of the individuals, organizations and government structures that have been involved in developing terminology and promoting African languages. There are certain bodies that have taken the initiative or responsibility for terminology development and the promotion of African languages. These include the PanSALB (Pan South African Language Board) which is a quasi-government structure, the NLS (National Language Service) in the Department of Arts and Culture, research organizations/ institutions such as PRAESA (Project for Alternative Education in South Africa), the Institute of Kiswahili research and Translate.org. I will also look at the importance of ICT in order to locate my study within this particular theoretical paradigm, and I will emphasise how corpus needs to be created in this area in order to contribute to educational development.

The issue of the promotion of African languages is discussed with referenced to the South African Constitution. This chapter also discusses the language policy. Before discussing the current language policy it will be necessary for me to consider a brief background of the South African language situation during the apartheid regime. After the apartheid regime terminated, nine indigenous languages of this country were afforded official status. This implied the need to consider language planning for this country. Language planning involves status, corpus and acquisition planning. This chapter will also discuss language planning, paying special attention to corpus planning.

This research deals with the modernization of African languages. This chapter discusses corpus development in isiXhosa and other African languages. The development of ICT terminology into African languages is one aspect of the intellectualization of African languages which also promotes multilingualism in education.

2.1. The impact of the Apartheid regime on South African languages

In this section I discuss the South African language background. This involves the discussion of the South African language situation before, during and after the apartheid era. This will give an overview and also consider some of the factors that have had a negative influence on the development of the indigenous languages of South Africa. Kamwangamalu (2000:120) summarizes the history of language planning in South Africa. He further argues that this history can be described in terms of four important phases i.e. Dutchification, Anglicization, Afrikanerization and lastly Democratization.

Kamwendo (2006) discusses the settlement of the first missionaries (i.e. Dutch-speaking settlers) who immigrated to the Cape in 1652. He further says that this area became one of the places of Dutch political and economic influence. That was when Dutch became the official language of the Dutch colony of the Cape of Good Hope. Raidt (1999) cited in Kamwendo (2006) states that at the time, in 1814, when South Africa was colonized by the British, English became the dominant language used in the public domain. This provides an idea of when English hegemony began to take root. Since then English was used as an official language and it became the language of power. When English was the official language, the Boers were also excluded from the juries because their knowledge of English was too little. Almost everything that they were doing was determined by the English (Reitz 1900:10). In education, Dutch children had to use English as the medium of instruction rather than their first language. This happened for a long period of time as the Dutch children could not use their mother-tongue. The Dutch speakers disliked this policy as they saw it as a threat to their language, culture and identity. To fight against this policy, they established some private schools where Dutch was the medium of instruction. Hexham (1981:132) cited in Kamwangamalu (2001:366) states that maintaining the Dutch language was essential to preserve their national identity. Then later Dutch and English became the co-official languages. This took place under the 1910 Constitution of the Union of South Africa. In 1925 Afrikaans replaced Dutch as an official language. Afrikaans developed here in Africa, in the seventeenth century, and it inherited the Dutch vocabulary and this was a language that was shaped by colonists, Asian slaves, local Khoikhoi and Coloureds (Raidt 1999:163). Then when Afrikaans

inherited the Dutch vocabulary it subsequently became an official language with English. Immediately when Afrikaans was afforded an official status its speakers made an effort of modernizing it to such an extent that it ended up being used as a medium of instruction in some schools and universities (Kamwangamalu 2001:367).

When the National Party became the governing party of South Africa, in 1948, it encouraged the use of African languages in an attempt to retribalise Africans into separate ethnic groups (Kaschula and Anthonissen 1995:98). At that time African black people were discouraged from learning English and Afrikaans in South Africa. Kaschula and Anthonissen further explain that these people were only encouraged to learn these languages for the purpose of communicating in the workplace and black people were classified according to their ethnic groups on the basis of their language. The government justified their policy of categorizing people according to their different groups and communities separately as an excuse to relocate them to regions where their mother tongue was spoken. The African languages were promoted in the homelands, whilst English and Afrikaans were getting full support from the government. At this time when the National Party was in power a lot of changes were implemented within the education system in order to establish firmly an inferior education system for Africans (Rima 1998:16).

All the efforts that were initiated to develop Africans were discouraged, such that the Catholic and Protestant church missions were commanded to surrender the schools they had established for Africans. The Bantu Education Commission established a separate educational system for African-language speakers, that was controlled by the central government instead of the provinces (Rima 1998). Kamwendo (2006:56) also makes it clear in his paper that the Bantu Education Act of 1953 placed African education under the control of the state. He further states that at that time the African schools were linguistically zoned or marginalized. Their home languages were not developed in order to be used at the upper levels. The Africans were constrained from acquiring quality education. The mother tongue was only used as the medium of instruction in the lower standards (i.e. from kindergarten up to standard seven). After standard seven the medium of instruction was English and Afrikaans (Kamwendo 2006:56). At the time of mother-

tongue education, Schools for Africans were demoralized by not getting sufficient funding for their education. Schools for Africans were in poor condition. They were inadequately equipped with necessary resources such as textbooks, professional teachers and classrooms. But the schools for the whites were taken care of (Rima 1998:15). The purpose of doing this was to marginalize Africans. The insufficient funding discouraged Africans from developing adequate resources that are written in their languages.

Because of the Afrikaners oppressing governance during apartheid, Afrikaans was stigmatized by the Africans as the language of racist oppressors and English on the other hand, though it is a colonial language, was perceived positively as the language of democracy and it was the language most demanded by black South Africans. The language conflict became worse in 1976 when the ruling government imposed that Afrikaans must be used as the medium of instruction in African schools (Kamwendo 2006:56). Kamwendo extends his argument by stating that the Soweto uprising in 1976 was not just the refusal of using Afrikaans as the medium of instruction but also a rejection of the whole apartheid system. Since 1948 up until 1994 South Africa was officially a bilingual country under the ruling of the Afrikaner National Party. Kamwendo perceives the policy of having these two languages (English and Afrikaans) as the official languages as an irony, and he challenges the then policy makers by arguing that these were the languages of the minority white population (Kamwendo 2006).

In concluding this section concerning the apartheid background, Kamwangamalu (2000:102) summarizes the history of language planning in South Africa. He further argues that this history can be described in the order of four important phases i.e. Dutchification, Anglicization, Afrikanerization and lastly Democratization. These four phases illustrate the language situation of South Africa, starting from 1652, when the Dutch officials settled in South Africa. Later the British colonized South Africa from 1795 and then again from 1806 – 1948. From 1948, the Afrikaners ruled the country up until 1994 when South Africa became a democratic country. The democracy in South Africa brought about the recognition that South Africa is a multilingual rather than a bilingual country. Later in 1996 because of the new dispensation, South African policy developers finally presented and officially amended the South African Constitution which

now states that South Africa has eleven official languages. In the following sections of this chapter I will statistically present and discuss the South African official languages.

2.3. South African language statistics

The South African population is not only characterized by cultural diversity but it is also multilingual. Kamwangamalu (2000:363) states that the languages spoken in South Africa are estimated at around 25. Out of those languages only 11 were afforded official status. English and Afrikaans, formerly the only two official languages of the country, are among those languages and the rest are African languages which were chosen because of the high numbers of language speakers (Kamwangamalu 2000:263). The table below illustrates the statistics of the languages of South Africa according to their percentages.

Table 1: The South African official languages

LANGUAGE	NUMBER OF SPEAKERS	PERCENTAGE	GEOGRAPHICAL AREAS OF CONCENTRATION
IsiZulu	10 677 305	23.8	KwaZulu-Natal, Gauteng
IsiXhosa	7 907 153	17.6	Eastern Cape
Afrikaans	5 983 426	13.3	W. & N. Cape, Gauteng
Sepedi	4 208 980	9.4	Gauteng, N. Province
Setswana	3 677 016	8.2	North West, Gauteng
English	3 673 203	8.2	KwaZulu-Natal, WC, Gauteng
Sesotho	3 555 186	7.9	Free State, Gauteng
Xitsonga	1 992 207	4.4	Gauteng, N. Province
Siswati	1 194 430	2.7	Mpumalanga, Gauteng
Tshivenda	1 021 757	2.3	Northern Province
IsiNdebele	711 821	1.6	Gauteng, Mpumalanga
Other	217 293	0.5	Gauteng, KwaZulu-Natal

Source: Statistics South Africa (2003) by Olivier (2006) at

(<http://www.cyberserv.co.za/users/~jako/lang/index.htm>), and the Geographical

Areas of concentration were sourced from Kamwangamalu (2000:364).

As demonstrated in Table 1, it is clear that the majority of South Africans are African languages speakers. IsiZulu is in the first place with the highest number of speakers followed by isiXhosa. It is important that I mention that my research is based on the development of African languages (particularly isiXhosa) and from table 1 we have seen that isiXhosa is the second-most spoken language in South Africa with 17.6 % and the most spoken language in the Eastern Cape with 83.8% (Statistics South Africa, 2001).

The use of isiXhosa in other provinces is as follows:

Free State (9, 4%), Gauteng (7, 5%), KwaZulu-Natal (1, 6%), Mpumalanga (1, 3%), Northern Cape (6, 3%), Northern Province (0, 2%), North West (5, 4%) and Western Cape (19, 1%). (Silinyana, 2000).

The figures above reveal that the strongholds of isiXhosa are Eastern Cape and the Western Cape provinces. In the Western Cape the majority of the population are Coloured people (54, 2%) and their mother tongue is Afrikaans. IsiXhosa first language speakers still constitute a large group (19, 1%) (Silinyana, 2000:13). This means that each and every province in South Africa has a fraction of isiXhosa speakers although it is mainly represented by huge groups in the Eastern and Western Cape provinces.

2.4. Language policy in reference to the South African Constitution

South Africa is one of the multilingual and multicultural countries within the African continent. Cultural and linguistic diversity reflects the multitude of languages spoken in any specific country. The academic organization called UNESCO in an article (2003) argues that one of the most urgent challenges facing the world is diversity. In this paper, this organization claims that estimations suggest that half of the languages within countries characterized by linguistic diversity will disappear in the coming years (UNESCO, 2003:12). I argue that most of the languages that are subjected to this language death are the underdeveloped languages. Underdeveloped languages comprise of languages that are not used in the modern disciplines, including education and in the field of science and technology. All the languages (e.g. English) that are used in these

domains are perceived as the languages of power and knowledge (Kaschula and Anthonissen, 1995:59).

Many scholars believe that language cannot be discussed in isolation to culture. Alexander (2000:3) states that another source of the power of language is its function as a transmission mechanism of culture. To supplement this argument, Kaschula and Anthonissen (1995:21) precisely state that language and culture are interrelated. They further say that language denotes our identity, whereas the culture preserves our values and beliefs. This clearly shows that if our indigenous languages are not recognized in the public domains, then identity change will gain increased momentum. In order to preserve language, culture and status, language policy should be implemented.

The Language-in-Education policy which was adopted in 1997 states that:

“In terms of the new Constitution of the Republic of South Africa, the government, and thus the Department of Education, recognizes that our cultural diversity is a valuable national asset and hence is tasked, amongst other things, to promote multilingualism, the development of the official languages, and respect for all languages used in the country”.

After Apartheid when South Africa became a democratic state, the government consolidated the new Constitution, in 1996, which allocated eleven official languages. In this section I am intending to briefly discuss language policy and how it was seen during the apartheid regime and also during the post-apartheid years. I will also pay special attention to the new South African Constitution which informs the current language situation in South Africa and advocates for linguistic equity.

2.4.1 The South African Constitution

Chapter one, section 6 (1), of the Constitution stipulates the official languages of the Republic as follows: Sepedi, Sesotho, Setswana, Siswati, Tshivenda, Xitsonga, Afrikaans, English, isiNdebele, isiXhosa and isiZulu. Section 6 (2) recognizes the

historically discouraging use and status of the indigenous languages of the South African people and it emphasizes the fact that the state must take practical and positive measures to improve the status and promote the use of these languages. It further stresses that the government must take the responsibility of assuring that the official languages are used in the national and provincial levels for governmental purposes and also the municipalities must take into account the language usage and the preferences of their community members. Section 6 (5) states that PanSALB is assigned to take responsibility for the development and promotion of the official languages particularly the previously disadvantaged languages.

Section 29 (2) states: “Everyone has the right to receive education in the official language or languages of their choice in public educational institutions where that education is reasonably practicable. In order to ensure the effective access to, and implementation of, this right, the state must consider all reasonable educational alternatives, including single medium institutions, taking into account – (a) equity; (b) practicability; (c) the need to redress the results of past racially discriminatory laws and practices” (The South African Constitution, 1996).

Section 30 advocates that everyone has the right to use the language and to participate in the cultural life of their choice, provided that they abide by the laws of the Constitution.

Section 31 promotes the inter-communication within a community and it actually emphasizes that people of the same culture, religion and language must be granted the right of practicing and/or using all these in a non-offensive manner.

Section 32 states that everyone has the right to access any information. This means that despite your proficiency in English an individual has the right to use public, private or any other resources in any language. In this instance I argue that the people, confined by their language proficiency, from the previously disadvantaged communities have the right to access ICTs or any other viable resources using their own languages (especially the official languages). This clearly shows that there is a need for consolidating our efforts in order for the underdeveloped official languages to resume a high status equal to

the former official languages (these languages are still dominant in education and in other public domains).

2.4.2. Language Policy

This section discusses language policy. Firstly, it provides a language policy definition. My discussion of language policy will be based on the South African language policy during apartheid and also post apartheid. My main intention is to discuss the State's language policy when it became a democratic country. In the context of my research it will be ideal that I also discuss language policy in education.

The educational language policy, which every country should have is about setting out the relationship between the teaching of the various languages and the levels at which they are taught (Bamgbose 1991:106 cited in Van Huyssteen 2003:19). According to Bamgbose (1991:62) language mainly has three objectives in education, i.e. literacy, medium of instruction and subject. Msimang (1992:41) advocates that school is still the best place to develop and maintain a language.

The language policy is objectively designed to maintain ethnic diversity and the politics of compromise (Ngcobo 2003:86). In regard to politics, the policy reflects various voices and interests. This is a deliberate and supports the political policy of multilingualism aimed at the creation and strengthening of national identity in close association with national political power. Ngcobo (2007:09) alludes to the fact that the aims of the language policy are in line with the constitutional provision chapter 1, Section 6 Subsection (5) of the national Constitution which states that the Pan South African Language Board established by national legislation must promote and create conditions for the development and use of all official languages, Khoi and San languages, Sign languages and should also promote and ensure respect for all languages commonly used by the communities in South Africa.

This language policy is instrumental to the nation-building through multilingualism and modernization in the African languages. Ngcobo (2003:88) states that the formulators of

the language policy acknowledge the fact that the policy could be developed if there was a broad agreement on linguistic diversity, social justice, the principle of equal access to public services and programmes, and respect of human rights.

2.5. Language planning

The indigenous languages are associated with the lack of teaching and learning resources (Van Huysteen 2006:247). The status elevation of the previously marginalized languages implied the need for modernizing them by developing terminology and producing other resources (Kamwendo 2006:57). In this section I will discuss language planning and implementation in order to inform some of the ongoing initiatives to develop the previously marginalized languages. These initiatives are undertaken in order to elevate the indigenous languages for them to be used equally with other official languages.

Ngcobo (2007:4) states that the term language planning was first used by Haugen in his introduction of what he said to be a four-fold planning model. He further says that Haugen described the stages of language planning as involving the selection of the norm, codification, implementation and elaboration. Cooper (1989:182) states that it is difficult to come up with a precise definition of what language planning is since this is influenced by many changing social factors such as economics and politics. There are many different approaches to define language planning and many definitions have been attempted. In his book, Cooper (1989:182) stipulates a few definitions which appeared after the publication of Haugen's 1959 article. In this section I intend to discuss a few different definitions in order to give an overview of the scholar's perception about language planning.

Language planning is a deliberate language change i.e. changes in the way the language is written or spoken or both that are planned by organizations that are responsible for such purposes or given a duty to fulfill such purposes (Rubin and Jernudd 1971b:xvi), cited in Cooper (1989:182). Rubin and Jernudd (1971b:xvi) cited in Cooper further state that language planning is focused on problem-solving and is characterized by devising and evaluating different approaches to solving language based problems. This definition of language planning makes it clear that for language planning to be implemented there

should be a responsible organization. The Constitution, section 6(2) chapter 1, states that the state must take practical and positive measures to elevate the status and advance the use of the official languages particularly the indigenous languages of South Africa. This mandate is predominantly directed to PanSALB which, as mentioned before, is a quasi-government structure established by the national legislation to promote and create conditions for the development and use of the official languages. The NLS is also mandated to support PanSALB in this work.

In their language planning definition, Kaplan and Baldauf (1997:3) explain that the language planning we mostly hear about is the one undertaken by government and its intention is to solve complex social problems. They further argue that there is a great deal of language planning that is carried out in other societal contexts at different levels and for other purposes. They further motivate their explanation by saying that language planning is an attempt by someone to modify the linguistic behavior of a community for various reasons. The efforts of developing a language might come from different angles but at the macro level some support and elements of government are usually involved (Kaplan and Baldauf 1997:4). Their definition implies that, at a certain stage, there is a need to liaise with the government when any organization or language structure is developing language resources e.g. terminology, dictionaries, and so on. When an organization is developing some teaching and learning material, I think it is quite helpful for them to communicate with government and other structures that are involved in the development of language resources (such as terminologies) as this might help reduce duplication and abundance of terms. African languages are associated with the lack of terminology development as stipulated by scholars such as Mazrui (2002) cited in Dalvit et al. (2005:5). The issue of language varieties also needs to be taken into consideration as stated by Barkhuizen (2001) cited in Dalvit et al. (2005:5). To avoid duplication of terminology, it would be wise for the terminology developers to co-operate.

Tauli (1974:56) cited in Cooper (1989:182) states that language planning is the methodical activity to regulate and improve the existing languages or creating new common regional, national or international languages. Linking this statement to my research, I will outline the need for terminology development in isiXhosa. This will

improve the existing isiXhosa corpora. Our indigenous languages are mainly underestimated because of their poor terminology especially in the modern fields such as Science and Technology (Mazrui 2002 cited in Dalvit et al. (2005:5).

Cooper (1989:) cited in Nover (2006:5) advocates that language planning refers to deliberate efforts to influence the behavior of others with respect to the acquisition, structure [corpus], or functional allocation [status] of their language codes. This definition clearly shows that for the language to be planned there should be a clear understanding of what the problem is. The process of planning a language should be deliberate. This does not just take place automatically. If we take a closer look at the definition itself, it comprises of the three different forms of language planning. These are acquisition planning, status planning and corpus planning.

(a) Status Planning

Status planning refers to deliberate efforts to allocate the functions of languages and literacy within a speech community. Kamwendo (2006:65) says status planning involves a status choice of a particular language or variety by making it an official language, national language, etc. He further says that this is a process that determines what languages shall work in what domains. To substantiate this, Van Huysteen (2006:17) explains that status planning deals mainly with language policy and its implementation as well as the selection of languages used for official purposes and education. The Constitution – Act 108, section 6 advocates for the status elevation of the indigenous languages. Because these languages have been afforded an official status, the Constitution stipulates that there must be promotion and development of these languages. The Constitution (sections 6 and 29) calls for the national and provincial governments to utilize the official languages for the purposes of government and emphasizes the right of receiving education in any official language where that education is reasonably practicable.

(b) Corpus Planning

Corpus planning refers to activities such as coining new terms, reforming spelling and adopting a new script (Cooper 1989:186). From the three different forms of language planning, corpus planning is the most important one for my research. It deals with the development of terminology to modernize a language. Cobarrubias and Fishman (1983:13) cited in Ngcobo (2007:5) state that since corpus planning focuses on the development of the body or form of a language, provisions concerning scientific and technological terminology relates to the corpus of the language. This statement strongly emphasizes that all the terminology development in any language even if it is scientific still forms part of the corpus of the language. The computer terminology assessed in this research forms part of the isiXhosa corpus. This terminology development implies the intellectualization of isiXhosa as we know that African languages have inadequate terminology particularly in the field of science and technology. Bamgbose (1989:) cited in Kaplan and Baldauf (1997:38) defines corpus planning as those aspects of language planning which are primarily linguistic and hence internal to language. He further lists those aspects related to a language as follows: orthographic innovation including design, harmonization, change of script and spelling reform; pronunciation; changes in language structure; vocabulary expansion; simplification of registers; style; and the preparation of language material. I refer to Bamgbose's definition as a very complex corpus planning definition as it comprises of all the aspects involved in the definitions provided by other authors. Cooper (1989:186) in his definition, defines corpus planning as a form of planning that refers to activities such as coining of new terms, reforming spelling and adopting a new script. All these aspects mentioned by Cooper (1989:186) in this definition are common in the definition made by Bamgbose. My point of departure is that the definition provided by Bamgbose seems to be the most appropriate one for corpus planning as it is sufficiently wide-ranging.

(c) Acquisition Planning

Acquisition planning deals with the teaching and learning of a language. It also entails the teaching and learning of languages, whether national or foreign languages. It further

involves the attempts to increase the number of users (Cooper 1989:121). It is also part of my research interest to improve the use of isiXhosa. Once this terminology is accepted by the students that will mean isiXhosa will be used as a teaching and learning language. Because this study deals with the development of ICT terminology and also promotes the use of isiXhosa, my focus will mainly be on corpus and status planning.

2.6. Language planning implementation

The purpose of this section is to discuss some of the structures and organizations that play a role in the development of African languages. This involves the implementation of language planning for the recognition and implementation of multilingualism.

2.6.1. Government Structure

2.6.1.1 National Language Service (NLS)

This is a governmental institution which is within the National Department of Arts and Culture (DAC). Its task is to meet the constitutional obligations on multilingualism by managing language diversity through language planning, human language technologies and terminology projects and providing a translation and editing service in the official language.

Its responsibility is to develop and protect the 11 official languages through policy formulation, legislation and the implementation of the language policy in order to allow South Africans to realise their language rights. This institution comprises of units, i.e. Language Planning Directorate, Terminology Coordination Section Directorate, Human Language technologies (HLT) Directorate and Translation and Editing (T&E) Directorate. All these units have their core functions which can be accessed on their website. These functions entail the coordination of terminology lists, facilitation of translation and interpreting with the government and public, facilitation of the establishment of the Language Units within government departments, etc.

2.6.1.2 Pan South African Language Board (PanSALB)

PanSALB is a quasi-government structure which was established under the Pan South African Language Board Act no. 59 of 1995 (Marivate 1998:1). Marivate states that PanSALB was established to provide for the recognition and implementation of multilingualism in this country. She advocates that this board also has a role to play in the development and promotion of the previously marginalized languages. South African Constitution, Chapter 1 section 6(5), states that PanSALB was established by the national legislation for it to promote and create conditions for the development and use of all official languages. The statements made above imply that PanSALB was established to initiate, facilitate and empower the use and development of the official languages particularly the previously marginalized languages. Its role is to liaise with the state structures, civil society and the non-governmental organizations to contribute towards the development and use of the official languages (PanSALB, 1998).

PanSALB started with 13 members who were not chosen according to the eleven official languages but they had expertise in the following fields: translation, interpreting, lexicography, language teaching and learning, language planning and language legislation (Marivate, 1998:2). These different fields were established in order to coordinate all the efforts concerning projects such as lexicography and dictionary compilation, etc. The PanSALB representatives within their different fields organize meetings with some associations and provincial educational departments in order to support the initiatives in the development of the South African languages.

In the lexicography and terminology development field, PanSALB emphasizes that the development of a language is a long-term process. The board also acknowledges one of its activities which is to ensure that the process of developing languages is undertaken. To ensure this PanSALB had established the National Lexicography Units (NLUs). These lexicography units have been established for all eleven official languages. The staff members of PanSALB have been trained to improve their expertise in these fields (PanSALB, 2001). Because my research is based on the terminology development for the previously marginalized languages (particularly isiXhosa), it is necessary for me to

explore more about other projects involved in the development of terminology and lexicography. This will enable me to discuss some of the similarities, differences, challenges and difficulties encountered in the process of developing terminology in African languages.

2.6.2. Research projects and/or Organizations

2.6.2.1 Project for the Study of Alternative Education in South Africa (PRAESA)

The Project for the Study of Alternative Education in South Africa (PRAESA) is a research and development unit at the University of Cape Town (UCT). This institutional organization was established in 1992 mainly to struggle and fight against apartheid education. Even today this organization continues to be involved in the democratization of South African society specializing in the key area of language-in-education policy implementation. This projects' focus areas include language planning and policy formulation at national and provincial government levels, developmental research into multilingual classrooms, learning support material, publications, etc. PRAESA is an established research project which has published a number of papers in the development and promotion of African languages. Well known scholars such as Neville Alexander, Kathleen Heugh, etc, have also been involved in this project. They have published widely in the field of African languages. They have written papers on topics such as mother-tongue education, multilingualism in education, etc.

Discussing PRAESA in my research is quite crucial as it also comprises of a terminology development unit. Its main focus is to write technical dictionaries particularly in isiXhosa and other African languages in the following learning areas: Natural Science and Mathematics. These technical dictionaries developed in isiXhosa will be helpful in my research in terms of the comparison of the strategies used. PRAESA's target audience for these glossaries and vocabularies is the Intermediate and Senior Phase of primary schooling level. This project involves the collection of scientific concepts and terms in African languages. This entails the coining and borrowing of these terms, mainly from English. These terms are developed to such an extent that they could be clearly

understood by the target audience. Moreover this project entails the reviewing of the old Bantu Education textbooks, orthography and terminology used during the Apartheid era (<http://web.uct.ac.za/depts/praesaa/>).

PRAESA is aiming at intellectualizing and modernizing technical glossaries and vocabularies for the former marginalized indigenous languages. Its mission involves the elevation of the status and awareness for the use of these languages (mainly the recent official languages) in high status domains. Moreover, this project is also keen to promote multilingualism and use of African languages as medium of instructions.

2.6.2.2 Translate.org

Translate.org is a non-profit organization which is localizing or translating Open Source software into South Africa's 11 official languages. This organization was established in 2001 with the vision of providing Free Software translated into these languages (<http://translate.org.za/>). Open source software is the software that has no restrictions. It allows users to do a lot of things with this software, mainly to access the source code. Users can edit and redistribute the software for free. 'Free' means that the license does not restrict a user from selling or giving away the software that has been modified (<http://www.opensource.org/docs/definition.php>). Examples of open source software are OpenOffice (equivalent to Microsoft office), Mozilla FireFox (equivalent to Internet Explorer), etc. OpenOffice.org and Mozilla FireFox are available in all 11 official South African languages. Translate.org has also made these software packages available on the internet. Anyone can download and install them onto your computer. This organization has created fonts for Tshivenda and a South African keyboard on top of their localizations of GNOME, KDE, OpenOffice.org, Firefox and Thunderbird (<http://translate.org.za/>). To facilitate translation, this organization uses a web portal called Pootle. The word POOTLE stands for PO-based Online Translation/localization Engine. Pootle is a free software that you can download and one can run his/her own copy. Pootle allows people to participate in the development of languages. Translate.org has also created mailing lists for all these languages. These mailing lists are used for translation discussions.

Below I will stipulate some of the translation projects involved in translate.org. These are the translation projects that are running in all the official languages. I will discuss a few languages to illustrate the progress of these projects.

I will illustrate this process by using isiXhosa and isiZulu just to show the evidence of the translation in progress. There are at least 24 translation projects into the South African official languages. Each language has a number of projects to translate. From the tables below, one can see that this is work in progress.

IsiZulu

Project Name	Translated (Words)	Untranslated	Total
FireFox & Thunderbird	41092	3403	44495
Firefox 2.0	41092	3404	44496
Glossary	0	559	1789
Gnome	44827	207	45351
Mozilla suite	28210	1948	32195
OpenOffice.org	71681	0	71681
Pootle	95	1912	2021
Terminology	0	558	1784
TuxPaint	417	2165	2669

IsiXhosa

Project Name	Translated (Words)	Untranslated	Total
Asterisk	2305	245	2550
Creative Commons Licenses	0	4280	4280
E-Yethu manual	393	18628	19021
FireFox & Thunderbird	41215	1904	43123
Firefox 2.0	41215	1904	43123
Glossary	4670	2459	7129
Hai Ti	90	2976	3066
KHangman	841	0	841
KTurtle	0	46	46
Mozilla suite	25097	4060	32195
OpenOffice.org	71681	0	71681
OpenICDL	171	65709	65880
Pidgin	7250	6599	15038
Pootle	218	939	1274
Terminology	7670	0	7670
TuxPaint	1527	1027	2669
Webmail	12668	3119	15797

2.6.2.3 Kiswahili language development

Kiswahili (or Swahili) is an African language spoken mainly by the people of Eastern and Central Africa. This language is an example of a well developed African language and for this reason I have decided to include it in this discussion. The language is spoken by people who live in Tanzania, Kenya, Uganda, Rwanda, etc. Kiswahili is a national language in Kenya, Tanzania and Uganda

(<http://www.gicom.com/cyberswahili/swahili.htm>). Tanzania became independent in 1962 and that is when Kiswahili was afforded a national language status in this country. This independence made Kiswahili assume a number of responsibilities. Hence the deliberate efforts, including terminology development, were made to promote this language. The responsibility of the terminology development for Kiswahili was afforded to the language experts through an organization called the National Swahili Council (BAKITA) and the academic institutions such as the Institute of Kiswahili Research (TUKI) (Sewangi 2000:60). In this section I will talk about the development of Kiswahili terminology especially the ICT terminology. I will mainly discuss the strategies used in developing the ICT terminology in Kiswahili as these are strategies that could also be used for isiXhosa ICT terminology development.

2.6.2.3.1 Development of Kiswahili terminology by language experts and users

In this section I will talk more about BAKITA and TUKI which include language experts responsible for terminology development in Kiswahili. BAKITA was established in 1967 by an Act of Parliament. TUKI is a Research Institute of the University of Dar-es-Salaam and it was established in 1974 (Sewangi 2000:60). TUKI has the mission of promoting the standardization and development of the Kiswahili language. It is a research institution that has been responsible for researching into all aspects of Kiswahili language, literature, culture, etc. Its main objectives involve undertaking research in Kiswahili lexicography and compiling general and subject dictionaries. Another objective is to compile terminologies and coin new terms for different academic/specialized fields. Moreover, it liaises with other institutions in the development of the Kiswahili language.

Although the language experts were officially given responsibility for terminology development, even the language users embarked on unofficial promotion of the terminology. There were conflicts in the development of the Kiswahili terminology between the language practitioners and the language experts. The language experts considered terms developed by the language practitioners as low standard terminology. They even said that it does not conform to the traditional conventions of terminology work. They further argued that these terms developed by the practitioners were not promoting, but rather they appeared to be causing confusion in Kiswahili terminology. The language practitioners then undermined the terms developed by the language experts. They argued that some of the terms developed by the experts were too strange and obscure, Massamba (1997:89) cited in Sewangi (2000:61). I would advocate that it is very important for the terminology developers to consider the target audience. If the users are not satisfied with the product that clearly means one has developed the terminology in vain. Terminology is not of good quality if it is not usable to the targeted people. In the process of developing terminology, developers should consider the feedback of the language users. This will help the developers meet the user's requirements. Summarily, I advocate that there should be proper communication among the developers and also the users. This conflict between the language experts and language practitioners delayed the process of developing terminology in Kiswahili, Mwansoko (1993:185) cited in Sewangi (2000:61).

2.7 Language and ICT

This section discusses the impact of language and ICT in education. It further talks about the challenges and advantages of using home languages (African languages in this context) in education. This involves the discussion of the role played by mother-tongue and the effects posed by multilingualism in education. It gives a detailed account on the importance of using ICT tools in education. This entails the advantages introduced by ICT infrastructure in improving access to information. It concludes by discussing the relationship between language and ICT. This section explains the significant role that would result from the use of African languages in ICT.

2.7.1 Language in Education

There is no doubt that much has changed in South Africa since the first democratic elections held in 1994. The marginalised black majority won the right to participate as equal citizens alongside the white minority in the political activities of a newly created democratic state. This involved the fact that the once oppressed majority can now decide where they want to live, work and which schools they want their children to attend (Mgqwashu 2004:01). Before and during apartheid, African languages were suppressed legally. Laws were made to ruin the movement and opportunities of African language speakers. As suggested earlier in this chapter, education under apartheid was instrumental in destroying the future of Africans. The then ruling government made moves to entrench an inferior system of education for Africans. Along with mother tongue education, schools for Africans were in a poor condition, were insufficiently equipped and had fewer textbooks, teachers and classrooms than schools for whites. Moreover, the languages used in the education were not convenient for Africans as they were foreign languages. As indicated above, English and Afrikaans were the only official languages of this country, it was only in the lower classes where the indigenous South African languages were used in education (Vesely, 1998:15).

In the modern day education continues to be a powerful resource for economic and social development. For human development, there are two different types of education, i.e. informal and formal education. The informal education would entail indigenous knowledge acquired at home and extramural activities performed at school of which most of them are not included in the school syllabus. Christie (1988:123) terms this informal education as the hidden curriculum. This embodies all the activities that are not included in the syllabus document, such as affiliating in students' organisations/societies, group work, understanding school rules, etc. All these form part of the elements that develop student's cognition. This informal curriculum also involves the activities undertaken within the wider society. We cannot discuss education in isolation to the wider society. Education is part and parcel of the wider social system. For example, as the wider society has changed, education has changed as well. When we look at the history of South African education we realise that education was part of broader processes of social

change (Christie 1988:257). This is evident when we look at the current education system which is instrumental in training students to be critical thinkers as opposed to the banking system of education where students were not actively involved in the learning process. The current curriculum requires students to be independent thinkers both in and off the school grounds.

Formal education refers to the western education which was introduced by missionaries here in South Africa. This nurtures people specifically for a particular profession (for example to become employees and/or managers of certain companies or businesses). Nowadays, this formal education enhances chances of securing a better lifestyle, both socially and economically (Christie 1988). English remains the dominant language in the formal economic system or the first economy. The majority of people living in this country lack the financial and education resources in order to develop themselves. Poverty and the language used in education are two aspects that restrict the marginalised individuals from acquiring enhancing their lives. Only the elite group that have access to these opportunities through the medium of English do largely benefit. Due to these factors, people from disadvantaged communities mostly use their languages in their daily lives. Students from these backgrounds also spend most of their time using their home language both during and after school. Language in education is the most imperative medium to facilitate and acquire knowledge. Language is not only a tool for communication and knowledge but also a fundamental attribute of cultural identity and empowerment, both for the individual and the group. If other languages are not used in education, there are chances that they might die (UNESCO 2003:16).

Claims for language rights are among the first rights that minorities have voiced when there have been situations of political change and evolution. Such claims for linguistic rights range from the official and legal status of the minority and indigenous language, to language teaching and use in schools and other institutions, as well as in the media. In regard to education, the linguistic rights that have been framed in the international agreements for minority and indigenous groups include schooling in their language, access to the language of the larger community, access to the language of the national education system, etc. The language of instruction in school is the medium of

communication for the transmission of knowledge. This is different from language teaching itself where grammar, vocabulary, and the written and the oral forms of a language constitute a specific curriculum (UNESCO 2003). In the case of South Africa, the most disadvantaged population in terms of their language usage in education is the majority and underprivileged group. The South African government realised the need of awarding the official status to the indigenous languages of this country, particularly the ones with majority speakers. The language policy for higher education states that everyone has the right to receive education in the official language or languages of their choice in public education institutions where that education is reasonably practicable (DoE, 2002:03). The policy has not been accompanied or followed by any significant government initiated implementation plan. It has, however been met with several arguments against its implementation and these have found their way into publications which are now being used to discourage government's responsibility regarding implementation. While government pace remains slow, the discriminatory policy of the former apartheid regime continues to be practised in schools (Heugh 2000:03).

2.7.2 Mother-tongue Education

The term mother tongue, though widely used, may refer to several different situations. Definitions often include the following elements: the language(s) that one has learnt first; the language(s) one identifies with or is identified as a native speaker of by others; the language(s) one knows best and the language(s) one uses most. Mother tongue may also be referred to as primary or home or first language. The term mother tongue is commonly used in policy statements and in the general discourse on educational issues (UNESCO, 2003).

Mother tongue instruction generally refers to the use of the learners' mother tongue as the medium of instruction. Additionally, it can refer to the mother tongue as a subject of instruction. It is considered to be an important component of equality education, particularly in the early years. The expert view is that mother tongue instruction should cover both the teaching of and the teaching through this language. It is an obvious fact yet not generally approved by other people that learning in a language which is not one's own provides a double set of challenges, not only is there the challenge of learning a new

language but also that of learning new knowledge and concepts contained in that language. Studies have shown that, in many cases instruction in the mother tongue is beneficial to language competences in the first language, achievement in other subject areas, and second language learning. Some of the foreseen difficulties that might be encountered by the use of mother tongues as languages of instruction may include the following: mother tongue may be an unwritten language, the language may not even be generally recognised as a legitimate language, the appropriate terminology for education purposes may still have to be developed, there may be a lack of educational materials in that language, a lack of appropriately trained teachers and resistance to schooling in the mother tongue by students, parents and teachers (UNESCO 2003:16).

2.7.3 Multilingualism in Education

The prominence of English worldwide has had a substantial impact on its status in South Africa. The processes of colonisation inherently placed higher value on European languages, a status that modern globalization continues to enhance. In every society, the value placed on the lingua franca is intimately connected to the economic sphere in which the inhabitants of the society operate. As a lingua franca and as an international language, English is considered to be the only language that can be useful in education and accessing the entire world. Yes indeed, as an international language English plays a role in reducing language barriers among people coming from different countries. Webb (1996) quoted in Dalvit (2006:19) states that English occupies a predominant place in South African education, to the extent that English proficiency is sometimes equated with education as such. At the same time the power of English becomes a real threat to linguistic and cultural diversity in the country. The relative roles' of former colonial languages and indigenous African languages as a medium of instruction in education is a controversial issue all over Africa and especially in South Africa.

In this regard, I should like to turn to the matter of South African languages in education. The failure of language and educational policy where the two are not closely inter-related in multilingual settings should be approached critically. Heugh (2000) advocates that the logic of the language in education policy, however, is different. She motivates her argument by stating that it is based on the recognition that South Africa is multilingual

and that the mother tongue (or the language used most proficiently at home) is the most appropriate language of learning everywhere in the world. Furthermore, it is acknowledged that all pupils will need a very strong proficiency in at least one other language, and that for most pupils English will be a language of high priority. This is evident as we have seen in a couple of studies that most students perceive English as the language of high status. Moreover, students believe that with English you can open all closed doors to improve ones social, political, educational and economical status (Vesely 1998:09).

The concept of bilingual and multilingual education in South Africa is framed, in the policy document, in the context of adding a second and even a third language to each pupil's linguistic proficiency in ways which would best guarantee both academic and linguistic success. At no point is the position of English questioned or threatened. Implications of the new language in education policy include the need to use the other official languages as languages of learning alongside English. This means that school textbooks and materials must become available in languages other than English, and therefore, systematic development in the area of terminology and translation will be necessary. None of these developments should be seen to pose a threat to the position of English. English will remain a language of aspiration for the majority and of high economic return for the middle classes. Alexander (1997) states that the implementation of an English-only or English-mainly policy comes from both economic and ideological sources. Furthermore, it is significant to people who already have proficiency in English (the world language) that the most economical language policy consists of encouraging or even commanding everybody to learn English even at the expense of their first languages. Such a policy, as it is perceived, will possibly cost much less than a policy of multilingualism which involves, among other things, thousands of translators and interpreters. Ideologically, those who are proficient in English stand a chance of acquiring invaluable cultural capital, nothing would stop them from getting high-paying jobs and career options are open for them as far as poverty and inequality is concerned. The real question is: what is the real situation in a multilingual society such as South Africa? Alexander advocates that English has succeeded neither as a language to facilitate national unity nor as a language of empowerment for the public at large. It

empowers only a shrinking minority. In this article he states the results of language policies which attempt to promote the use of one language for education, government and the economy in multilingual context as follows: greater access to the dominant language for the majority has never been facilitated; the dominant language has not promoted national unity; the majority remains on the fringe; language-based division increases; the monolingual policies have not been cost-efficient, economic development has not reached the majority (Alexander 1997:06).

Given the chance, the development of and investment in African languages as languages of learning and teaching, this will bring the best possible returns (Vesely 1998). Given the wealth of evidence from studies conducted both in South Africa and elsewhere one would expect the benefits to include:

- an increase in the overall standard of education in the country.
- increased levels of competence in English.
- lower drop-out and failure rates.
- raised levels of self-esteem and a greater degree of social tolerance for many citizens.
- a positive impact on the economy.

The first post-apartheid language-in-education policy (LiEP) for public schools takes the Constitution as its point of departure. In brief, the LiEP endorses multilingualism, the building of non-racial nation, an additive approach to bilingualism in education, and gives individuals the right to choose the language of learning and teaching at their school (DoE, 2002).

2.7.4 Information Communication Technologies (ICTs)

This section gives a detailed definition of ICT and relates it to the above discussion on language and education, as well as mother tongue based teaching. The ICT definition presented entails all the aspects of ICT and also lists a number of examples.

2.7.4.1 General perspective about ICT

The term ICT means Information and Communication Technology. This includes all the infrastructure that we use to access and facilitate information and Communication. The term ICT refers to *information channels* (such as the World Wide Web, online databases, electronic documents, management and accounting systems, intranet, etc); *communication channels* (such as e-mail, electronic discussion groups, electronic conferences, the use of cell phones, etc); and *hardware & software* used to generate, prepare, transmit and store data (such as computers, radio, TV, computer programmes/tools, etc) (NORAD 2002:03). NORAD (2002:03) further states that ICT has the greatest potential to effect positive change in developing countries and create opportunities for the poor when it is specifically adapted to local needs, priorities and circumstances. According to the current study, the ICT infrastructure referred to encompasses computers and the internet. Specifically it explores the possibilities of using an African language (i.e. isiXhosa) in improving accessibility and usability of these resources to the disadvantaged communities.

The growing role of information and knowledge has led to a new rationale for the function of information and communication technologies (ICTs) in diverse societies. These technologies are now recognised as tools not only for training but also for progressive social change, the strengthening of human intellectual capacity, and the formation of modern lifestyle. Combined with opportunities for lifelong learning, ICTs can provide individuals with the skills and knowledge they need to cope with the global changes taking place in countries everywhere and with the challenges (economically, in education and health-wise) arising in various areas of daily life. ICT can also be used for various basic education and skill training activities through both formal and informal mechanism (DoE & DoC 2001).

2.7.4.2 ICT for rural development

We are living in a world where ICT is being distributed in almost all areas of human activity (Joseph 2002:01). In particular, there is much more work that needs to be done to reach the target beneficiaries. This involves the socio-economically disadvantaged people

who generally live in rural, remote and isolated areas in the region. The digital divide between the poor and the rich threatens to increase already existing educational and socio-economic disparities. It is, therefore, important to ensure that disadvantaged groups learn to benefit from the use of ICT in an increasingly knowledge-based society. I will explore this further in chapters 3 and 4.

2.8. Conclusion

This chapter takes us back to the time when indigenous languages were not used and developed effectively. This resulted because of the apartheid regime's divide and rule policies. The only languages that were developed are English and Afrikaans. This, to a certain extent, was disadvantageous to the indigenous languages as they ended up lacking terminology. Earlier in this chapter I discussed the language policy which leads to language planning and implementation. Cobarrubias and Fishman (1983:13) cited in Ngcobo (2007:5) state that since corpus planning focuses on the development of the body or form of a language, provisions concerning scientific and technological terminology relates to the corpus of the language. In this research I am discussing language planning in relation to the ICT terminology development in isiXhosa. The preceding statement strongly emphasizes that all the terminology development in any language even if it is scientific still forms part of the corpus of the language. The computer terminology assessed in this research, and discussed in chapter 4, forms part of the isiXhosa corpus. This terminology development implies the intellectualization of isiXhosa as we know that African languages have inadequate terminology particularly in the field of science and technology. I have concluded my chapter by discussing some of the organization and/or institutions that are involved in the mission of developing African languages and by discussing the importance and challenges related to ICT in education and how ICT can contribute to development in rural and urban areas.

CHAPTER 3

RESEARCH METHODOLOGY AND IMPLEMENTATION

4.1 Introduction

This chapter firstly explains the goals of this research and also the motive behind pursuing this study. It discusses and motivates the methods implemented in achieving the goals of this study. The researcher discusses the rationale behind the choice and limitations of the case study and sampling procedure chosen in this research. This chapter further describes both the qualitative and quantitative methods which will be used in the process of collecting and analysing data. Data collection techniques such as interviews, participant observations, documents and questionnaires are discussed. At the end this chapter describes the approach used in analysing data and I also discuss the validity of this study.

4.2 Research goal

Firstly, the researcher would like to discuss the motive behind pursuing this study. Students from disadvantaged backgrounds are facing a number of challenges in their studies. These disadvantages are mainly worsened by their socio-economic background. The economic status of these disadvantaged societies has an impact in the sense that parents are not able to provide adequate financial and academic support in order to improve education in these societies. Siririka (2007:02) argues that parental involvement in their children's education does not only involve payment of fees, but that parents should be actively involved. Unfortunately many of the parents are not literate and are unable to actively participate and encourage children in the learning process. Furthermore, most of the schools in rural areas lack both material and human resources for them to achieve high quality in education. Researchers such as Heugh (2002:30) have found that most teachers in rural and township areas conduct their subjects using both the students' home language (i.e. an African language in most cases) and the official language of learning and teaching (in most cases, English).

This model of informal bilingual education is problematic. On the one hand, some of the teachers are not fluent in English (Webb 1996). On the other hand, there are no textbooks and other teaching resources available in the African languages to support their use as languages of learning and teaching. Moreover, most of the time students in disadvantaged communities use their home languages in school and social interactions. They rarely engage in discussions using English. This research seeks to understand the problem by evaluating students' attitudes and challenges towards the use of learning materials developed in their home language.

This research entails the development and implementation of Computer Literacy terminology in isiXhosa. This involves the observation, analysis and assessment of the process of developing an isiXhosa based computer terminology bank at Rhodes University as part of the SANTED and CoE programmes. The aim here is to track whether students are comfortable and accepting of the use of isiXhosa terminology, and also to track the extent to which it assists them. The evaluation of the terminology usability will be carried out in township and rural high schools.

4.3 Research Design

4.3.1 Interpretive Paradigm

This research is located within an interpretive paradigm, as this study seeks to understand the attitudes, views and challenges of students in using ICT terminology developed in isiXhosa. The interpretive paradigm is concerned with interpreting and understanding human behaviour. The aim of interpretive research is to reach an understanding of some phenomenon that is not well understood. Hodgskiss (2007) further states that the interpretive research assumes that the best way to understand such a phenomenon is by studying it in natural contexts such as a classroom. The main aim here is to give a detailed description of the phenomenon and where possible to discuss the aspects that lead to certain findings. The interpretive perspective places primary emphasis on this process of understanding. This allows a researcher to implement different methods or techniques to consolidate information generated from a study in order to gain a better understanding of the phenomenon (Connole 1998 cited in Hodgskiss 2007).

4.3.2 Qualitative methods

Qualitative research is a type of scientific research (Mack, Woodsong, MacQueen, Guest and Namey 2005). They further state that scientific research entails an investigation that seeks answers to a question, produces findings that were not determined in advance and collects evidence. In this study the researcher seeks to evaluate the usability of ICT terms developed in isiXhosa. This entails finding out students' attitudes towards the use of these terms. In order for the collection of data in this research the researcher used a qualitative research method incorporating observations, interviews and document analysis. Mack et al (2005:2) state that observations, interviews and focus groups form part of the three most common qualitative methods. These methods enable a researcher to obtain a specific type of data. Data collected by participant observations can reveal some natural reactions that occurred in a particular setting where the research is carried out, for example it might be in a classroom. Interviews are advantageous to collecting data concerning an individual's views, experiences and perceptions especially when sensitive topics are dealt with.

Qualitative research is a broad term used to describe forms of enquiry which assist researchers in understanding and interpreting the social interactions. Hodgskiss (2007:30) advocates that the terms qualitative and interpretive research are often used interchangeably and are based on the perception that the reality is ever changing and is made up of individuals interacting with their social worlds. This partially alludes to the fact that the qualitative research is mainly concerned with the human behaviours, beliefs, opinions, emotions and relationships with one another and their surroundings (Mack et al 2005:01). These human behaviours and actions can be truly reflected upon and their meanings understood when interpreted in a natural setting. A natural setting, as discussed by Maykut and Morehouse (1999:45 cited in Siririka 2007:33), is a place where the researcher is most likely to discover or uncover what is to be known about the phenomenon of interest. The term qualitative can be used to describe the data collected by the interpretive researchers, in the sense that it usually comprises of detailed observations, field notes, reports and interviews (Bassey, 1999 cited in Hodgskiss 2007:30). Qualitative data are conveyed through words (i.e. verbal).

I have chosen to use a qualitative aspect of the interpretive paradigm as it is appropriate to the current research because it seeks to interpret a social phenomenon in a natural setting in which people's experiences, views, behaviours, actions and knowledge are gathered from interviews, observations and different types of documents.

4.3.3 Quantitative methods

This is a research method that relies primarily on the collection of qualitative and quantitative data. In the previous section I discussed qualitative research which deals with the interpretation of human behaviours, actions, opinions, etc in a natural setting. Qualitative research interprets data in the form of numbers and statistics. The research uses tools, such as questionnaires or equipment to collect numerical data. With quantitative methods such as surveys and questionnaires researchers ask all participants identical questions in the same order. The response categories from which participants may choose are closed ended or fixed. The advantage of the inflexibility is that it allows for meaningful comparison of responses across participants and study sites. However, it requires a deep understanding of the relevant and important questions to ask, the best way to ask them and the range of possible responses (Mack et al 2005:03).

4.3.4 Case study

The case study method was adopted in this research. This research uses several case studies. This entails a case study for the development of ICT terminology and also for the adoption of this

terminology. The use of these different case studies resulted from the goal of this study as the researcher seeks to evaluate and explore the development and adoption of this terminology.

Bogdan and Biklen (1982) cited in Siririka (2007:33) define a case study as a detailed examination of one setting, a single subject, or a particular event. Cohen, Manion & Morrison (2000:181) define a case study as the study of an instance in action. This single instance is of a bounded system, for example a child, a class, a community, etc. They further point out that a case study provides a unique example of real people in real situations enabling readers to understand ideas more clearly than simply presenting them with abstract theories or principles (Cohen et al 2000:181).

The case study is ideally suited to the needs and resources of the small-scale researcher. A case study is a form of descriptive qualitative research as it closely studies an individual or a certain unit to draw some conclusions only based on the information acquired from that specific participant or group. The researcher does not generalise conclusions, instead the emphasis is placed on the exploration and description of the project. It allows a focus on a limited number of examples. This might be the researcher's place of work or another institution with which they have some connections: such as a company, an institution, an organisation etc. The unit may be a school, a department or even a section within an institution or organisation, or an individual. In examining this setting or institution the case study uses a mixture of methods: such as personal observation which, for some reasons depending on what is researched, may develop into participation; the use of informants to explore the current and historical data; interviews; and the analysis of relevant documents and records retrieved from the research subjects or research areas (Blaxter et al 1996:66).

In the current study the researcher's role is more of a participant observation. The researcher's role is to sit-in during the computer literacy lessons giving assistance when necessary. I deliberately selected the case studies to have the following features and boundaries:

- The development of this computer terminology was undertaken within the Rhodes University School of Languages - SANTED (South Africa – Norway Tertiary Education Development) programme, in the ICT unit of which I am a member. Nationally, the purpose of this programme is to assist the Department of Education in the transformation of Higher Education in South Africa. This programme is a partnership between the Norwegian Agency for Development Co-operation (NORAD), the Department of Education and higher education institutions. The SANTED project is hosted by the African Language Studies

Section within the School of Languages in the Humanities Faculty at Rhodes.

The SANTED team comprises of scholars from different academic backgrounds ranging from Computer Science, Languages, Education and Communication of which the majority of them are native isiXhosa speakers. Their different academic backgrounds play a significant role in the development as they bring diversified expertise. In the initial development of this terminology we extracted terms from a Computer Literacy manual used by the Rhodes University Computer Science Foundation (CS 1S) Students. These students were also used in the process of testing the initial version of this glossary of computer terminology (Dalvit et al 2005:2).

- Development and piloting of the bilingual Computer Literacy course material. This was undertaken in collaboration with the Education Faculty, as part of the ACE – ICT course. Students in this course are in-service teachers from Grahamstown and surrounding areas. The testing of this course material has informed the further development of this booklet
- For the adoption and usability of the ICT terminology, two schools were chosen, one in a rural and another in a township area. The selection of schools in different regions will enable the researcher to track the challenges associated with language varieties especially in African languages. This might be another factor influencing the development and adoption of this terminology. As part of testing the usability of isiXhosa computer terms, students will use a fully localised computer laboratory. A fully localised computer lab consists of computers that have been installed as an operating system and software applications developed in different languages, in this context in the eleven official languages of South Africa. This enables students to switch to the language of their choice. In terms of the current study this allows students to operate computers entirely in isiXhosa. This kind of software has been developed by a non-governmental organisation called Translate.org.za. The localised software entails the operating system called Linux (which is equivalent to Windows), Mozilla Firefox web browser (equivalent to Internet Explorer web browser) and the application package is OpenOffice.org (equivalent to Microsoft Office). These are called Open Source Software in the sense that they have been developed and maintained by the community or users, contrary to the proprietary software where its development and maintenance depends only on the developer/administrator.
- The first two schools are in a deep rural area where the population is dominated by isiXhosa

speakers. This rural area is Dwesa Cwebe which is a community located on the Wild Coast of the former homeland of Transkei, in the Eastern Cape Province of South Africa. This is one of the many areas that are representative of many rural realities in South Africa and the entire Africa (Dalvit, Muyingi, Terzoli and Thinyane 2007:10). According to a report by Statistics South Africa, this area has two districts (i.e. Willowvale and Elliotdale) that are the two poorest districts in the country (Stats SA 2000 cited in Timmermans 2004:20). The Dwesa Nature Reserve which attracts tourists and school children are among the more significant and reliable sources of employment in this area. Development and poverty alleviation projects also provide some employment although usually on a short-term basis. Moreover the community is dependent on government grants for their income (Eliasz and von Staden 2008, also see Timmermans 2004:74) and they are also traditionally subsistence farmers who depend on their crops for their livelihood (Thinyane, Slay, Terzoli and Clayton 2008).

As part of infrastructure and service provision for community development, Rhodes University in Grahamstown and Fort Hare University in Alice have been working for a number of years with the Dwesa community in the project called Siyakhula through their Telkom Centre of Excellence (CoE) located in the Computer Science Departments of both universities (Eliasz and von Staden 2008:9). The CoE is a research unit funded by industry and government. The objective of the CoE is to research the application of ICT for development projects. This involves the provision of ICT infrastructure. The ICT projects managed and administered by the CoE are Siyakhula (in the Dwesa Cwebe region) and e-Yethu (in the Grahamstown region).

Siyakhula project or Siyakhula Living Lab (accessible at <http://dwesa.coe.ru.ac.za>) which is a joint venture between University of Fort Hare and Rhodes University seeks to investigate the application of ICTs in marginalized communities. Its primary objective is to develop and field-test the prototype of a simple, cost-effective and robust, integrated e-commerce/telecommunication platform, to deploy in marginalized and semi-marginalized communities in South Africa. The second objective of this project is to facilitate technically skilled human resources in the field of e-commerce, especially to support e-commerce activities in marginalized and semi-marginalized communities. This is undertaken with the hope to improve the socio-economic status of these communities by establishing entrepreneurship (Thinyane, Slay, Terzoli and Clayton 2008). Researchers, mainly from Rhodes and Fort Hare universities, are occasionally visiting this project in order to provide technical

expertise and support with other logistics in order to ensure sustainability. These researchers are also conducting computer training in this project. The Siyakhula Living Lab comprises of four schools. These schools are used to house this living lab and allow students and the community to access the ICT infrastructure.

- The second component of my test sites is the e-Yethu project (accessible at <http://schools.coe.ru.ac.za>) which is based in Grahamstown schools. This project is a joint collaboration between the Telkom CoE and the Department of Education at Rhodes University. Grahamstown is a city in the Eastern Cape Province of the Republic of South Africa. The population of this city comprises of black, coloured, white people. The majority of this population are black people and specifically isiXhosa speakers. A considerable influx of Black people in this city comes from the former and nearby Ciskei homeland. Nearby the city of Grahamstown, there are township areas and that is where the majority of black people reside. Grahamstown is regarded as the city of saints and scholars because of many churches and schools as well as Rhodes University. The great majority of black people in this area work at this university. This city is home to several institutes, most importantly the South African National Library for the Blind, the National English Literary Museum, the South African Institute for Aquatic Biodiversity (formerly the JLB Smith Institute), the International Library for African Music (ILAM), and the Institute for the Study of English in Africa. It is within this educational environment that I have chosen to do part of my research.

The features and boundaries of my research are therefore informed by the sites that were chosen to conduct the research, namely, Dwesa Cwebe and Grahamstown.

4.3.5 Sampling

4.3.5.1 Theoretical review of sampling

Maxwell (2005:87) defines sampling as decisions taken about whom to involve and where to conduct the research, and that this is an essential part of the research process. He further advocates that sampling usually involves people and settings (such as schools or institutions), events and processes.

Two basic types of sampling highlighted by various writers appear to be probability sampling e.g. random sampling and non-probability sampling e.g. purposeful sampling. Maxwell (2005:88) states

that the most used sampling in qualitative research is purposeful sampling. He further argues that this is a strategy in which particular settings, persons, or events are deliberately selected for the important information they can provide that cannot be obtained from other choices. Patton (1990 as cited in Hodgskiss 2007:34) argues that the logic and power of purposeful sampling lies in selecting information-rich cases for study in depth. Information-rich cases are those from which one can learn a great deal about issues central or important to the purpose of the research, thus the term purposeful sampling.

Maxwell (2008:235) further discusses several important uses for purposeful sampling. Firstly, he states that it can be used to achieve representativeness or typicality of the settings, individuals, or activities selected. A small sample that has been systematically selected for typicality and relative homogeneity provides far more confidence that the conclusions adequately represent the average members of the population than does the sample of the same size that incorporates substantial random or accidental variation. Secondly, he advocates that purposeful sampling can be used to capture adequately the heterogeneity in the population. The goal here is to ensure that the conclusions adequately represent the entire range of variation rather than only the typical members or subset of this range. Thirdly, he believes that a sample can be purposefully selected to allow for the examination of cases that are critical for the theories that the study began with or that have subsequently been developed. Lastly, he suggests that purposeful sampling can be used to establish particular comparisons to illuminate the reasons for differences between settings or individuals, a common strategy in multi-case qualitative studies (Maxwell 2008:235).

Selection of sample should take into account your research design. It should first take into account your research goals and conceptual framework. Moreover, sampling should consider your research relationship with study participants, the research method (such as case study) selected, the feasibility of data collection and analysis, and validity concerns. In addition, feasible sampling decisions often require considerable knowledge of the setting studied, and you will need to alter them as you learn more about what decisions will work best to give you the data you need. This involves certain practicalities and limitations of the research project (Hodgskiss 2007:34). For this reason I have chosen two settings (as outlined earlier) with which I am familiar.

Hodgkiss (2007) states that several writers have made a distinction between different types of purposeful sampling. He advocates that amongst the most common types is convenience sampling. Convenience sampling is used to select a sample based on time, money, location, availability of sites or respondents, etc (Merriam 2001 cited in Hodgkiss 2007:34).

4.3.5.2 The sample itself

- Four High Schools – two schools from the township area in Grahamstown and the other two from the Dwesa rural area were chosen because of their social difference and the issues associated with language varieties. The researcher presumed that this will inform the challenges associated with many language varieties in African languages. All learners from these schools speak isiXhosa as their home language.
- Two Grade 10 and two Grade 9 classes.
- A computer literacy teacher from each school.
- A bilingual (developed in isiXhosa and English) computer literacy course material.
- A fully localised computer lab.

4.3.5.3 Reasons for sample

This research utilised:

- Purposeful sampling
 - Language: Learners who speak isiXhosa as their home language were chosen. This research investigates the adoption of computer terms developed in isiXhosa. The researcher would like to find out whether the isiXhosa language speakers would accept using terms developed in their language or whether they prefer to use the existing English terms.
 - Four schools: These schools were chosen mainly because of their involvement in the projects administered and managed by CoE i.e. the Siyakhula and eYethu projects. Moreover, these schools are using open source software which allows students to entirely access their interface and be taught in their language.
- Convenience sampling
 - Grades 9 and 10: These grades were chosen as I assumed that most of the learners at this level are not yet exposed to computers. Ideally, the researcher would like to evaluate the adoption of the ICT terminology with learners who have never ever used computers before. The reason for choosing different grades is because the highest grade in the other two secondary schools is grade 9.

4.4 Data Collection

This study implements different data collection techniques. The researcher decided to use these

different tools in order to balance the findings of this study. This section describes all these techniques but they will be discussed in depth in the following chapter (data analysis chapter). These data collection tools entail interviews, questionnaires, participant observations and document analysis.

4.4.1 Interviews

In this study I conducted interviews where I interviewed the learners from the high schools discussed in the sample. These learners were interviewed to gather information about their language attitudes, opinions about the use of African languages as languages of learning and teaching (LoLT) and their experiences in terms of language usage in their schools. Their experiences involved code-switching which is currently widely used in schools where the majority of pupils would share the same language which is not entirely used as the medium of instructions. The researcher wanted to find out to what extent this affects or improves their knowledge acquisition.

Cohen, et al. (2000) cited in Siririka (2007:37) perceive interviews not as a dispassionate and technical instrument of data generation but as an emotionally engaged social interaction about people's real experiences in constructing their personal accounts on a particular topic. They further argue that in this sense the interview is not simply concerned with collecting data about life, but rather that it is part of life itself, its human embeddedness is inescapable (Cohen, Manion and Morrison 2000:267). Interviews involve gathering data through direct verbal interaction between individuals. According to Whyte quoted in Cohen et al (2000), the interview process is characterized by continuous probing to elicit more information.

Semi-structured interview is used in qualitative investigations because it is more open-ended and flexible, allowing one to probe in order to obtain in depth data. In this type of interview specific information is required from all the respondents, which means sections of the interview have to be structured. But the largest portion of the interview is guided by a list of questions or issues to be explored and neither the exact wording nor order of the questions is determined ahead of time. This allows the researcher to respond to the situation at hand, to the emerging views of the respondent and to new ideas on the topic. (Merriam 2001 cited in Hodgskiss 2007:38)

I conducted group interviews as I presumed that it might be inappropriate and time consuming to interview individual students. These interviews were conducted in isiXhosa as the interviewer shares the same language with the respondents. I requested that we utilise their computer lesson time slot in order to avoid time clashes with other school periods. As a convenient place for both the

interviewer and interviewees, I used one of their classrooms. Prior to the introduction of the purpose of the interview, we engaged in an informal chat not directly related to the interview to put the participants at ease. The questions I would ask are based on their community and also the distance they travel from and to school. Questions were posed such as: How is their community in terms of social life and sports activities? How long does it take to travel from school to their homes, do they use transport to get to school? Before getting started with the interview I reminded the participants about the length of time I expected the interview to take. The duration of all interviews was approximately 15 minutes. I also asked for their permission in order to use the recording device. I explained the reasons for using this device. One of the reasons that would make them easily agree to be recorded is that I explained that I would like to jot down some points while they are talking. At the same time I explained that if I were not using the recording device, then some of what they said might be lost to me. Furthermore, I did not want the participants to be reserved, thinking that some of their points are not important if not jotted down. Also I used the recording device as it would be useful when I needed to quote statements from the interview. Using the audio tape only to capture the interview was somewhat risky as I would not have back-up if technology would malfunction but after each session I wrote down aspects I thought were crucial. I translated the data and transcribed it from the interview verbatim.

Cantrell (1993) cited in Siririka (2007:37) advocate that interviews allow for the collection of data in the subjects' own words, therefore affording the researcher an opportunity to discover the subjects' perceptions, interpretations and the meaning that they give to their actions.

4.4.2 Questionnaire

A questionnaire is a text containing a series of questions aimed at obtaining written information from respondents in a survey. It is a useful instrument for obtaining information when a researcher intends to gather data. It is widely used and a useful instrument for collecting survey information, providing structured often numerical data, being able to be administered without the presence of the researcher and being comparatively straightforward to analyse (Cohen, Manion and Morrison 2007:317). In order for a researcher to obtain appropriate responses when using a questionnaire, careful consideration should be given to the content of questions, the nature and sequence of questions. As stated by Frankfort-Nachmias and Nachmias (1996:251) cited in Aziakpono (2007:46) that survey questions focus attention on facts, opinions, attitudes, respondents' motivation and their level of familiarity with the topic under investigation.

Frankfort-Nachmias and Nachmias (1996) further state that questions used in surveys can be

divided into two groups known as factual questions and questions about subjective experiences. Factual questions are asked to obtain background information about the respondents. Questions eliciting information about gender, age, marital status and the income of respondents are examples of factual questions. These background questions are used to classify respondents or are analysed as factors that may influence attitudes. Aziakpono (2007:52) further advocates that variables such as age, gender, background information, etc according to the literature they are found as factors which often influence language attitudes. In the context of the current study the research does not dwell much on the factual questions as the majority of the respondents come from a similar background and they mainly share closely related and similar characteristics such as age, family income, education background, etc. The second set of questions is about subjective experiences and these questions are often in the form of belief statements. These questions deal with respondents' beliefs, attitudes, feelings and opinions. In the current study, the researcher seeks to investigate the adoption of isiXhosa computer terms. This investigation involves finding out about the students' attitudes toward the use of isiXhosa computer terms. The researcher discusses the language attitudes with a special reference to other findings from a number of studies (Dalvit 2004 and Aziakpono 2007). This will be further explored in chapter 5 of this thesis.

4.4.3 Participant Observation

Participant observation is a qualitative method, with roots in traditional ethnographic research. The objective here is to help researchers learn the perspectives held by study populations. Qualitative researchers presume that there will be multiple perspectives within any given community. Qualitative researchers are interested to know what those diverse perspectives are and in understanding the interplay among them.

Qualitative researchers accomplish this through observation alone or by both observing and participating to varying degrees in the study of a community's daily activities. Participant observation always takes place in community settings in locations believed to have some relevance to the research questions. The method is distinctive because the researcher approaches participants in their own environment rather than having the participants come to the researcher. Generally speaking, the researcher engaged in participant observation tries to learn what life is like for an insider while remaining inevitably an outsider (Mack et al. 2005). In my case I am a relative insider as I share the language and cultural background of my research subjects.

While in these community settings, researchers make careful objective notes about what they see, recording all accounts and observations as field notes in a field notebook. Informal conversation

and interaction with members of the study population are also important components of the method and should be recorded in the field notes in as much detail as possible. Information and messages communicated through mass media mass such as radio or television may also be relevant and thus desirable to document.

The current research involved participant observation where the researcher was fully engaging with the subjects. This involved the actual teaching of the Bilingual Computer Literacy course. Inbetween the researcher would note some of the discussions conducted by the subjects. This was mainly documenting the preferred language when discussing and conversing in the class. The findings for the students' preferred language when discussing computer terms and also their views are discussed in chapter 5.

4.5 Data Analysis

Bogdan and Biklen (1982:154) argue that data analysis involves working with data, organizing it, breaking it down, synthesizing it, searching for patterns, discovering what is important and what is to be learned, and deciding what you will tell others. Seliger and Shohamy (1989:201) cited in Siririka (2007:38) describe data analysis as sifting, organizing, summarizing and sythesizing the data to arrive at the results and conclusions of the research.

Maxwell (2008:236) states that analysis is often conceptually separated from design, especially by writers who see design as what happens before the data are actually collected. He further states that qualitative study requires decisions about how the analysis will be done and these decisions should influence and be influenced by the rest of the design. He believes that data analysis should be conducted simultaneously with data collection. He motivates this by advocating that by conducting these at the same time a researcher will progressively focus their interviews and observations and also this will inform on how to test the emerging conclusions.

The data collected for this thesis was in the form of notes taken during interviews, documents used in assessing terminology adoption and transcripts from a recording device. This helped me to identify the themes that formed the final basis of my data analysis. I listened to the raw data on the recording device while transcribing them. This helped me to be familiar with the data. When I was transcribing I identified some data recurring in different respondents' answers. These helped me to arrange my data into themes.

Chapter 5 presents and interprets the data. The nature of qualitative data that I obtained, and the fact

that I was operating within an interpretive paradigm required me to present a descriptive and interpretive account that incorporates quotations from respondents' answers.

4.6 Research ethics

This section discusses some of the ethical issues that are fundamental to research. Chen, et al. (2006:292) argue that it is important to take note of the following ethical issues: access and acceptance. When research is conducted through an institution, such as a university or school, approval to conduct the research should be obtained before any data are collected (McMillan & Schumacher 1997:195). I obtained formal approval to work within my research sites, with the support of Rhodes University.

4.6.1 Gaining access

Firstly, all of these schools investigated in this research are involved in the ICT for Development projects. This also gave an opportunity to work with the teachers from these schools through these projects. When I was planning to conduct my research in the respective High Schools I engaged the teachers responsible for computer literacy lessons. They advised me to also liaise with their principal. Firstly I verbally processed my request to the principals. To follow the research ethics, I wrote a letter, supported by Rhodes University, to these principals requesting for the permission to conduct my research in their schools (See Appendix).

4.6.2 Anonymity and confidentiality

Since it is very important that anyone involved in research should be a willing participant, I notified the research participants ahead of time about my intentions of conducting interviews with them. This was done when I explained to them the purpose of my study and its importance. I fully explained to them that their identity would not be revealed in the interview and that they would remain anonymous.

4.7 Validity (Triangulation)

To conduct this research I used multiple data sources. This is referred to as triangulation. Triangulation, according to Cohen et al. (2000:112) is when multiple data sources help the researcher to map out, or explain more fully, the richness and complexity of human behaviour by studying it from more than one standpoint. Altritcher, Posch and Somekh (1993:117) state that triangulation is an important method for contrasting and comparing different accounts of the same situation. It gives a more detailed and balanced picture of the situation. In order to balance my findings I used different data collection techniques.

4.8 Limitations

It is my contention that students from the more disadvantaged schools are not used to discussions. Most of them were shy and they could not articulate themselves easily. There was also the issue of the time factor, where I could not find adequate time to interact with the students. Students would attend the course during their free slots, sometimes when a certain subject teacher was not around and they would have to utilise that slot. In other schools they attended during their break time or after school and this was problematic. I would therefore be obliged to spend limited time with them. Another factor was that this course was not part of their curriculum and this inhibited them and made them not to perform to their optimal levels.

4.9 Conclusion

In this chapter I have outlined the methodologies that I have used in my research. I have opted to make use of multiple methodologies in an attempt to gain the best understanding of my research subjects' attitudes towards making use of computer terminology in the mother tongue. I have concentrated on both participant observation as well as interviews. In the chapter that follows I will present the ICT booklet that was used in the schools followed by chapter 5 which comprises an analysis of the findings of my research based on the methodologies as outlined in this chapter.

CHAPTER 4

BILINGUAL COMPUTER LITERACY MODULE

4.1 Introduction

What follows are the actual lesson plans that I helped to develop and which were used in the schools as outlined in the previous chapter. The English appears first in this chapter and is then followed by the isiXhosa version. In this way I hope to show that whatever terminology exists in English can in fact find its way into isiXhosa. The reception of this manual in the schools is further analysed in chapter 5 as part of my research findings.

LESSON 1: INTRODUCTION TO COMPUTERS

1.1. Computer

It is a machine used to insert, edit, save, display/output information.

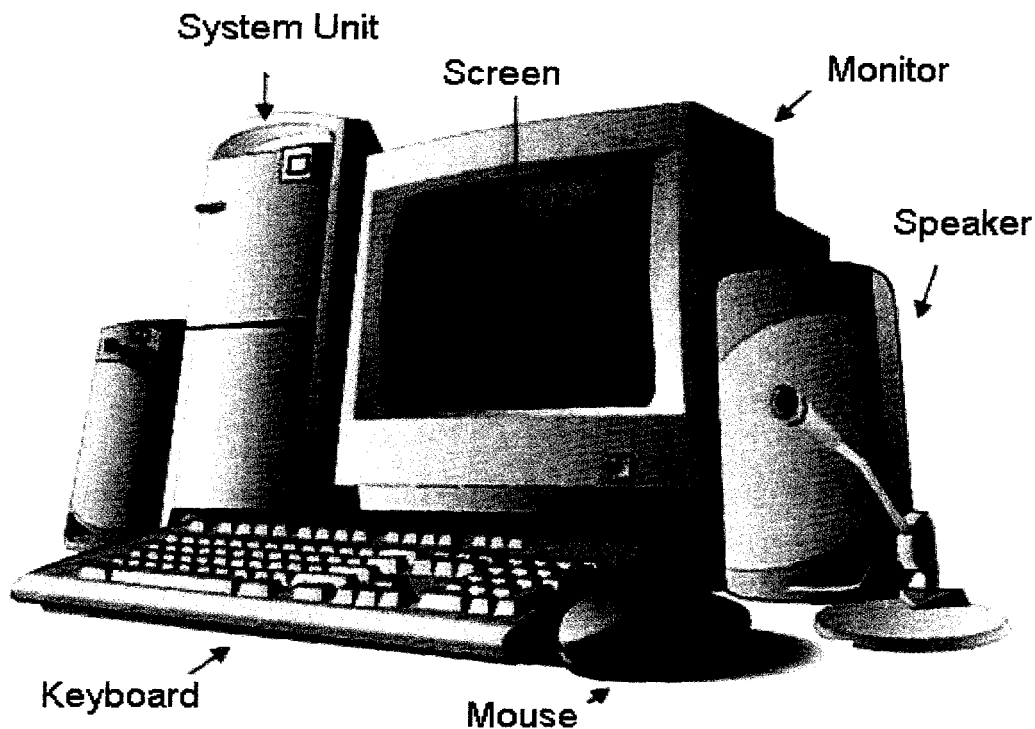


Illustration 1: Computer Components

1.1.1 Hardware

It refers to the physical components of a computer. These are the parts that you can touch. Examples are the Central Processing Unit (CPU), System Unit, the keyboard, the monitor, screen, memory, mouse, printer, scanner, etc.

- **Input Devices**

These are devices that are used to capture information, e.g. keyboard, mouse, scanner.

- **Keyboard** - It is an input device used to type and insert information.
- **Mouse** - It is an input device used to click, drag, point, highlight/select text. There are two buttons on the front end of the mouse, one on the left and one on the right. The left button is frequently used whilst the right one displays a menu to perform other tasks.
- **Scanner** - It is an input device used to change hardcopies into electronic format.

- **Output Devices**

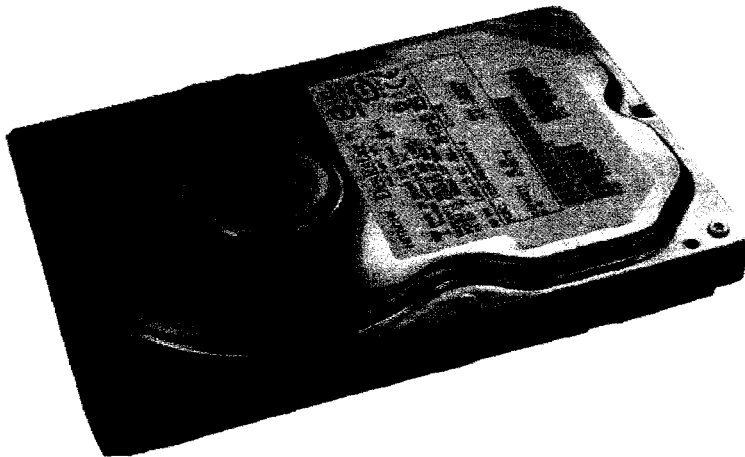
These are devices that are used to display/output information, e.g. screen, speaker, and printer.

- **Screen** - It is an output device used to display information.
- **Printer** - It is an output device used to print documents.
- **The speaker** - It is a device used to output sound.
- **The Monitor** - It is a device that contains a screen.

- **Storage Devices**

These are devices that are used to store information, e.g. CD, Memory stick, Hard disk, Floppy disk.

- **Compact Disc (CD)** – It is a device used to store sound and information such as database, pictures, etc.
- **Memory Stick** - It is a portable small device used to store audio, data and video files. It was invented to work more effectively comparable to floppy disks.
- **Hard disk** - It is a permanent storage device found in the computer.



- **CPU**

It is the Central Processing Unit. It is the brain of the computer.

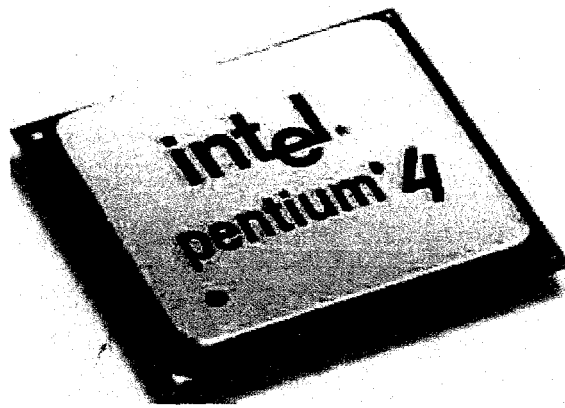


Illustration 3: Central Processing Unit

- **System Unit/ Tower**

It is a box used to house CPU.

- **Memory**

There are two types of memory i.e. primary and secondary memory. Secondary memory consists of storage devices e.g. DVD, flashstick (Memory Stick), CD, Hard drive. They keep information even if the power is off. Primary memory is the memory that keeps information on the computer while you are working e.g. Random Access Memory (RAM) and Read Only Memory (ROM).

- **Random Access Memory (RAM)**

RAM is the computer's working memory where it stores the programs and data that are being used at any given time. The contents of RAM can be changed because it only stores programs and data temporarily. When the computer is switched off, the contents of RAM are lost. This sort of memory which is wiped clean when the computer is switched off is called volatile memory.

- **Read Only Memory (ROM)**

The programs and data stored on ROM are permanent and cannot be changed. When the computer is switched off, the contents of ROM are not lost. This sort of memory which is not wiped clean when the computer is switched off is called non-volatile memory. The main use of ROM chips in a computer is to store the software that runs when the computer is switched on. This program is called BIOS and it loads the Operating system e.g. Windows XP or Linux.

1.1.2 Software

It refers to the programs that control the computer and make it function. These are computer devices that cannot be touched e.g. applications, programs.

Operating System

It is a software program that makes the computer function. Examples of operating systems are Windows and Linux. Some of the tasks that it performs are:

- To boot-up the computer.
- To control the hard drives. This involves the process of saving files to and retrieving files from the disk.
- To control input devices such as keyboards, mice and scanners.
- To control output devices such as the video display and printer.

Windows

This is proprietary software developed by Microsoft. Proprietary software is computer software on which the developer has set restrictions on use, private modification, copying, or republishing.

Linux

Linux is a community developed operating system. It is open source software; this means that a user is not restricted from using, modifying, copying, or republishing it.

1.1.3 Starting a Computer

You switch the computer on by pressing a button on the system unit/tower. On the screen a dialog box will appear requiring you to insert a username and password.

(i) Switching the computer on and off

- **Switching on**
Press the power button on the system unit/tower. The computer will now run through the start up process, which will take few minutes.
- **Switching off/ Shut down**
You click on the icon, usually it is on the far right corner at the top of the screen, when the dialog box appears, choose **Shut down**. After that the computer will shut down.

LESSON 2: WORD PROCESSING

2.1. File Management

File is a document used to write and save information. Folder is a tool used to contain files.

2.2. Creating a word document / a file

Go to start → All Programs → OpenOffice.org 3.0 → OpenOffice.org Writer



2.3. What is a window?

A window is a rectangular picture that appears on the screen which contains the title bar, menu bar, tool bar and the status bar.

2.3.1 The Title bar

It displays the name of the programme or window and the name of the document or programme that is being used. It is a bar which is situated on top of the document, usually blue in colour.

The following buttons are found on the far right corner of the title bar:

- **Minimize Button**
This button is used to hide a window from the screen and stores it on the taskbar. It is the first button with a minus sign.
- **Maximize Button**

It enlarges a window to a maximum size. It is the middle button with a box sign.

- **Close Button**

It closes a window. It is the X button on the top right corner of the document.

2.3.2. Menu Bar

It contains pull down menus that are activated by clicking on the required option. E.g. when one clicks on **File** the submenu under **File** will be displayed. This bar contains words such as **File, Edit, View, Insert, Format, Table, Tools, Window** and **Help**.

2.3.3. Toolbar

It is a bar that contains icons such as scissors, envelope, brush etc. These icons situated on the toolbar are the shortcuts used to perform task such as to save, open, paste, cut, copy, print, undo etc.

2.3.4. Taskbar

It is a bar on the bottom of the screen where the running document(s) is placed when minimized. In Windows operating system it contains a start button.

2.4. Typing a text

On the new word document design your CV, a CV template will be displayed on the board.

2.5. Saving the document

Go to **File** → **Save As**. On the dialog box that will appear open a place (e.g My Documents, My Computer, Removable Disk) where you want to save your document. This is done by clicking on the pulldown arrow which is in the same line with the word "**Save in**". Then choose the place where you want to save your document. To name your document type the name you wish to use in the space next to **File Name** and then click **Save**.

Note: when you editing your document, it is important to save regularly so that you do not lose your work.

Closing the document

To close the document click on the X (close button) on the top right corner of the document.

2.6. Editing an existing document

In Linux...

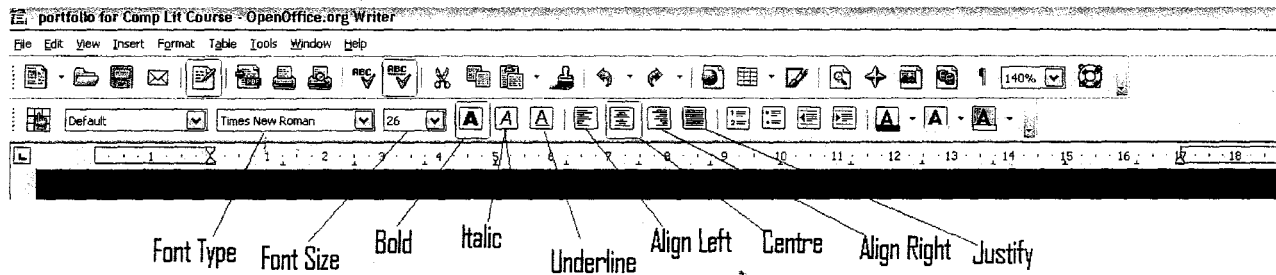
To open an existing document, go to **Applications** → **Office** → **OpenOffice.org Word Processor** then **File** → **Open** → **Sol** and choose the file you want to open and click **Open**.

In Windows...

To open an existing document, go to **Start → All Programs → OpenOffice.org 3.0 → OpenOffice.org Writer** then on this blank document click on **File → Open → My Documents**



Note: At times you might save the document in a Removable Disk instead of the My Documents folder. In that case you will have to select that particular Removable Disk and open the document from it. To do that you follow the same instructions, as illustrated above, then instead of My Documents you open the Removable Disk.

The following diagram illustrates some of the useful icons on the toolbar:



2.6.1. Document Editing (Cut, Copy and Paste)



- **Cut and Paste**

You first **highlight** the text then click on the **Cut icon**  on the toolbar. The text will disappear from where it was. Click where you want to put the text and then click on the **Paste icon**  on the toolbar.

OR

You **highlight** the text, then **right-click** on the mouse. A drop down list will appear, click on **Cut**. The text will disappear. Click where you want to paste the text, then right-click and click **Paste** from the dropdown list.

- **Copy and Paste**

You first **highlight** the text then click on the **Copy icon**  on the toolbar. Put the cursor where you want to put the text and then click on the **Paste icon**  on the toolbar.

OR

You **highlight** the text, then right-click on the mouse. A drop down list will appear, click on **Copy**. Click where you want to paste the text, then right-click and click **Paste** from the dropdown list.

NB: When you highlight, you click next to the text you want to highlight and **drag** the mouse pointer.

- **Deleting text**

It can be done in two ways:

- **Backspace** – it deletes the text to the left of the cursor.
- **Delete** – it deletes the text to the right of the cursor.

- **Inserting bullets and numbering**

Select the text, click on **Format → Bullets and Numbering**, and choose the type from the ones displayed then click **OK**.

- **Adding borders to a document**

To add a border to a page, click on **Format** → **Page** → **Borders**. Choose the style of the border then go to **User-defined** and click on all four sides then click **OK**.

- **Inserting page numbers**

To insert page numbers in your document, you first go to **Insert** → **Header** → **Default**, after clicking on **Default** you once again go to **Insert** → **Fields** → **Page Number**.

LESSON 3: SPREADSHEET USING OPENOFFICE.ORG CAL

What is a Spreadsheet?

A spreadsheet is a rectangular table designed for the processing of numbers (i.e. calculations). It consist of blocks known as cells, these cells form rows and columns.

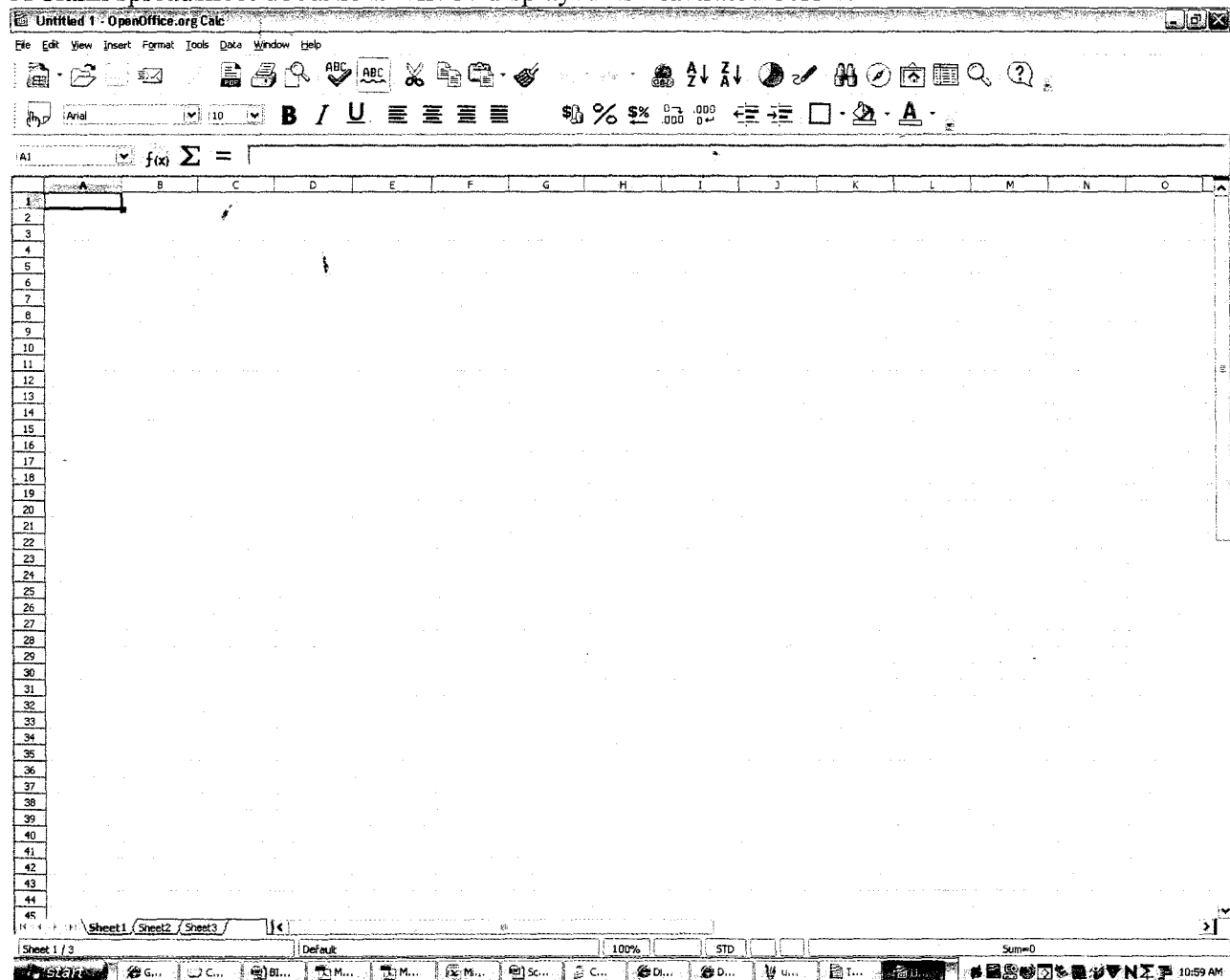
How to open a spreadsheet document on Linux?

Go to Applications → Office → OpenOffice.org Spreadsheet.

How to open a spreadsheet document on Windows?

Go to Start → All Programs → OpenOffice.org 3.0 → OpenOffice.org Calc

A blank spreadsheet document will be displayed as illustrated below:



Rows: run from left to right/horizontally and are numbered.

Columns: run from top to bottom/vertically and are labelled with the letters of the alphabet.

Active cell: the cell in which data/information is currently being entered and is bold.

Entering and Formatting Data

Both text and numerical data/information can be entered. To enter data simply click on the relevant cell and begin to type. When you have completed your data entry, press **Enter** to move to the cell below or the **Tab** key to move to the cell to the right. You may also use the keyboard arrows to move to an adjacent cell (i.e. a cell to the right/left/ above/below).

Note: Some of the text may not be visible therefore the columns will have to be widened.

To widen a column point with the mouse pointer between the letters in the header, a double-headed arrow will appear. Click and drag the arrow to adjust the column to the appropriate size.

On a blank document create the following spreadsheet by entering the data displayed below:

Test Marks on OpenOffice.xls - OpenOffice.org Calc

File Edit View Insert Format Tools Data Window Help

Arial 10 **B** *I* U [Text Alignment Icons] \$ % \$% 0.000 0.000

A27 f(x) Σ =

	A	B	C	D	E	F	G	H
1	Name Surname	Test1	Test2	Test3	Total	Average		
2	Tom Sandile	47	46	89	182	60.67		
3	Mhlekezzi Andile	23	23	99	145	48.33		
4	Teyisi Siphokazi	32	33	34	99	33		
5	Mzomhle Thomas	86	89	29	204	68		
6	Belem Thando	56	65	23	144	48		
7	Mdodana Thulani	67	23	34	124	41.33		
8	Tokwe Yuvokazi	23	54	45	122	40.67		
9	Mlimi Khayaletu	23	54	34	111	37		
10	Zathu Khumbulani	34	87	87	208	69.33		
11	Phela Leletu	56	76	67	199	66.33		
12	Vani Siyabulela	97	98	45	240	80		
13	Dyantvisi Siyabonga	45	76	76	197	65.67		
14	Mgavi Mthetho	86	78	86	250	83.33		
15	Lamani Simphiwe	67	87	98	252	84		
16								
17								
18								

To select cells on your spreadsheet

1. Click on the first cell of the range you want to select.
2. Hold down the left mouse button and drag the cursor to the last cell of the range.

OR

- Hold down the **Shift** key and use the keyboard arrows to move to the last cell of the range you want to select.

Rows and Columns

To select a column

- An entire column
 - Click on the column letter
- A range of adjacent columns
 - Click on the column letter of the first of the columns.
 - Hold down the **Shift** key and click on the column letter of the final column.

OR

- Click on the column letter of the first of the columns.
- Hold down the **Shift** key and use the keyboard arrows to move to the last column of the range.

To select a row

- An entire row
 - Click on the row number
- A range of adjacent rows
 - Click on the column letter of the first of the rows.
 - Hold down the **Shift** key and click on the row number of the final row.

OR

- Click on the row number of the first of the rows.
- Hold down the **Shift** key and use the keyboard arrows to move to the last row of the range.

To insert rows and columns

- Suppose we having a list of students in a spreadsheet document, as illustrated below, now we want to edit their information, below there are instructions on how to do that.

	A	B	C	D	E	F	G	H
1	Name Surname	Test1	Test2	Test3	Total	Average		
2	Tom Sandile	47	46	89	182	60.67		
3	Mhlekezi Andile	23	23	99	145	48.33		
4	Tevisi Siphokazi	32	33	34	99	33		
5	Mzomhle Thomas	86	89	29	204	68		
6	Belem Thando	56	65	23	144	48		
7	Mgodana Thulani	67	23	34	124	41.33		
8	Tokwe Vuyokazi	23	54	45	122	40.67		
9	Mlimi Khayaletu	23	54	34	111	37		
10	Zathu Khumbulani	34	87	87	208	69.33		
11	Phela Lelethu	56	76	67	199	66.33		
12	Vani Siyabulela	97	98	45	240	80		
13	Dyantvisi Siyabonga	45	76	76	197	65.67		
14	Mgavi Mthetho	86	78	86	250	83.33		
15	Lamani Simphiwe	67	87	98	252	84		
16								
17								
18								

Figure 1: Test Marks

- To insert a row
 - If you want to insert a row after student 7 (i.e. Mgodana Thulani).
 - Click on row 8:
 - On your **Menu** bar, go to **Insert → Rows**, then a new row (row 8) will be inserted.

- To insert a number of rows
 - If you want to insert three rows after student 7 (i.e. Mgodana Thulani).
 - Select rows 8 – 10.
 - Go to **Insert → Rows**, three rows will be inserted after row 7.

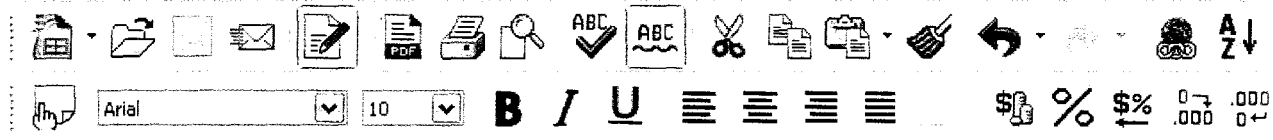
- To insert a column
 - If you want to insert a column after the letter C.
 - Click on column D.
 - On your **Menu** bar, go to **Insert → Columns**, then a new column (column D) will be inserted.

- To insert a number of columns
 - If you want to insert three columns after the letter C.
 - Select columns D,E & F.
 - Go to **Insert → Columns**, three columns will be inserted after column C.

- To delete rows or columns
 - Select the rows or columns you want to delete.
 - Go to **Edit → Delete Cells** [this will display a Delete Cells dialogue]
 - Click on the **Delete entire row(s)** or **Delete entire column(s)**.
 - Then click OK.

Sort Data

Data can be sorted in ascending/descending numeric order or ascending/descending alphabetic order. If you wish to sort the following data (illustrated below) into descending alphabetic order, instructions are as follow:



A27 f(x) Σ =

	A	B	C	D	E	F	G	H
1	Name Surname	Test1	Test2	Test3	Total	Average		
2	Tom Sandile	47	46	89	182	60.67		
3	Mhlekezzi Andile	23	23	99	145	48.33		
4	Teyisi Siphokazi	32	33	34	99	33		
5	Mzomhle Thomas	86	89	29	204	68		
6	Belem Thando	56	65	23	144	48		
7	Mdodana Thulani	67	23	34	124	41.33		
8	Tokwe Vuyokazi	23	54	45	122	40.67		
9	Mlimi Khayaletu	23	54	34	111	37		
10	Zathu Khumbulani	34	87	87	208	69.33		
11	Phela Lelethu	56	76	67	199	66.33		
12	Vani Siyabulela	97	98	45	240	80		
13	Dvantvisi Siyabonga	45	76	76	197	65.67		
14	Mgayi Mthetho	86	78	86	250	83.33		
15	Lamani Simphiwe	67	87	98	252	84		
16								
17								
18								
19								
20								

- Highlight the range of cells to be sorted.
- Go to **Data** → **Sort** (on the **Menu** bar).
- Set the criteria in the **Sort Criteria** dialogue.
- Click **OK**

Test Marks on OpenOffice.xls - OpenOffice.org Calc

File Edit View Insert Format Tools Data Window Help

Arial 10 B I U

A2:G16 f(x) Σ = Lamani Simphiwe

	A	B	C	D	E	F
1	Name Surname	Test1	Test2	Test3	Total	Average
2	Lamani Simphiwe	67	87	98	252	84
3	Mgavi Mthetho	86	78	86	250	83.33
4	Yani Siyabulela	97	98	45	240	80
5	Zathu Khumbulani	34	87	87	208	69.33
6	Mzomhle Thomas	86	89	29	204	68
7	Phela Lelethu	56	76	67	199	66.33
8	Dyantvisi Siyabonga	45	76	76	197	65.67
9	Tom Sandile	47	46	89	182	60.67
10	Mhlekezi Andile	23	23	99	145	48.33
11	Belem Thando	56	65	23	144	48
12	Mdodana Thulani	67	23	34	124	41.33
13	Tokwe Yuyokazi	23	54	45	122	40.67
14	Mlimi Khayailethu	23	54	34	111	37
15	Tevisi Siphokazi	32	33	34	99	33

Sort

Sort Criteria Options

Sort by: Columns A

Ascending Descending

Then by: - undefined -

Ascending Descending

Then by: - undefined -

Ascending Descending

OK Cancel Help Reset

Note: Before sorting the data, you highlight only the data excluding the headings. If you don't highlight all your data you want to sort, e.g. on the above illustration if we could have highlighted the first column only – we were only going to sort names that do not correspond to their marks.

After clicking **OK**, your data will be sorted as illustrated below:

Test Marks on OpenOffice.xls - OpenOffice.org Calc

File Edit View Insert Format Tools Data Window Help

Arial 10 B I U

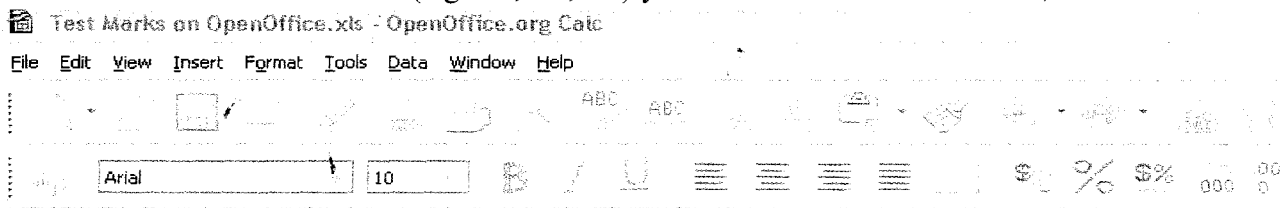
H34 f(x) Σ =

	A	B	C	D	E	F	G	H	I
1	Name Surname	Test1	Test2	Test3	Total	Average			
2	Belem Thando	56	65	23	144	48			
3	Dyantvisi Siyabonga	45	76	76	197	65.67			
4	Lamani Simphiwe	67	87	98	252	84			
5	Mdodana Thulani	67	23	34	124	41.33			
6	Mgavi Mthetho	86	78	86	250	83.33			
7	Mhlekezi Andile	23	23	99	145	48.33			
8	Mlimi Khayailethu	23	54	34	111	37			
9	Mzomhle Thomas	86	89	29	204	68			
10	Phela Lelethu	56	76	67	199	66.33			
11	Tevisi Siphokazi	32	33	34	99	33			
12	Tokwe Yuyokazi	23	54	45	122	40.67			
13	Tom Sandile	47	46	89	182	60.67			
14	Yani Siyabulela	97	98	45	240	80			
15	Zathu Khumbulani	34	87	87	208	69.33			

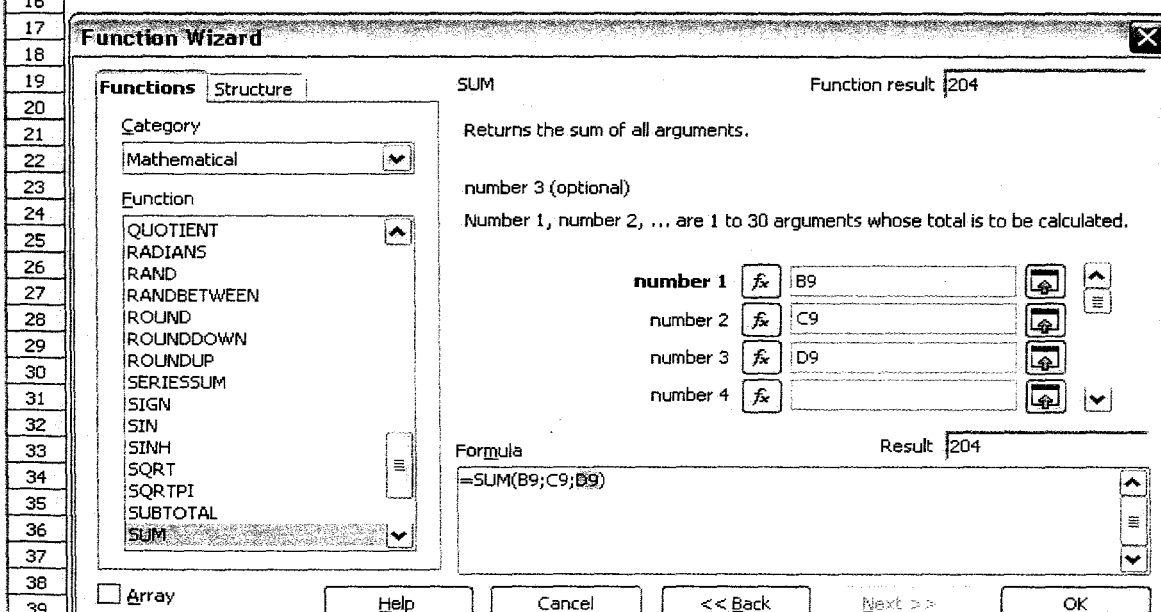
Working with Functions

In this section we are only going to discuss **SUM** and **AVERAGE** functions. Sum and Average work almost the same way, a student is suppose to be able to specify the cells to do calculations on. Study the following instructions and apply them in your data:

- **SUM**
 - Select the cell where you would like to insert your **SUM** results.
 - Double click on the symbol (**f(x)**) on your **Function bar**, then a **Function Wizard** will appear.
 - From the list of functions choose by double clicking **SUM**, the **Function Wizard** will be displayed as illustrated below.
 - In those spaces provided (next to each number i.e. **number 1; number 2 ...**), fill in the cell numbers (e.g. B9, C9, D9) you want to calculate their sum, then click **OK**.



	A	B	C	D	E	F	G	H
1	Name Surname	Test1	Test2	Test3	Total	Average		
2	Belem Ihando	56	65	23	144	48		
3	Dyanyisi Siyabonga	45	76	76	197	65.67		
4	Lamani Simphiwe	67	87	98	252			
5	Mgodana Thulani	67	23	34	124			
6	Mgavi Mthetho	86	78	86	250			
7	Mhlekezi Andile	23	23	99	145			
8	Mliri Khayalethu	23	54	34	111			
9	Mzomhle Thomas	86	89	29				
10	Phela Lelethu	56	76	67				
11	Teyisi Siphokazi	32	33	34				
12	Tokwe Yuvokazi	23	54	45				
13	Tom Sandile	47	46	89				
14	Vani Siyabulela	97	98	45				
15	Zathu Khumbulani	34	87	87				



- **AVERAGE**

- Select the cell where you would like to insert your **AVERAGE** results.
- Double click on the symbol (**f(x)**) on your **Function bar**, then a **Function Wizard** will appear.
- From the list of functions choose by double clicking **AVERAGE**, the **Function Wizard** will be displayed.
- In those spaces provided (next to each number i.e. **number 1; number 2 ...**), fill in the cell numbers (e.g. B9, C9, D9) you want to calculate their average, then click **OK**.

Note: Let us say that you have a long list of students and you do not want to manually calculate their SUM/AVERAGE. In order to solve this problem, after you have calculated the SUM/AVERAGE of the first two students, click on the last SUM/AVERAGE results you have calculated. The cell will be highlighted. In the bottom right corner of the cell, there is a very small square box. When you point at that box, the mouse pointer changes and it becomes a plus (+) sign. Press and drag the mouse down the column to your last entry of the SUM/AVERAGE results. This will automatically calculate the SUM/AVERAGE of the remaining students.

LESSON 4: PRESENTATIONS USING OPENOFFICE.ORG IMPRESS

What is OpenOffice.org Impress?

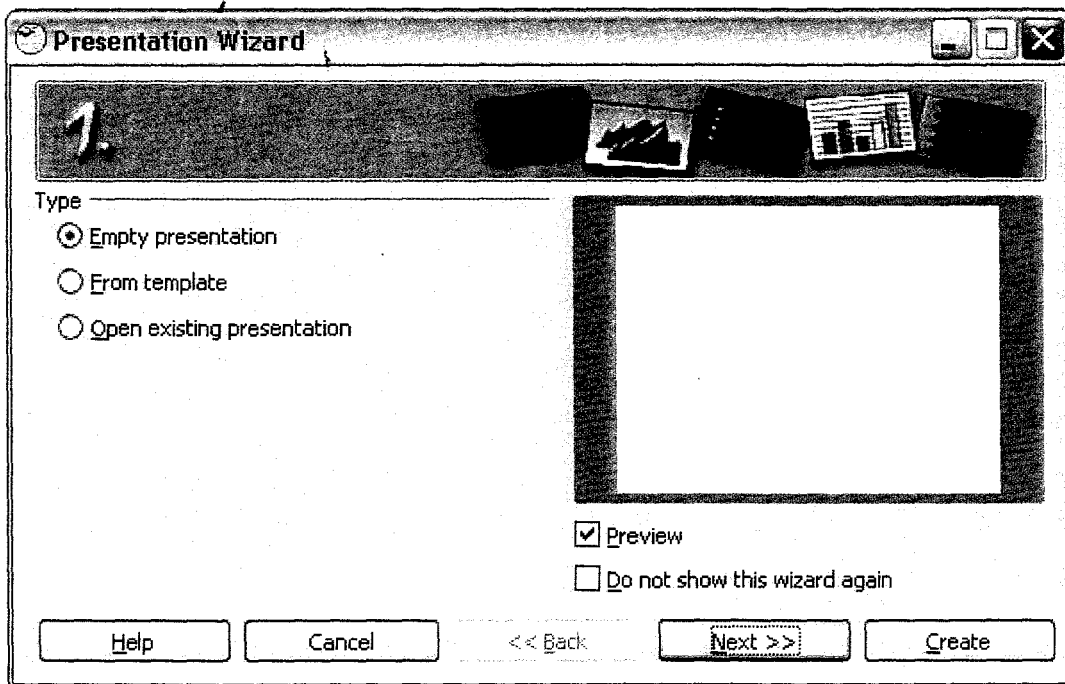
It is a presentation program similar to Microsoft PowerPoint. It consists of a collection of slides that can be used for presentation of lessons, assignments, business, etc.

How to open OpenOffice.org Impress

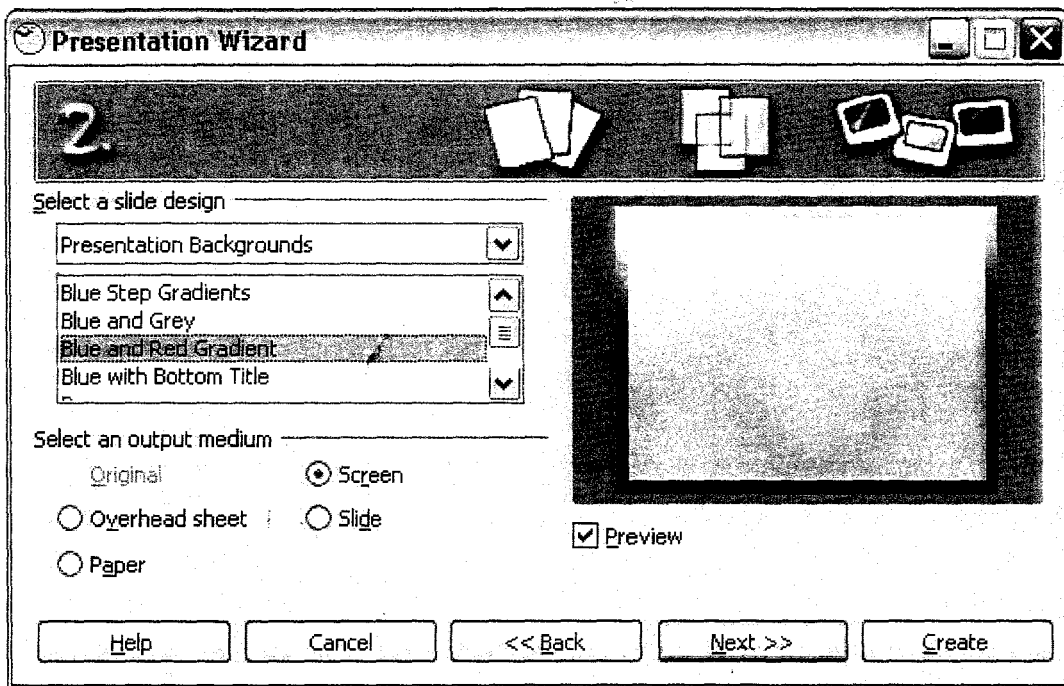
Click on the **Start** button → Select **All Programs** → **Openoffice.org 3.0** → click **Openoffice.org Impress**. A **Presentation Wizard** will appear (as illustrated below) allowing you to create you presentation document.

1. Three options will be displayed, after choosing one of them click next :

- If you would like to create a new document, select **Empty presentation**.
- If you want to open a template, select **From template**.
- If you wish to open an existing document, select **Open existing presentation**

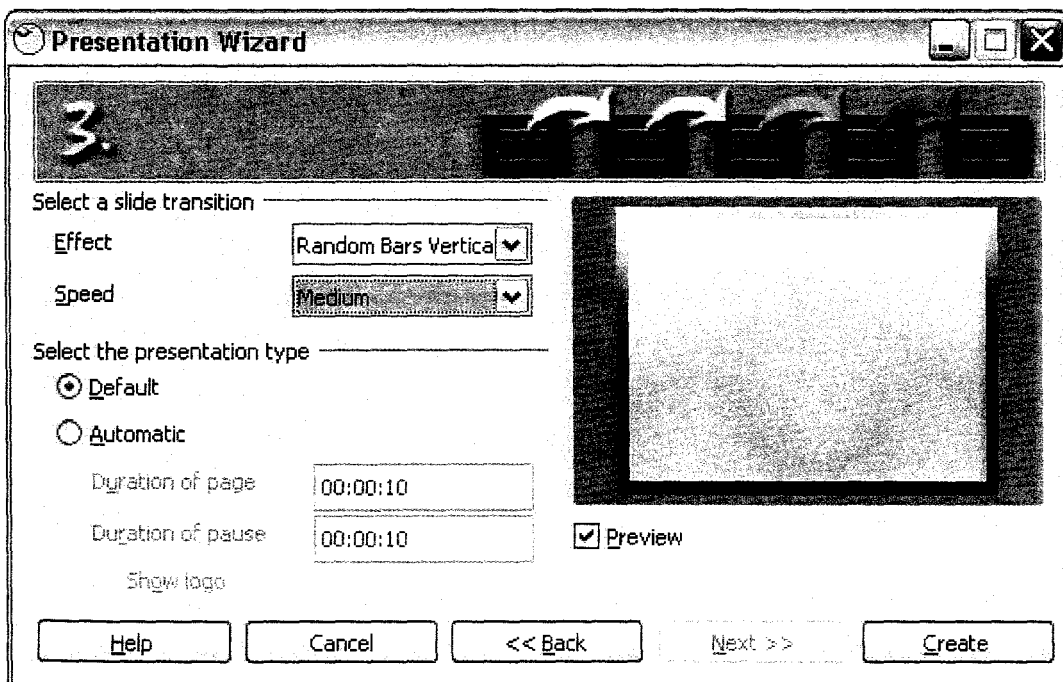


2. Select a slide design, then click next



3. Select a slide transition and the presentation type

- Slide transition refers to the methods you use to setup your slides such that they can rise, fall, fade, etc, when presenting. To do this just setup the following:
 - Select the **Effect**
 - Select the **Speed**
- Presentation type refers to the time you allocate for each slide or you choose to use the default settings.
 - **Default** – if you want to manually go to the next slide.
 - **Automatic** – when you want a slide to automatically proceed after a specified time.



After the third step click on Create. After clicking on **Create** a window with a blank slide will appear.

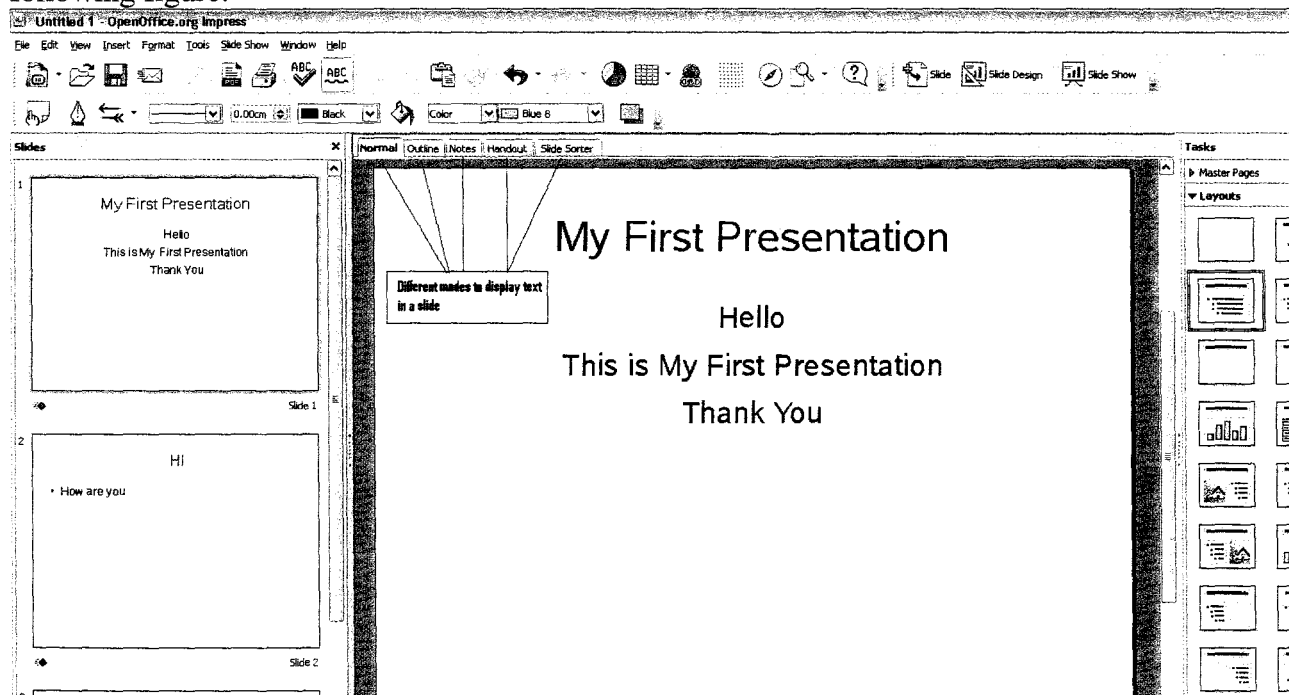
Note: The default (present) slide is blank. You can create your slide to have a title and a text by clicking on the **Layouts** listed on the right hand side. Each slide layout has a description, which explains more about the layout. To select a slide layout, double click on the desired option.. To add a new slide click on the icon written **Slide** on the tool bar. Across the top of the window you will notice toolbars that look similar to the ones used in word processing programmes. These tools allow you to format and edit text and other elements in your slide.

The layouts on the right pane of the window will help you on how to organise text in your slide. You can enter text by clicking on the box written “**Click to add title**” and the one written “**Click to add text**”.

The text entered in a slide can be represented and displayed in many ways i.e. normal, outline, notes, handout and slide sorter views.

- Normal view – this view is suitable for editing a single slide.
- Outline view – the slide is displayed in text form and is very useful for editing purposes.
- Notes view – you can add notes to a slide for later use. This is not displayed when you show the presentation, but can be printed.
- Handout view – you may view a presentation as it would appear on the printed page.
- Slide sorter view – in this mode, slides are displayed side by side in reduced form.

To view all these modes, in your presentation document, click on the tabs illustrated in the following figure:



LESSON 5: INTERNET

What is Internet?

Internet is a collection of computers around the world that are linked together. These computers can talk to each other and share information. If your computer is connected to Internet, it can connect to other computers all round the world.

What can be done on the Internet?

- Internet can be used to do the following:
 - to access information.
 - to communicate internationally.
 - to find information for research.
 - it can be used as an educational tool.
 - it can be used for leisure.
 - it can be used for business purposes.

The World Wide Web (WWW)

We need to understand that there is a difference between the Internet and the World Wide Web known as WWW.

The World Wide Web is a collection of millions of pages of information, or millions of documents containing information.


Some of the terms that are used on WWW are as follows:

HTTP [Hyper Text Transfer Protocol]: The 'language' spoken between computers to help them exchange information over the WWW.

URL [Uniform Resource Locator]: This is the address of a resource (web site) on the Internet. It is just a fancy technology word for "address".

Hyperlink: A link in a document to information within that document or to another document. These links are usually represented by highlighted words or images.

The hyperlink has the following features:

- It is a word underlined in blue (it can be other colours sometimes).
- If you move your mouse pointer over a hyperlink it will change to the shape of a hand, like this: 
- Pictures can also be hyperlinks
- If you click on the hyperlink you will go to a different page

ISP [Internet Service Provider]: A company that provides an internet connection.

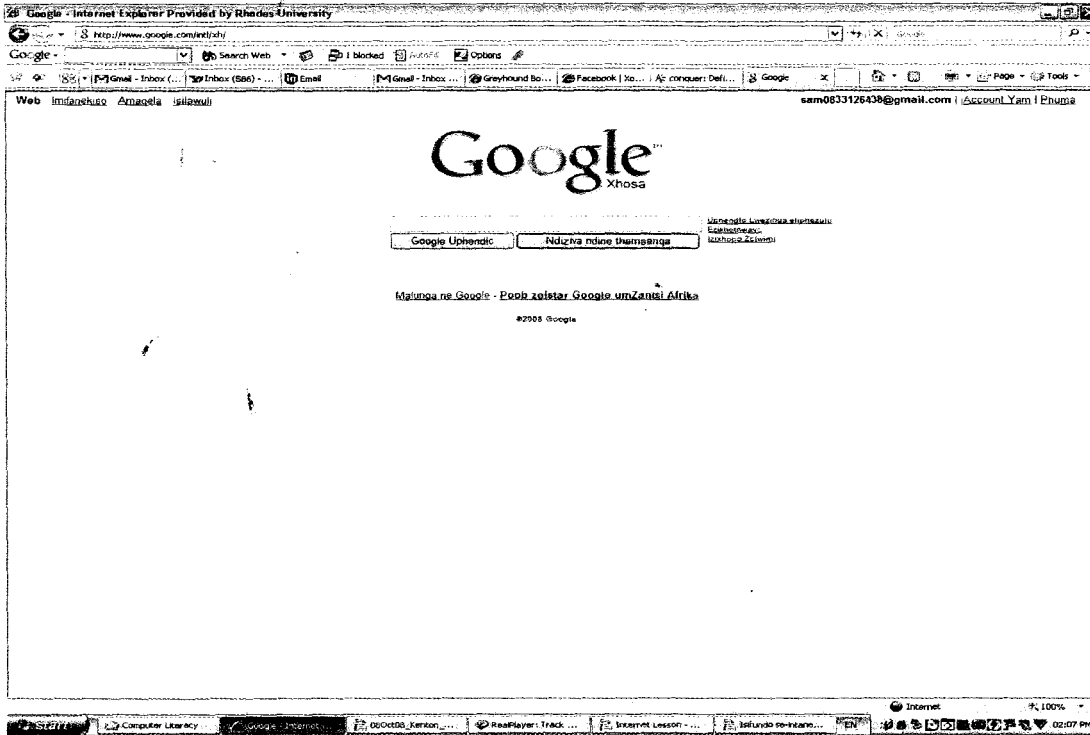
Web page: Is a resource of information or a document from the WWW. For example the website for Rhodes University can be found at the following URL (address): <http://www.ru.ac.za>. This site contains documents with information about the Rhodes University, it has photo gallery and contact information. Each of these document is a separate web page.

Search Engine: A search engine helps users find information (or web pages) from the WWW. Examples of search engines are Google, Yahoo, Ananzi, etc. A user can open a search engine by typing the URL in the address bar. Google is the commonly used search engine, if you want to open

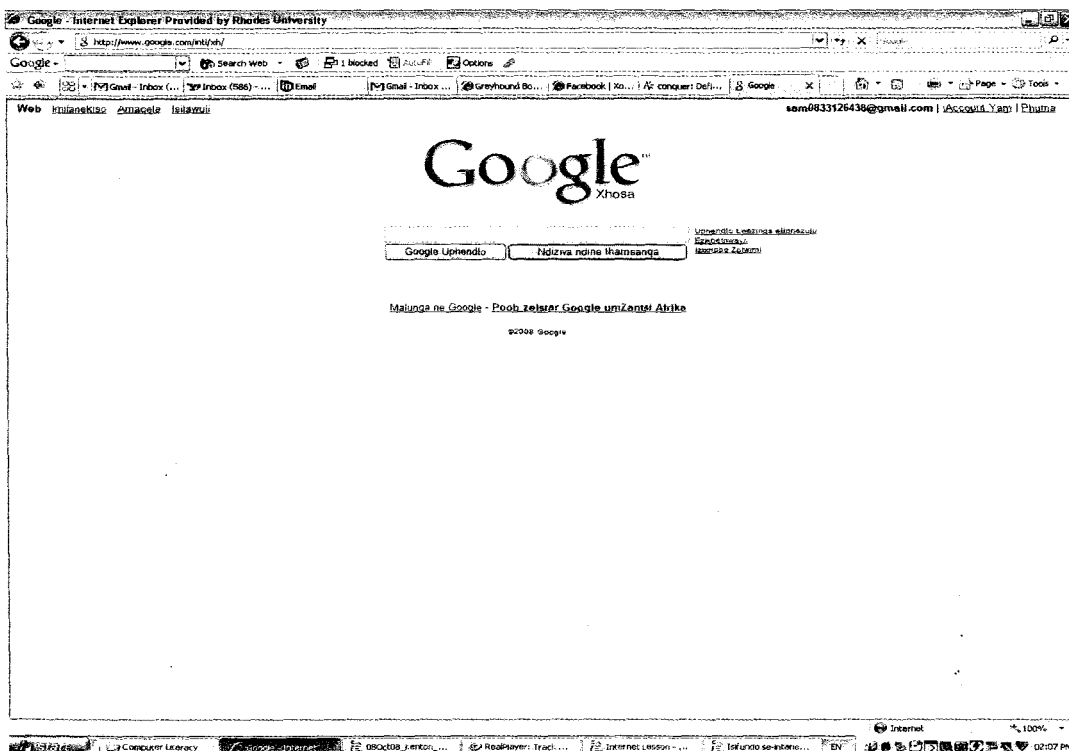
it you can type the following URL in the address bar: www.google.com . You will then see a page such as the one Illustrated below:

The Web Browser

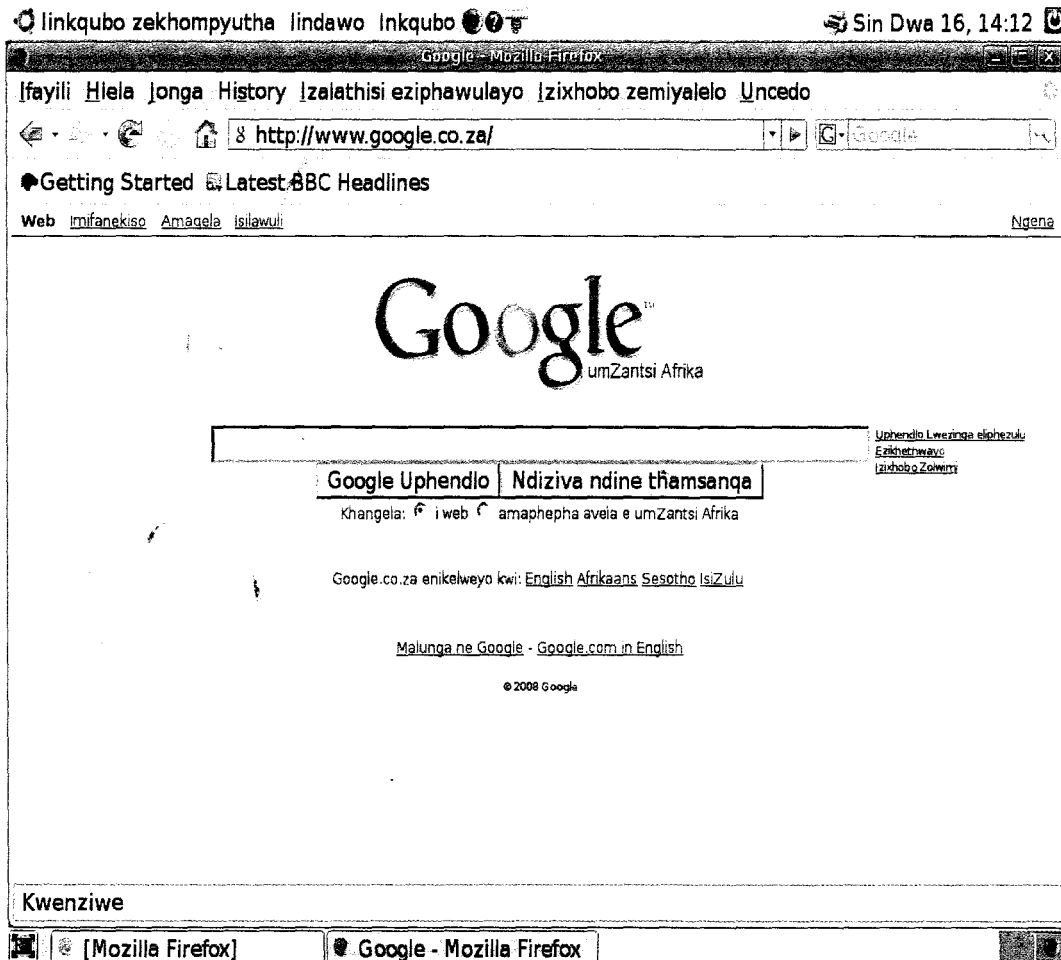
The Web Browser is the programme we use to browse the internet and the WWW. The most commonly used web browsers are Microsoft Internet Explorer and Mozilla Firefox. A web browser is used to search from one website to another.



This is what Microsoft Internet Explorer looks like:



This is what Mozilla Firefox looks like:

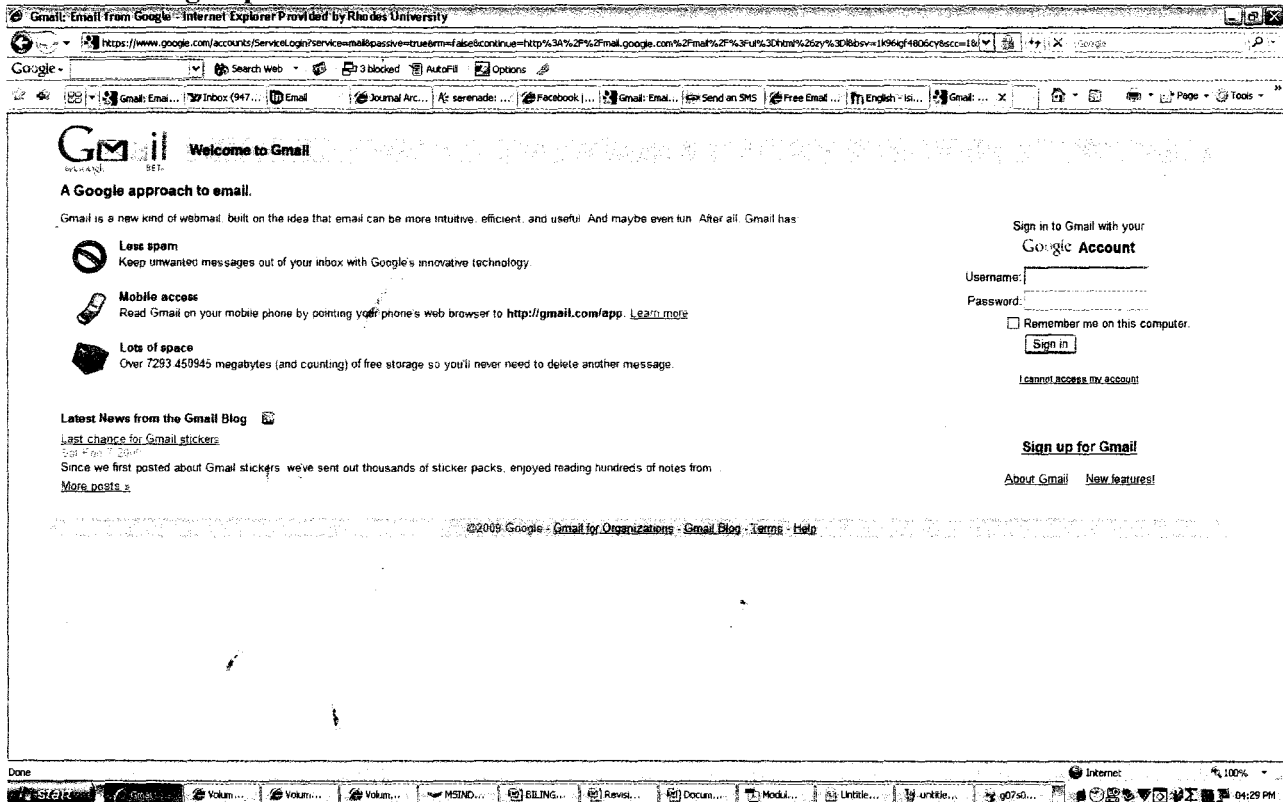


Creating an email account

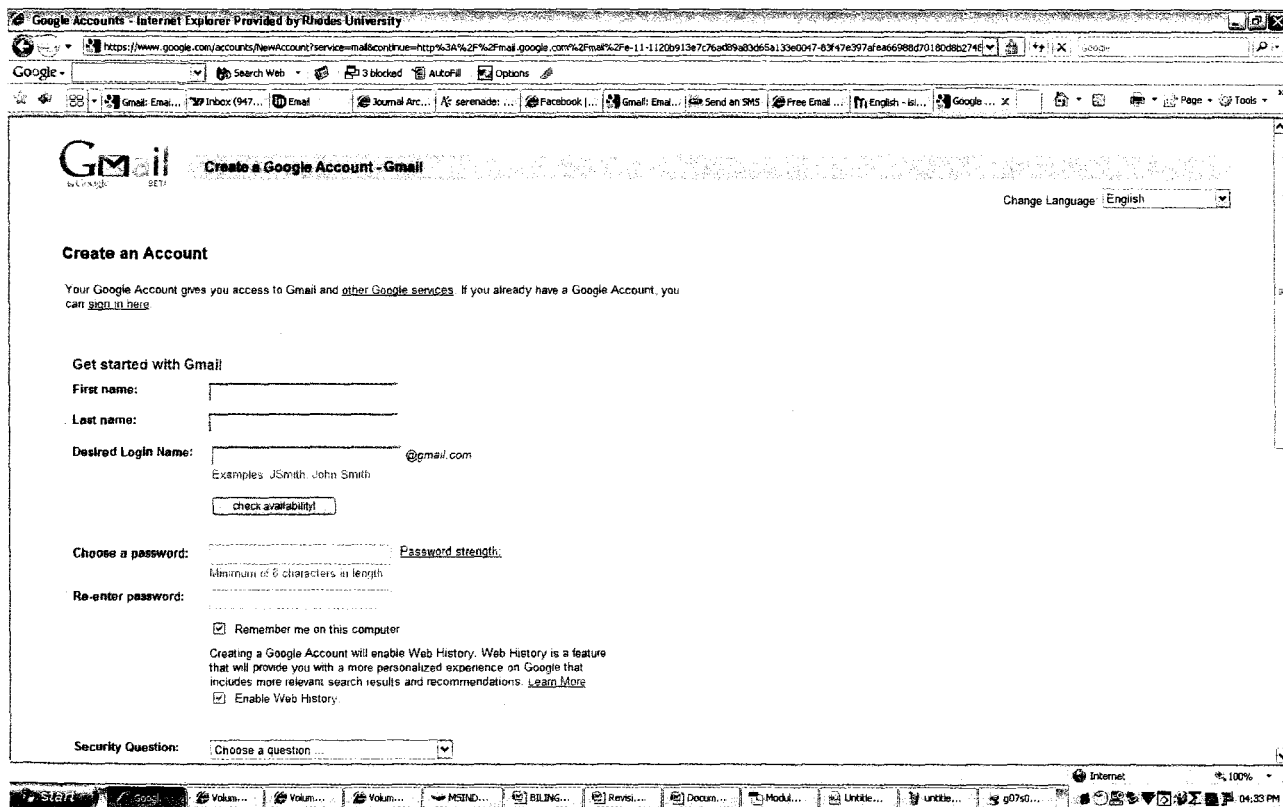
An email (in full electronic mail) is a medium used to communicate over the Web. It is a typical letter or message which can be sent from one user to another. It is used over internet and for this reason it is fast. One can send and receive text and picture messages when using emails. Examples of emails are yahooemail, gmail, webmail, hotmail, etc.

We will illustrate on how to create an account when using a gmail (or googlemail). On your web browser go to www.gmail.com. A page like the one displayed below will be displayed:

1. Click on Sign up for Gmail



2. Complete all the required details to create an account and after that click on I accept. Create my Account.



You will then be able to go to the login page, as illustrated in step 1 above, and login with the details you provided.

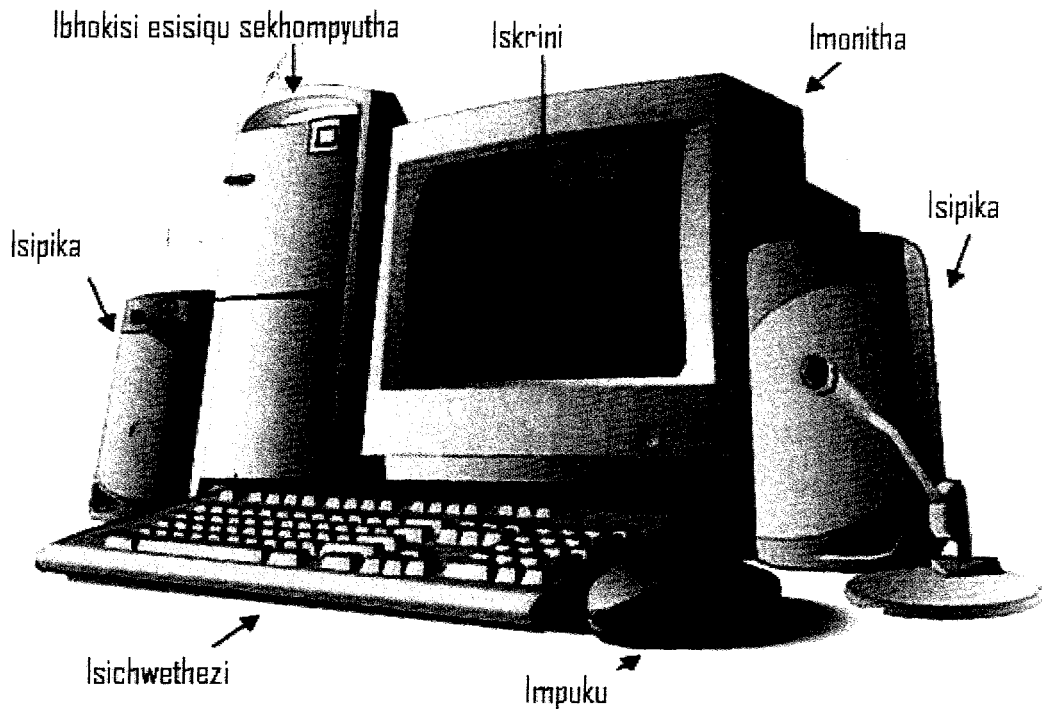
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1. INTSHAYELELO NGEEKHOMPYUTHA

○ 1.1. Ikhompyutha

Ikhompyutha ngumatshini osetyenziselwa ukufaka, ukuhlela, ukugcina, ukubonisa/ukukhupha iinkcukacha.



1.1.
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Umfanekiso 1: IKhompyutha

ompyutha abambekayo. Umzekelo ingqondo yekhompyutha(CPU), ibhokisi esisiqu sekhompyutha (Tower), isichwethezi, imonitha, iskrini, isigcina-lwazi (memory), impuku, isishicileli, iskena, njalo njalo.

Izifaki-nkcukacha kwikhompyutha

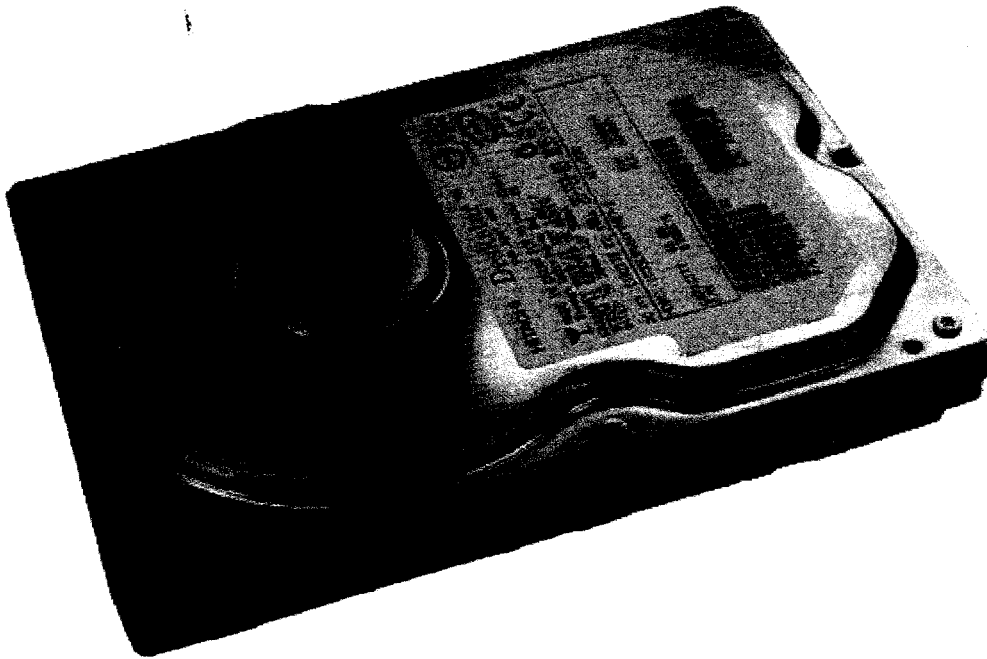
Ezi zizixhobo zokufaka iinkcukacha, umzekelo isichwethezi, impuku, iskena.

- Isichwethezi - Esi sisixhobo sokufaka iinkcukacha kwikhompyutha.
- Impuku – Sisifaki-nkcukacha esisetyenziswa ukuchwetha, ukurhuqa, ukwalatha nokugxininisa isiqendu sombhalo. Kukho amaqhosha amabini angaphambili empukwini, elinye lisekhohlo elinye lisekunene. Iqhosha elisekhohlo lisebenza rhoqo lona elisekunene libonisa uluhlu lokwenza imisebenzi engemnye.
- Iskena - Sisifaki-nkcukacha esisetyenziswa ukutshintsha iphepha ngenjongo yokuliguqula libe kwimeko elungele ukufakwa ligcinwe okanye lisetyenziswe kwikhompyutha. Iphepha eliguqulwe ngokuskenwa iinkcukacha zalo zifakwa kwisigcini-nkcukacha onakho ukusifaka kwikhompyutha ukuze kuvele iinkcukacha zephepha elo liguqulweyo. Iskena siyazihambela, asikho kwikhompyutha.

- Izikhuphi-nkcukacha

Ezi zizixhobo ezisetyenziselwa ukubonisa/ukukhupha iinkcukacha, umzekelo: iskrini, isipika (isikhuphi-lizwi) nesishicileli.

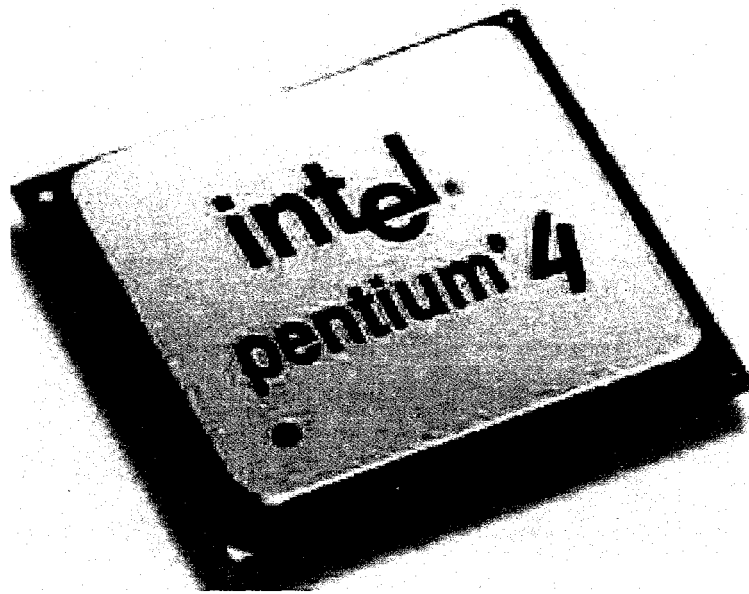
- Iskrini - sisixhobo sokubonisa/ukuveza iinkcukacha.
 - Isishicileli - sisixhobo sokushicilela esikhuphela iinkcukacha ngaphandle kwikhompyutha zikhutshelwe ephepheni.
 - Isipika\ Isikhuphi-sandi - isixhobo sokukhupha isandi kwikhompyutha.
 - Imonitha - sisixhobo ekuhlala kuso iskrini.
- Izigcini-nkcukacha
- Ezi zizixhobo zokugcina iinkcukacha, umzekelo icwecwe(CD), umcinga osisigcini-nkcukacha (Memory stick), i-floppy disc, nezinye.
- I-CD - licwecwe eligcina isandi, iinkcukacha, imifanekiso, njalo njalo.
 - Umcinga osisigcini-nkcukacha - sisixhobo esincinane esiphathekayo esisetyenziselwa ukugcina iinkcukacha neefayile zemiboniso. Yenzelwa ukusebenza ngcono kunefloppy disks.
 - Isigcini-nkcukacha esingundoqo - Sisixhobo sokugcina esingatshintshiyo esifumaneka phakathi ekhompyutheni.



Umfanekiso 2: Isigcini-nkcukacha esingundoqo

- Inqondo yekhompyutha(CPU)

Yingqondo yekhomyutha – apho ikhomyutha icinga, ibale khona. Yeyona ndawo ibalulekileyo ukuqhubekisela phambili umsebenzi wekhomyutha.



Umfanekiso 3: Inggondo yekhomyutha (CPU)

- Ibhokisi esisiqu sekhomyutha (Tower) - yibhokisi equlathe izinto ezibalulekileyo zekhomyutha, umzekelo, ingqondo yekhomyutha (CPU).
- Isigcina-lwazi (Memory) - sisigcini-nkcukacha kwikhomyutha esinceda ukukhumbula umsebenzi ogciniweyo siwuveze xa kufuneka njalo. Zimbini iindawo zokugcina iinkcukacha.
 1. Ezizenye (Secondary storage) – izigcini-nkcukacha ezizezi: icwecwe (DVD/CD), umcinga wokugcina iinkcukacha, isigcini-nkcukacha esingundoqo. Igcina iinkcukacha nokuba ikhomyutha icimile.
 2. Ephambili (Primary storage) – igcina iinkcukacha kwikhomyutha lo mzuzu uyisebenzisayo, umzekelo, i-RAM neROM.
- *I-Random Access Memory (I-RAM)* I-RAM licwecwe eligcina iinkqubo kwakunye neenkukacha ezisetyenziswa ekhomyutheni ngeloxesha lithile. Okuqulathwe yiRAM kungatshintshwa kuba yona igcina iinkqubo neenkukacha okwethutyana. Xa ikhomyutha icinyiwe konke okuqulathwe yiRAM kuyalahleka. Oluhlobo lwecwecwe lolwazi oluthi lulahle iinkqubo xa ikhomyutha icinyiwe lubizwa ngokuba yivolatile memory.
- *I-Read Only Memory (I-ROM)*
Iinkqubo neenkukacha ezigcinwe kwiROM zisisigxina kwaye azitshintsheki. Xa ikhomyutha icinyiwe okuqulathwe kwiROM kuhlala kukhona. Oluhlobo lwecwecwe lolwazi olukugcinayo ukuqulathiweyo xa ikhomyutha icinyiwe lubizwa ngokuba yinon-volatile memory. Owona msebenzi welicwecwe lolwazi iROM kukugcina izixhobo zakhomyutha ezingabambekiyo ezithi zilawule xa ikhomyutha ilayitwa. Le nkqubo ibizwa ngokuba yiBIOS yaye ithulula isixokelelwano sokulawula umsebenzi ekhomyutheni (*i-Operating System*) umzekelo uWindows XP okanye uLinux.

1.1.2 Izixhobo ezingabambekiyo

Ibhekisele kwiinkqubo ezilawula ikhomyutha nezithi ziyenze isebenze. Ezi zizixhobo ongenakuzibona okanye uzibambe, umz: iinkqubo-ziyaleli kwikhomyutha.

Inkqubo esetyenziswayo ukulawula ikhompyutha

Sisixhobo esingabambekiyo esibangela ukuba ikhompyutha isebenze. Imizekelo yeenkqubo ezisetyenziswayo ukulawula ikhompyutha ngu*Windows* no*Linux*. Eminye yemisebenzi eyenzayo yile:

- Ukuqala/ukulayita ikhompyutha.
- Ukulawula isigcini-nkcukacha esingundoqo. Oku kuquka inkqubo yokugcina nokufumana iifayile kwisigcini-nkcukacha.
- Ukulawula izifaki-nkcukacha ezinjengesichwethezi, impuku neskena.
- Ukulawula izikhuphi-nkcukacha ezifana nevidiyo nesishicileli.

UWindows

Ezi zizixhobo ezingabambekiyo zekhompyutha ezaphuhliswa ngu*Microsoft*. Olu hlobo lwezixhobo ezingabambekiyo zekhompyutha umvelisi walwo uliphuhlisele ukuba lusetyenziswe ngokuqingqiweyo, kungabikho msebenzisi uzilungiselelayo, lingakotshwa okanye liphuhliswe ngokungekho mthethweni.

ULinux

ULinux sisixokelelwano sokulawula sokulawula umsebenzi ekhompyutheni esaphuhliswa luluntu. Sisixhobo sekhompyutha esingabambekiyo esingenamida ekusetyenzisweni, oku kuthetha ukuba umsebenzisi akaqingqwanga ekusisebenziseni, uvumelekile ukuba asihlela-hlele, asikope okanye aphinde asiphuhlise ngokutsha.

1.1.3 Ukuqala ikhompyutha

Ucofa iqhosha lokulayita kwibhokisi esisiqu sekhompyutha. Kwiskrini kuza kuvela ibhokisana efuna ukuba ufake iinkcukacha zakho ezikunika imvume yokusebenzisa ikhompyutha.

(i) Ukulayita nokucima ikhompyutha

- Ukulayita ikhompyutha
Cinezela iqhosha lokulayitha umbane. Ikhompyutha iza kuthatha imizuzwana ukuvula.
- Ukucima/ukuvala ikhompyutha
Cinezela kwiqhosha, ngokwesiqhelo libakwikona ephezulu ekunene kwiskrini, xa kuvele ibhokisana ekuyalela omawukwenze khetha u-Shutdown (Vala). Emva koko ikhompyutha iza kucima.

2. UKUBHALA KUXWEBHU

2.1. Ukuphathwa kweefayili

Ifayili luxwebhu lokubhala nokugcina iinkcukacha. Isiqulathi-fayili sisixhobo sokugcina amaxwebhu.

2.2. Ukudala uxwebhu lokubhala/ifayili

Yiya ku Start → All Programs → OpenOffice.org 3.0 → OpenOffice.org Writer



2.3. Yintoni ifestile?

Ifestile ngumfanekiso obuxande obonakala kwisikrini onomgca wesihloko, umgca woluhlu, umgca wezixhobo kunye nomgca wesimo soxwebhu.

2.3.1. Umgca wesihloko

Ngumgca obanakalisa igama lefestile okanye inkqubo negama lolo xwebhu lisetyenziswayo ngelo xesha. Ngumgca osemantla koxwebhu, uqhele ukuba zuba ngombala.

La maqhosha alandelayo afumaneka kwikona esekunene kumgca wesihloko:

- Iqhosha Lokucutha
Eli qhosha lisetyenziselwa ukufihla uxwebhu esikrinini yaye lilubeka emazantsi esikrini kumgca wemisebenzi. Liqhosha lokuqala elinophawu olunje “-”.
- Iqhosha Lokwandisa

Eli liqhosha lokwandisa uxwebhu okanye ifestile. Liqhosha eliphakathi elinophawu lwebhokisi.

- Iqhosa lokuvala
Livala ifestile. Liqhosha elino-X elisekoneni yasekunene kuxwebhu.

2.3.2 Umgca wemenyu

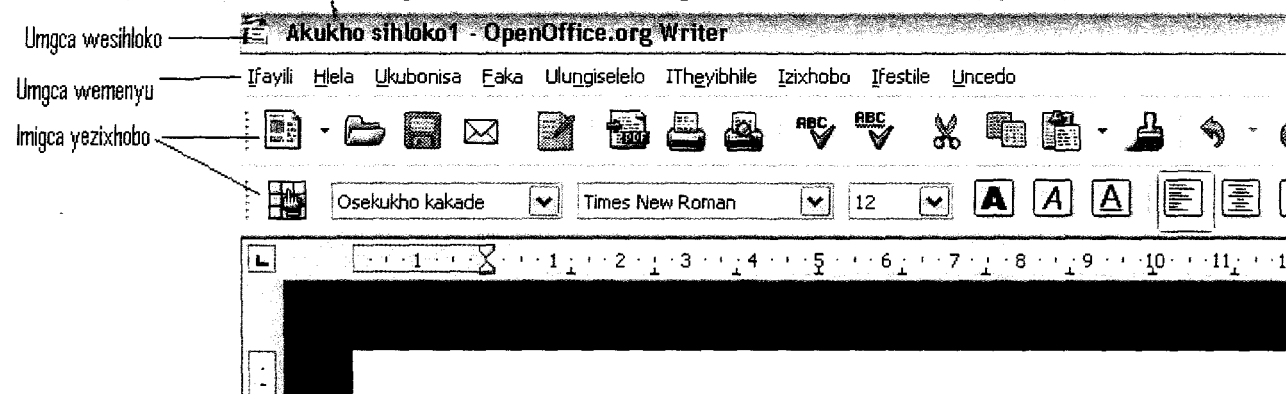
Ngumgca onoludwe loluhlu olwehlayo lwemenyu olusebenza ngokukhetha ze ucofe leyo nto unqwenela ukuyisebenzisa. Umzekelo, xa ucofe ku-Ifayili, imenyu phantsi ko-Ifayili iyavela. Lo mgca wemenyu unamagama anjengala: Ifayili, Hlela, Ukubonisa, Faka, Ulungiselelo, ITheyibhile, Izixhobo, Ifestile kwakunye no-Uncedo.

2.3.3. Umgca wezixhobo

Ngumgca oqulathe izixhobo ezifana nezikere, iimvulophu, ibhrashi, njalo njalo. Le mifanekiso yezi zixhobo yindlela emfutshane (shortcut) yokwenza imisebenzi efana nokugcina, ukuvula, ukuncamathisela, ukusika, ukukopa, ukushicilela, ukuyekisa oko besekwenziwe, njalo njalo.

2.3.4. Umgca wemisebenzi

Ngumgca osemazantsi esikrini apho ixwebhu okanye amaxwebhu asetyenziswayo abekwa khona xa ecuthiweyo. KuWindows lo mgca wemisebenzi uneqhosha elibhalwe Start (Qalisa).



Umfanekiso 5: Imigca yefestile

2.4. Ukuchwetheza umbhalo

Kwixwebhu elitsha lokubhala bhala iCV yakho, umzekelo weCV uza kuboniswa ebhodini.

2.5. Ukugcina uxwebhu

Yiya ku-**Ifayili** → **Gcina Njenge**-. Kwifestile eza kuthi ivele vula indawo (umz: *My Documents*, *uMy Computer*, *iRemovable Disk*) apho ufuna ukugcina khona uxwebhu lwakho. Oku kwenziwa ngokuthi ucofe itolo elijonge ezantsi elikumgca omnye negama elithi “**Gcina kwi**”. Bhala igama loxwebhu kwisithuba esivelileyo ecaleni ko-Igama uze ucofe u-Gcina.

Qaphela: xa uhlela uxwebhu kubalulekile ukuwugcina umsebenzi wakho rhoqo ukwenzela ukuba ungalahleki.

Ukuvala uxwebhu

Ukuvala uxwebhu cofa ku-X (iqhosha lokuvala) phezulu kwikona yasekunene yoxwebhu.

2.6. Ukuhlela uxwebhu esele lukho

KuLinux

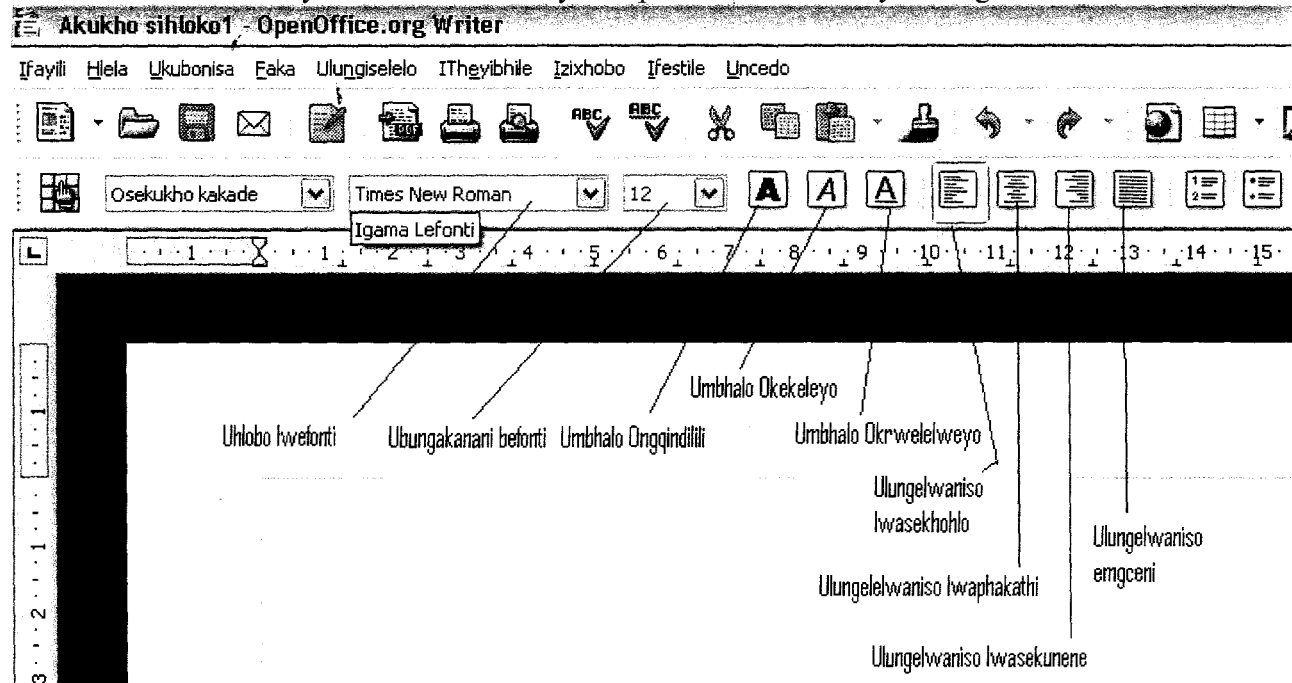
Ukuvula uxwebhu elisele likhona yiya ku-Iinkqubo zekhompyutha → i-Ofisi → OpenOffice.org Word Processor uze uye ku-Ifayili → Vula → Sol uze ukhethe uxwebhu ofuna ukuluvula uze ucofe u-Vula.

KuWindows

Ukuvul uxwebhu elisele likhona, yiya ku-start → All Programs → OpenOffice.org 3.0 → OpenOffice.org Writer uze kweli xwebhu lingenanto ucofe ku-IFayili → Vula → *My Documents*

Qaphela: Ngamanye amaxesha ungaligcina uxwebhu lakho kumcinga osisigcina-nkcukacha (*iRemovable Disk*) endaweni yokusebenzisa ifolda engu*My Documents*. Loo nto ithetha ukuba kuza kufuneka ukhethe umcinga lowo uze uvule uxwebhu lakho kuwo. Ukwenza oko ulandela imiyalelo efanayo naleyo icaciswe ngasentla ntonje endaweni ka*My Documents* uvula u*Removable Disk*

Lo mfanekiso ulandelayo ubonakalisa ezinye iimpawu ezibalulekileyo kumgca wezixhobo:



2.6.1. Uhlelo loxwebhu (Sika, Kopa, Ncamathisela).

- UkuSika nokuNcamathisela

Uqala ugqamise umbhalo uze ucofe uphawu lokuSika ✂ kwimenyu yezixhobo. Umbhalo uyasuka kwindawo obukuyo. Cofa kwindawo ofuna ukuwubeka kuyo uze ucofe kuphawu lokuNcamathisela 📄 kuluhlu lwezixhobo.

OKANYE

Ugqamisa umbhalo, uze ucofe kwicala lasekunene lwempuku. Uluhlu lwemenyu eyehlayo luza kuvela, cofa kuSika. Umbhalo uza kucimeka. Cofa apho ufuna ukuncamathisela khona umbhalo, emva koko ucofe ekunene kwimpuku uze ucofe uNcamathisela kwimenyu yoluhlu olwehlayo.

o UkuKopa nokuNcamathisela

Uqala ugqamise umbhalo uze ucofe uphawu lokuKopa kungca wezixhobo. Beka isidanyazi apho ufuna ukubeka khona umbhalo uze emva koko ucofe uphawu lokuNcamathisela kungca wezixhobo.

OKANYE

Ugqamisa amagama, wandule ukucofa ekunene kwimpuku. Kuya kuvela uluhlu lwamagama, cofa kuKopa. Cofa apho ufuna ukuncamathisela khona amagama, wandule ukucofa ekunene, ze ucofe uNcamathisela kuluhlu lwamagama.

Qwalasela: Xa ugqamisa umbhalo ucofa ecaleni kombhalo ofuna ukuwugqamisa uze urhuqe isalathisi sempuku phezu kombhalo lowo.

- Ukucima umbhalo
Ingenziwa ngeendlela ezimbini:
 1. Backspace (Buy'umva) - icima umbhalo ongasekhohlo kwisidanyazi.
 2. Delete (Cima) - icima umbhalo ongasekunene kwisidanyazi.
- Ukufaka iimbumbulu namanani
Khetha umbhalo, cofa ku-Ulungiselelo → Iimbumbulu Nokufaka Iinombolo, uze ukhethe uhlobo lwembumbulu okanye lwamanani ofuna ukulusebenzisa kuluhlu oluvelileyo uze ucofe u- (Kulungile).
- Ukufakela imida kuxwebhu
Xa ufuna ukufaka imida ephepheni, cofa ku-Ulungiselelo → Ikhasi → Imida. Khetha uhlobo olufunayo lwemida uze uye kwindawo ebhalwe Kuchazwa ngumsebenzisi uze ucofe kumacala omane ngaphakathi kuloo bhokisi emva koko ucofe u-Kulungile.
- Ukufaka inani lephepha kuxwebhu
Ukufaka amanani ephepha kuxwebhu ucofa ku- Faka → Umbhalo ongentla kwekhasi → Osekukho kakade, emva kokucofa ku-Osekukho kakade uphinda ucofe ku-Faka → Imimandla → Inombolo Yekhasi

3. ISPREADSHEET NGOKUSEBENZISA U-OPENOFFICE.ORG CALC

Yintoni iSpreadsheet?

Is spreadsheet yinkqubo eveliswe ukusebenza ngamanani (loo nto ithetha ukubalwa kwamanani). Iqulethe iibhokisana ezaziwa ngokuba ziiseli, ezi seli zona zihlenga-hlengiswe zayimigca eyehlayo nexwesileyo.

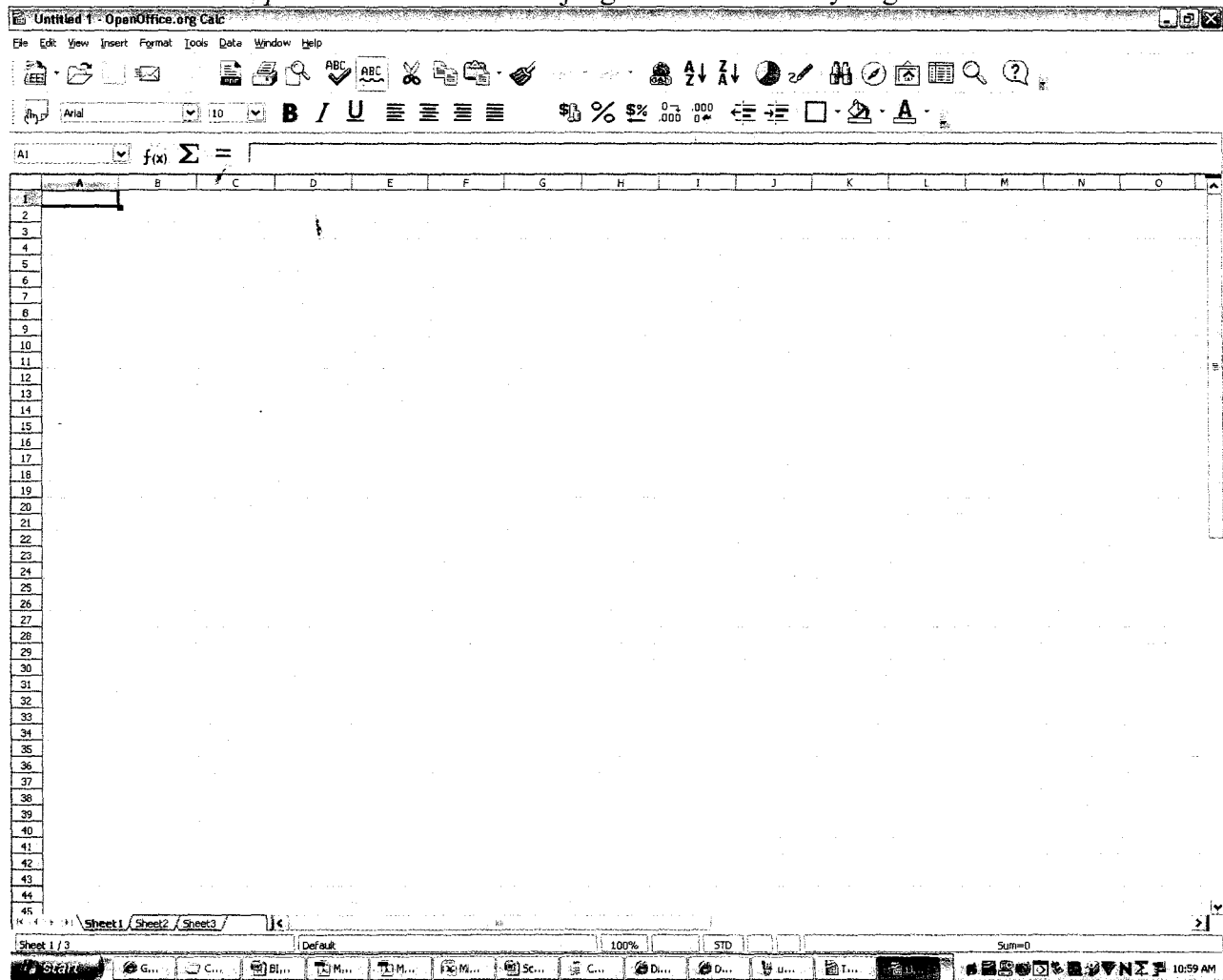
Luvulwa njani uxwebhu lwespreadsheet kuLinux?

Yiya ku-linkqubo zekhompuyutha → i-Ofisi → OpenOffice.org Spreadsheet.

Luvulwa njani uxwebhu lwespreadsheet kuWindows?

Yiya ku Start → All Programs → OpenOffice.org 3.0 → OpenOffice.org Calc

Ixwebhu elitsha lwespreadsheet liza kuvela njengeli libonakalisiweyo ngezantsi:



Izintlu ezixwesayo: zisuka ekhohlo ukuya ekunene/zixwesile yaye zibonakala ngamanani.

Izintlu ezihlayo: zisuka ngasentla ukuya ngasezantsi/ziyehla yaye zibonakala ngamagama oonobumba.

Iseli esetyenziswayo: iseli apho kufakwa khona iinkcukacha yaye ibonakala ngokugqama.

Ukufaka nokuHlenga-hlengisa Iinkcukacha

Iinkcukacha ezingamanani kwakunye nezingumbhalo zingafakwa. Ukufaka iinkcukacha vela ucofe kwiseli ofuna ukufaka kuyo iinkcukacha uze uqale ukuchwetheza. Xa ugqibile ukufaka

iinkcukacha, cofa u-**Enter** ukuya kwiseli engezantsi okanye ucofe iqhosha u-Tab ukuya kwiseli esekunene. Ungasebenzisa namaqhosha anamatolo esichwethezi ukuhla unyuka kwiiseli (i.e. xa usiya kwiseli esekunene/ esekhohlo/ engentla/ engezantsi)

Qaphela: Inxalenye yombhalo kungenzeka ukuba ungabonakali ngokoke kufanele ukuba imigca eyehlayo (*columns*) yandiswe. Ukwandisa imigca eyehlayo latha ngesikhombisi semawusi phakathi koonobumba abangasentla, itolo elinamacala amane lizakuvela. Cofa ze utsale utolo ukwenzela ukwandisa umgc owehlayo ude ufikelele kubungakanani obufanelekileyo.

Kuxwebhu olutsha bhala esi spreadsheet silandelayo ngokufaka ezi nkcukacha zibhalwe apha ngezantsi

	A	B	C	D	E	F	G	H
1	Name Surname	Test1	Test2	Test3	Total	Average		
2	Tom Sandile	47	46	89	182	60.67		
3	Mhlekezi Andile	23	23	99	145	48.33		
4	Tevisi Siphokazi	32	33	34	99	33		
5	Mzomhle Thomas	86	89	29	204	68		
6	Belem Thando	56	65	23	144	48		
7	Mdodana Thulani	67	23	34	124	41.33		
8	Tokwe Vuyokazi	23	54	45	122	40.67		
9	Mliri Khayaletu	23	54	34	111	37		
10	Zathu Khumbulani	34	87	87	208	69.33		
11	Phela Lelethu	56	76	67	199	66.33		
12	Vani Siyabulela	97	98	45	240	80		
13	Dyantvisi Siyabonga	45	76	76	197	65.67		
14	Mgayi Mthetho	86	78	86	250	83.33		
15	Lamani Simphiwe	67	87	98	252	84		
16								
17								
18								

Ukukhetha iiseli kwispreadsheet sakho

- Cofa kwiseli yokuqala kwezo ufuna ukuzikhetha.
- Cinezela iqhosha lemawusi elisekhohlo uze urhuqe isalathi ukuya kwiseli yokugqibela kwezo ofuna ukuzikhetha,

OKANYE

- Cinezela iqhosha u**Shift** uze usebenzise amatolo esichwethezi ukuya kwiseli yokugqibela kwezo ofuna ukuzikhetha.

Imigca exwesileyo neyehlayo

Ukukhetha imigca eyehlayo

- Ukukhetha omnye
 - Cofa kunobumbo womgca owehlayo

- Ukukhetha imigca eyehlayo
 - Cofa kunobumba okumgca wokuqala owehlayo welo qela lemigca eyehlayo.
 - Cinezela iqhosha u**Shift** uze ucofe kunobumba womgca owehlayo wokugqibela kuleyo ufuna ukuyikhetha.

OKANYE

- Cofa kunobumba okumgca wokuqala owehlayo welo qela lemigca eyehlayo.
- Cinezela iqhosha u**Shift** uze usebenzise amatolo esichwethezi ukuya kumgca wokugqibela owehlayo waleyo ofuna ukuyikhetha

Ukukhetha imigca exwesayo

- Ukukhetha omnye
 - Cofa kwinombolo yomgca oxwesayo
- Ukukhetha imigca exwesayo
 - Cofa kwinombolo ekumgca wokuqala oxwesayo welo qela lemigca ixwesayo.
 - Cinezela iqhosha u**Shift** uze ucofe kwinombolo yomgca wokugqibela oxwesayo kuleyo ufuna ukuyikhetha

OKANYE

- Cofa kunobumba okumgca wokuqala owehlayo welo qela lemigca eyehlayo.
- Cinezela iqhosha u**Shift** uze usebenzise amatolo esichwethezi ukuya kumgca wokugqibela owehlayo waleyo ofuna ukuyikhetha.

Ukufaka imigca exwesayo neyehlayo

- Ukuba kukho uluhlu lwabafundi kwixwebhu les*spreadsheet*, njengokuba kubonakalisiwe ngezantsi, esinqwenela ukuhlela-hlela iinkcukacha zabo, apha ngezantsi ikhona imiyalelo yokwenza oko.

Test Marks on OpenOffice.xls - OpenOffice.org Calc

File Edit View Insert Format Tools Data Window Help

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	A	B	C	D	E	F	G	H
1	Name Surname	Test1	Test2	Test3	Total	Average		
2	Tom Sandile	47	46	89	182	60.67		
3	Mhlekezzi Andile	23	23	99	145	48.33		
4	Teyisi Siphokazi	32	33	34	99	33		
5	Mzomhle Thomas	86	89	29	204	68		
6	Belem Thando	56	65	23	144	48		
7	Mdodana Thulani	67	23	34	124	41.33		
8	Tokwe Yuyokazi	23	54	45	122	40.67		
9	Mlimi Khayaletu	23	54	34	111	37		
10	Zathu Khumbulani	34	87	87	208	69.33		
11	Phela Lelethu	56	76	67	199	66.33		
12	Yani Siyabulela	97	98	45	240	80		
13	Dyantvisi Siyabonga	45	76	76	197	65.67		
14	Mgavi Mthetho	86	78	86	250	83.33		
15	Lamani Simphiwe	67	87	98	252	84		
16								
17								
18								

- Ukufaka umgca oxwesayo
 - Ukuba ufuna ukufaka umgca oxwesayo emva komfundi wesi-7 (i.e. Mdodana Thulani).
 - Cofa kumgca oxwesayo ongowe-8
 - Kumgca wakho wemenyu, iya ku-**Faka** → **Imigca Exwesileyo**, emva koko umgca oxwesayo (we-8) omtsha uza kufakwa.
- Ukufaka imigca exwesayo
 - Ukuba ufuna ukufaka imigca exwesayo emi-3 emva komfundi wesi-7 (i.e. Mdodana Thulani).
 - Khetha imigca exwesayo ukusuka kowe-8 ukuya kowe-10
 - Iya ku-**Faka** → **Imigca Exwesayo**, imigca exwesayo emithathu izakufakwa emva kowe-7.
- Ukufaka umgca owehlayo
 - Ukuba ufuna ukufaka umgca owehlayo emva konobumba u-C.
 - Cofa kumgca owehlayo u-D.
 - Kumgca wakho we**Menyu**, iya ku-**Faka** → **Imigca Eyehlayo**, emva koko umgca owehlayo (u-D) omtsha uza kufakwa.
- Ukufaka imigca eyehlayo
 - Ukuba ufuna ukufaka imigca eyehlayo emi-3 emva konobumba u-C.
 - Khetha imigca eyehlayo u-D, u-E kwakunye no-F.
 - Iya ku-**Faka** → **Imigca Eyehlayo**, imigca eyehlayo emi-3 iza kufakwa emva komgca owehlayo u-C.

- Ukucima imigca exwesayo neyehlayo
 - Khetha imigca exwesayo okanye eyehlayo ofuna ukuyicima.
 - Iya to **Hlela** → **Cima iiseli** [Kuza kuvela ibhokisana yemiyalelo yokucima iiseli]
 - Cofa kwiqhosha elibhalwe **Delete entire row(s)** or **Delete entire column(s)**.
 - Uze ucofe u-OK

Ukumisa ngokwendle iinkcukacha zakho

Iinkcukacha zingamiselwa ngendlela ngokuqala kwinani eliphezulu/elisezantsi okanye ngokumisela onobumba ngokusuka kunobumba wokuqala ukuya kowokugqibela/ ukuasuka kowokugqibela ukuya kowokuqala. Ukuba unqwenela ukumisela ezi nkcukacha zilandelayo (ezibonakalisiweyo ngezantsi) ngokommiselo osuka kunobumba wokuqala ukuya kowokugqibela, landela le miyalelo ilandelayo:

Test Marks on OpenOffice.xls - OpenOffice.org Calc

File Edit View Insert Format Tools Data Window Help

Arial 10 B I U

A27 $f(x) \Sigma =$

	A	B	C	D	E	F	G	H
1	Name Surname	Test1	Test2	Test3	Total	Average		
2	Tom Sandile	47	46	89	182	60.67		
3	Mhlekezzi Andile	23	23	99	145	48.33		
4	Teyisi Siphokazi	32	33	34	99	33		
5	Mzomhle Thomas	86	89	29	204	68		
6	Belem Thando	56	65	23	144	48		
7	Mdodana Thulani	67	23	34	124	41.33		
8	Tokwe Vuyokazi	23	54	45	122	40.67		
9	Mlimi Khayaletu	23	54	34	111	37		
10	Zathu Khumbulani	34	87	87	208	69.33		
11	Phela Lelethu	56	76	67	199	66.33		
12	Vani Siyabulela	97	98	45	240	80		
13	Dyantvisi Siyabonga	45	76	76	197	65.67		
14	Mgayi Mthetho	86	78	86	250	83.33		
15	Lamani Simphiwe	67	87	98	252	84		
16								
17								
18								
19								
20								

- Gqamisa uludwe lweeseli ofuna ukuzimisela ngendlela.
- Iya ku-**Iinkcukacha** → **Misela ngokwendlela** (Kumgca we**Menu**).
- Misela indlela oyifunayo ngokusebenzisa ibhokisana yemiyalelo i-**Sort Criteria**.
- Cofa u-OK.

Test Marks on OpenOffice.xls - OpenOffice.org Calc

File Edit View Insert Format Tools Data Window Help

Arial 10 B I U

A2:G16 f(x) Σ = Lamani Simphiwe

	A	B	C	D	E	F
1	Name Surname	Test1	Test2	Test3	Total	Average
2	Lamani Simphiwe	67	67	98	252	84
3	Mgavi Mthetho	86	78	66	250	83.33
4	Vani Siyabulela	97	98	45	240	80
5	Zathu Khumbulani	34	87	87	208	69.33
6	Mzomhle Thomas	86	89	29	204	68
7	Phela Lelethu	56	76	67	199	66.33
8	Dyantvisi Siyabonga	45	76	76	197	65.67
9	Tom Sandile	47	46	89	182	60.67
10	Mhlekaazi Andile	23	23	99	145	48.33
11	Belem Thando	56	65	23	144	48
12	Mdodana Thulani	67	23	34	124	41.33
13	Tokwe Vuyokazi	23	54	45	122	40.67
14	Mliri Khayaletu	23	54	34	111	37
15	Tevisi Siphokazi	32	33	34	99	33
16						
17						
18						
19						
20						
21						
22						
23						

Sort

Sort Criteria Options

Sort by: Column A Ascending Descending

Then by: - undefined - Ascending Descending

Then by: - undefined - Ascending Descending

OK Cancel Help Reset

Qaphela: Phambi kokuba umisele ngokwendlela iinkcukacha zakho, ugqamisa iinkcukacha nxaanye neezintloko zazo. Ukuba akuzigqamisanga zonke iinkcukacha ezo ufuna ukuzimisel angendlela, umzekelo: kulo mboniso ungentla ukuba sinokugqamisa umgca owehlayo kuphela – loo nto ithetha ukuba siza kumisela amagama odwa engahambelaniyo namanqaku awo.

Emva kokuba ucofe u-OK, iinkcukacha zako zonke zizakumiselwa ngokwendlela njengoko kubonakalisiwe ngezantsi:

Test Marks on OpenOffice.xls - OpenOffice.org Calc

File Edit View Insert Format Tools Data Window Help

Arial 10 B I U

H34 f(x) Σ =

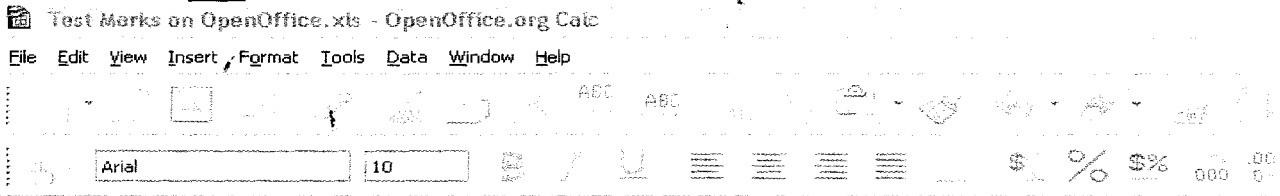
	A	B	C	D	E	F	G	H	I
1	Name Surname	Test1	Test2	Test3	Total	Average			
2	Belem Thando	56	65	23	144	48			
3	Dyantvisi Siyabonga	45	76	76	197	65.67			
4	Lamani Simphiwe	67	87	98	252	84			
5	Mdodana Thulani	67	23	34	124	41.33			
6	Mgavi Mthetho	86	78	66	250	83.33			
7	Mhlekaazi Andile	23	23	99	145	48.33			
8	Mliri Khayaletu	23	54	34	111	37			
9	Mzomhle Thomas	86	89	29	204	68			
10	Phela Lelethu	56	76	67	199	66.33			
11	Tevisi Siphokazi	32	33	34	99	33			
12	Tokwe Vuyokazi	23	54	45	122	40.67			
13	Tom Sandile	47	46	89	182	60.67			
14	Vani Siyabulela	97	98	45	240	80			
15	Zathu Khumbulani	34	87	87	208	69.33			
16									
17									
18									
19									
20									
21									
22									
23									

Ukusebenzisa icebo lokubala (*Function*)

Kwesi siqendu siza kuthetha ngendlela yokubala **Isiphumo Sobalo (SUM)** ne-**Avareji (AVERAGE)**. Isiphumo sobalo ne-Avareji indlela ezibalwa ngayo ithande ukuyelelana, umfundi kufanele ukuba akwazi ukuchonga iiseli azakwenza kuzo izibalo. Funda le miyalelo ilandelayo uze uyisebenzise kwinkcukacha zakho:

● **Isiphumo Sobalo (SUM)**

- Khetha iseli apho ufuna ukufaka iziphumo zakho zoko ukubalayo.
- Cofa izihlandlo zibembini kunobumba (u-f(x)) okwi **Function Bar**, emva koko uMvumisi Wecebo (**Function Wizard**) uza kuvela.
- Kuluhlu lwamacebo khetha ngokucofa imawusi kabini u**SUM**, uMvumisi Wecebo uza kuvela ngokwendlela abonakaliswe ngayo apha ngezantsi.
- Kwezozithuba zinikiweyo (ecaleni kwenani ngalinye i.e. **number 1: number 2 ...**), faka iinombolo zeeseli (umz: B9, C9, D9) ofuna ukubala iziphumo zawo, ze ucofe u-**OK**.



E9 f(x) Σ = =SUM(B9;C9;D9)

	A	B	C	D	E	F	G	H
1	Name Surname	Test1	Test2	Test3	Total	Average		
2	Belem Thando	56	65	23	144	48		
3	Dyantisi Siyabonga	45	76	76	197	65.67		
4	Lamani Simphiwe	67	87	98	252			
5	Mdodana Thulani	67	23	34	124			
6	Mqayi Mthetho	86	78	86	250			
7	Mhlekezi Andile	23	23	99	145			
8	Mlimi Khayaletu	23	54	34	111			
9	Mzomhle Thomas	86	89	29				
10	Phela Lelethu	56	76	67				
11	Tevisi Siphokazi	32	33	34				
12	Tokwe Vuyokazi	23	54	45				
13	Tom Sandile	47	46	89				
14	Vani Siyabulela	97	98	45				
15	Zathu Khumbulani	34	87	87				

Function Wizard

Functions Structure

Category: Mathematical

Function: SUM

Function result: 204

Returns the sum of all arguments.

number 3 (optional)

Number 1, number 2, ... are 1 to 30 arguments whose total is to be calculated.

number 1: B9

number 2: C9

number 3: D9

number 4:

Formula: =SUM(B9;C9;D9)

Result: 204

Array Help Cancel << Back Next >> OK

- **I-Averaji**

- Khetha iseli apho ufuna ukufaka iziphumo ze-avareji.
- Cofa izihlandlo zibembini kunobumba (u-f(x)) okwi **Function Bar**, emva koko u**Mvumisi Wecebo (Function Wizard)** uza kuvela.
- Kuluhlu lwamacebo khetha ngokucofa imawusi kabini u-**AVERAGE**. u**Mvumisi Wecebo** uza kuvela.
- Kwezozithuba zinikiweyo (ecaleni kwenani ngalinye i.e. **number 1: number 2 ...**), faka iinombolo zeeseli (umz: B9, C9, D9) ofuna ukubala iziphumo zawo, ze ucofe u-**OK**.

Qaphela: Masithi unoluhlu olude lwabafundi kwaye awufuni kubala isiphumo sobalo/i-avareji yabo ngamnye ngamnye. Ukuze ukwazi ukuyenza lento, emva kokuba ubale isiphumo sobalo/i-avareji yabafundi ababini bokuqala, cofa kwisiphumo sokugqibela kwezi zimbini uzibalileyo. Iseli iza kugqama. Emazantsi ekunene kwikona yeseli kukho ibhokisana encinci. Xa usolatha kula bhokisana, isalathisi semawusi siza kutshintsha size sifane nophawu lokudibanisa (+ sign). Cofa ze urhuqe imawusi kumgca owehlayo uyokutsho kumgca wokugqibela weziphumo zobalo/ ze-avareji. Ngokwenza oku uza kuba kanti ubala iziphumo zobalo/ i-avareji yabafundi bonke bephela.

4. U-OPENOFFICE.ORG IMPRESS

Yintoni u-OpenOffice.org Impress?

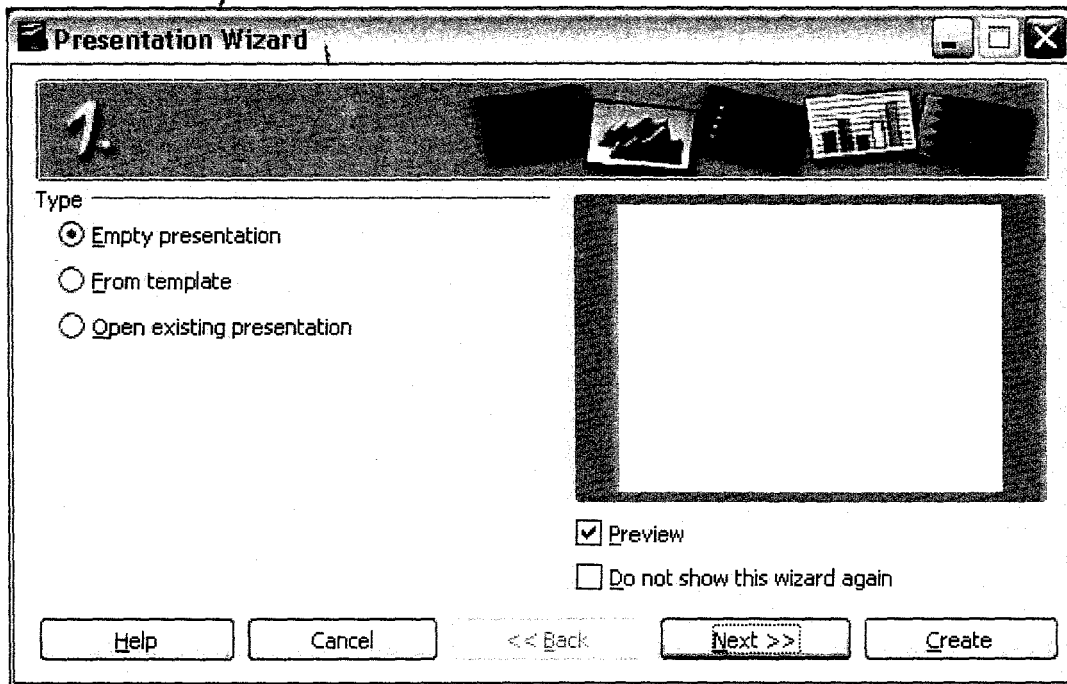
Yinkqubo yesiboniso-ntetho eyelelene noMicrosoft PowerPoint. Inengqokelela yezilayidi ezinokusetyenziswa ukwenza intetho xa ufundisa, xa umfundi enikezela ingxelo yomsebenzi, ezoshishino, njalo-njalo.

Ukuvula u-OpenOffice.org Impress

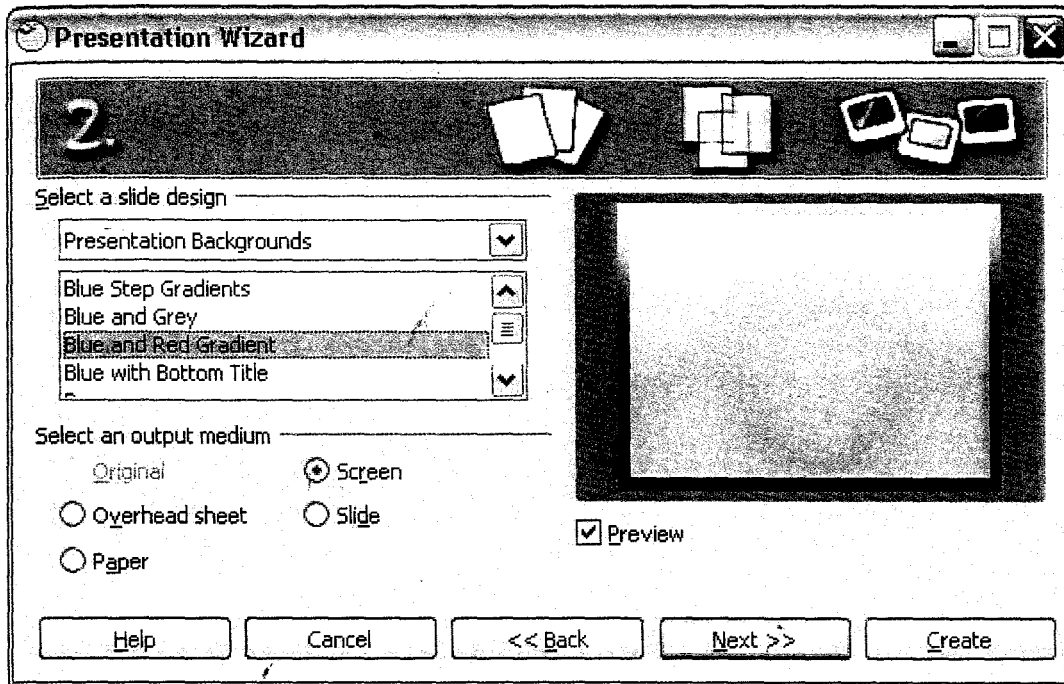
Cofa iqhosha uStart → u-All Programs → u-OpenOffice.org 2.0 → u-OpenOffice.org 3.0 → OpenOffice.org Impress. Umvumisi wesiboniso-ntetho (kule festile ibonakalisiweyo ngezantsi) uza kuvela ekubangela ukuba ukwazi ukuqulunqa isiboniso-ntetho sakho.

1. Kuza kubonakaliswa izinto onokukhetha kuzo zibe-3, emva kokuba ukhethile cofa u-Next:

- Ukuba unqwenela ukwenza uxwebhu olutsha, khetha u-*Empty presentation*.
- Ukuba ufuna ukuvula umfuziselo, khetha u-*From template*.
- Ukuba unqwenela ukuvula uxwebhu oluselelakhona, khetha u-*Open existing presentation*.

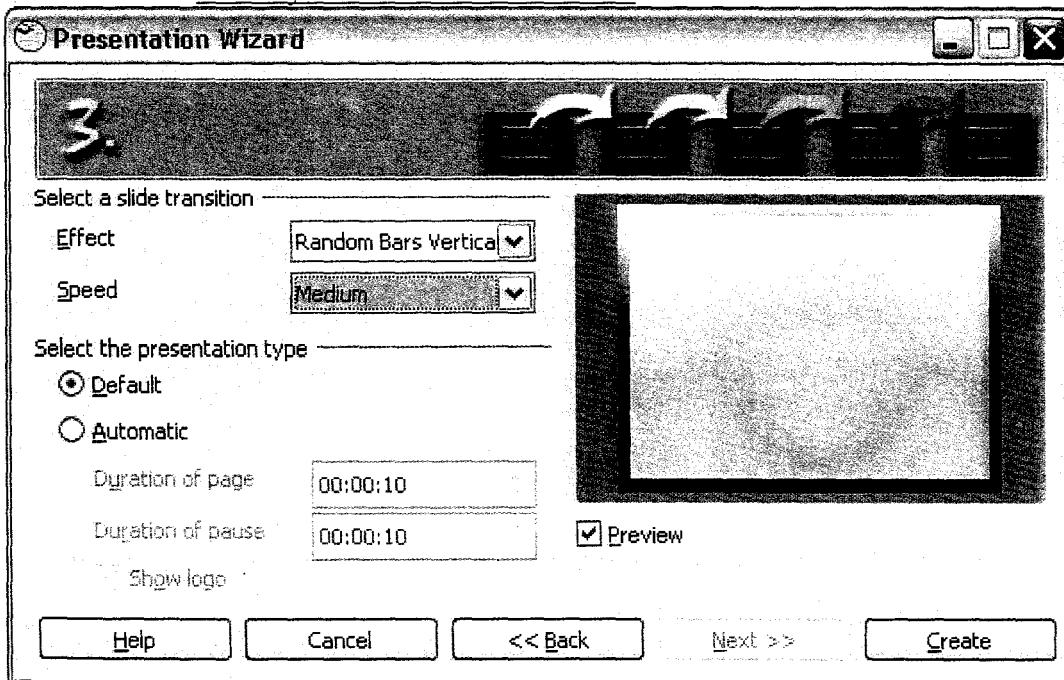


2. Cofa uyilo lwesilayidi, uze ucofe u-Next.



3. Khetha ukuguqulwa kwesilayidi kwakunye nohlobo lwesiboniso-ntetho

- Ukuguqulwa kwesilayidi kubhekisele kwindlela oyisebenzisayo ukumisela izilayidi zakho ukwenzela ukuba zihle-zinyuka, zivele-zinyamalala, njalo njalo, xa usenza intetho usebenzisa isiboniso-ntetho. Ukwenza oko ungamisela ezi zinto zilandelayo:
 - Khetha indlela esizakuvela kuvela ngoyo (**Effect**)
 - Misela iSantya (**Speed**)
- Uhlobo lwesiboniso-ntetho lubhekiselele kwixesha othi ulimisele ukunzela isilayidi ngasinye okanye ukhethe ukusebenzisa imimiselo esele ikhona.
 - **Uselekho (Default)** – ukuba ufuna ukucofa ukwenzela ukuba uye kwisilayidi esilandelayo.
 - **Okuzenzelayo (Automatic)** – xa ufuna ukuba isilayidi sivele sizidlulele ukuya kwezinye emva kwexesha elithile.



Emva komyalelo wesi-3 cofde ku-Create. Emva kokuba ucofe kuCreate kuvela ifestile enezilayidi efana nale ingezantsi.

Qaphela: Isilayidi sokuqala sivela singenanto. Ungasenza isilayidi sakho sibe netayitile nombhalo ngokukhetha kuluhlu lweezimo (*Layouts*) ezifumaneka ngasekunene kwesilayidi. Isilayidi ngasinye sinengcaciso, echaza banzi malunga neezimo. Ukukhetha isimo sesilayidi, cofa kabini kuleyo uyifunayo. Ukufaka isilayidi esitsha cofa kumfanekiso obhalwe *Slide* okungca wezixhobo. Kumantla efestile uya kuqaphela ukuba kukho imigca yezixhobo efana nqwa nale isetyenziswa kwiinkqubo zokubhala kuxwebhu. Ezi zixhobo zikunceda ukuba uhlelwe-hlelwe yaye uhlele umbhalo nezinye izinto kwisilayidi sakho. Izimo ezikwicala elisekunene kwisilayidi ziza kukunceda ekubeni ukhwazi ukuhlelwe-hlelwe umbhalo kwisilayidi. Ukufaka umbhalo kwisilayidi cofa kule miyalelo ebhalwe kwisilayidi eyile “*Click to add title*” kunye no “*Click to add text*”.

Umbhalo ofakwe kwisilayidi ungabonakaliswa ngeendlela ezininzi i.e. ngokwembonakalo yesiqhelo, engumgqabazo, yokubhaliweyo, yamaphetshana okufunda kwikaunye neyesihlela-hleli sesilayidi.

- Imbonakalo yesiqhelo – le mbonakalo ilungiselelwe ukuhlela isilayidi esinye.
- Imbonakalo engumgqabazo – isilayidi sibonakaliswa ngokuthi kuvezwe okubhaliweyo kuso njengezivakalisi kwaye ibalulekile xa ufuna ukuhlela izivakalisi zakho.
- Imbonakalo yokubhaliweyo – ungafakela ezinye izinto ezibalulekile ukwenzela ukuba uzisebenzise kwixesha elizayo. Oku akubonakaliswa xa uveze isiboniso-ntetho kodwa ungakwazi ukukushicilela.
- Imbonakalo yamaphetshana okufunda – ungakwazi ukufunda oko kuqulathwe kwisilayidi sakho siphume sifana nook kushicilelwe ephapheni.
- Imbonakalo yesihlela-hleli sesilayidi – kolu uhlobo izilayidi zibonakaliswa zicuthekile yaye esinye sime ecaleni kwesinye.

Ukubona zonke ezi mbonakalo, kuxwebhu lwakho lwesiboniso-ntetho, cofa kumaqhosha esilayidi abonakalisweyo kulo mfanekiso ungezantsi



5. INTANETHI

Yintoni i-Intanethi?

I-Intanethi yingqokelela yeekhompyutha kwihlabathi jikelele ezithi zinxibelelane ngokuthungelana. Ezi khompyutha ziyaxibelelana yaye zabelane ngeenkukacha. Ukuba ikhompyutha yakho iqhagamshelwe kwi-Intanethi, ingakwazi ukunxibelelana nezinye iikhompyutha kwihlabathi jikelele.

Yintoni enokwenziwa kwi-Intanethi?

I-Intanethi ingasetyenziswa ukwenza ezi zinto zilandelayo:

- Ungakwazi ukufumana iinkukacha.
- Ungaxibelelana nehlabathi jikelele.
- Ungafumana iinkukacha malunga nezifundo zophando.
- Ingasetyenziswa njengesixhobo sokufunda.
- Ingasetyenziswa nakwezinye izinto zokonwaba.
- Ingasetyenziswa kwezoshishino.

I-World Wide Web (I-WWW)

Kufanele siqonde ukuba kukho umahluko phakathi kwe-Intanethi kwakunye ne-World Wide Web eyaziwa ngokuba yi-WWW.


I-World Wide Web yingqokelela yezigidi ngezigidi zamakhasi eenkukacha, okanye izigidi ngezigidi zamaxwebhu aeenkukacha.

Amanye amagama asetyenziswa kwi-WWW ngala alandelayo:

I-HTTP (i-HyperText Transfer Protocol): Lulwimi olusetyenziswa ziikhompyutha ukwenzela ukuba zikwazi ukwabelana ngeenkukacha kwi-WWW.

I-URL (I-Uniform Resource Locator): Le yidilesi yokufikelela kumaxwebhu (iwebhusayithi) akwi-Intanethi. U-URL ligama "ledilesi" elisetyenziswayo kwitekhnoloji.

Isalathisi: Luqhagamshelo olusexwebhini oluqhagamshela iinkukacha ezisixwebhini olo, okanye ezikwelunye uxwebhu. Maxa wambi ezi zalathisi zibonakaliswa ngamagama agqanyisiweyo okanye imifanekiso.

- Ligama elibhalwe luzuba laze lakrwelelwe umgca (ingayeminye imibala).
- Ukuba uhambisa isikhombisi sempuku ngaphezulu kwesalathisi, isikhombisi siyatshintsha sibesisandla, njenges: 
- Imifanekiso nayo iba zizalathisi.
- Ukuba ucofa kwisalathisi loo nto ikuthumela kwelinye ikhasi.

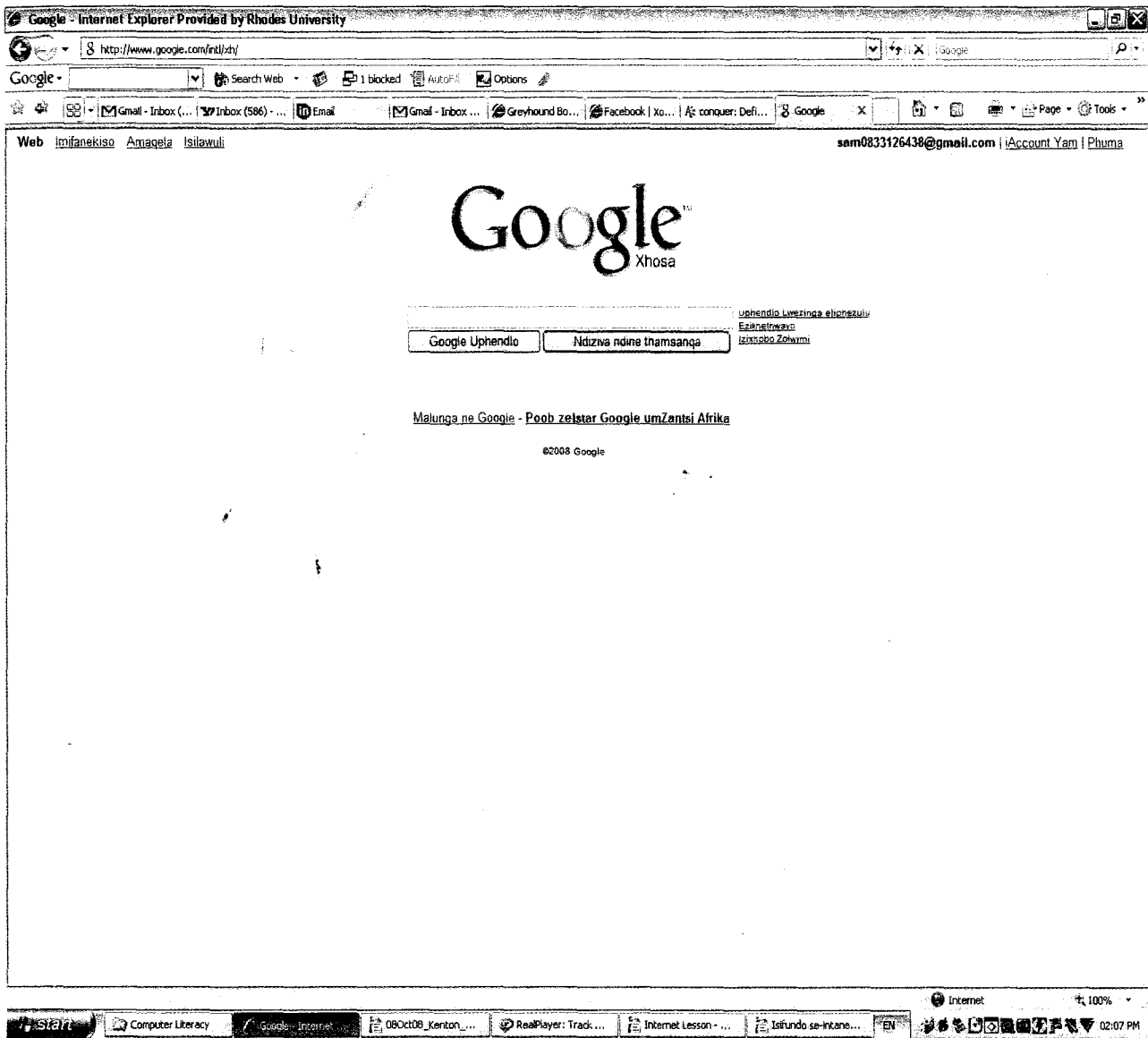
Umnikeli we-Intanethi (I-ISP): Yinkampani enikela ngoqhagamshelo lwe-Intanethi.

Ikhasi lewebhu: Sisixhobo seenkukacha okanye uxwebhu lwe-WWW. Umzekelo, isayithi yewebhu yeYunivesithi iRhodes iyafumaneka kule-URL (okanye kule dilesi) ilandelayo:

<http://www.ru.ac.za>. Le sayithi inamaxwebhu aeenkukacha malunga neYunivesithi iRhodes, ineefoto kwakunye neenkukacha zoqhagamshelwano zaseRhodes. Uxwebhu ngalunye luba likhasi lewebhu elizimeleyo.

Isikhangeli-nkukacha kwiwebhu: Sinceda abasebenzisi ukuba bafumane iinkukacha (okanye ikhasi lewebhu) kwi-WWW. Imizekelo yezikhangeli-nkukacha kwiwebhu iquka uGoogle, uYahoo, u-Ananzi, nezinye. Umsebenzisi angavula isikhangeli-nkukacha kwiwebhu ngokuchwetheza i-URL kumgca wedilesi. UGoogle sesona sikhangeli-nkukacha esiqhele ukusetyenziswa kwiwebhu. Ukuba ufuna ukusivula ungachwetheza le-URL ilandelayo kumgca wedilesi: www.google.com.

Uza kubona ikhasi elifana neli libonakalisiweyo ngezantsi:



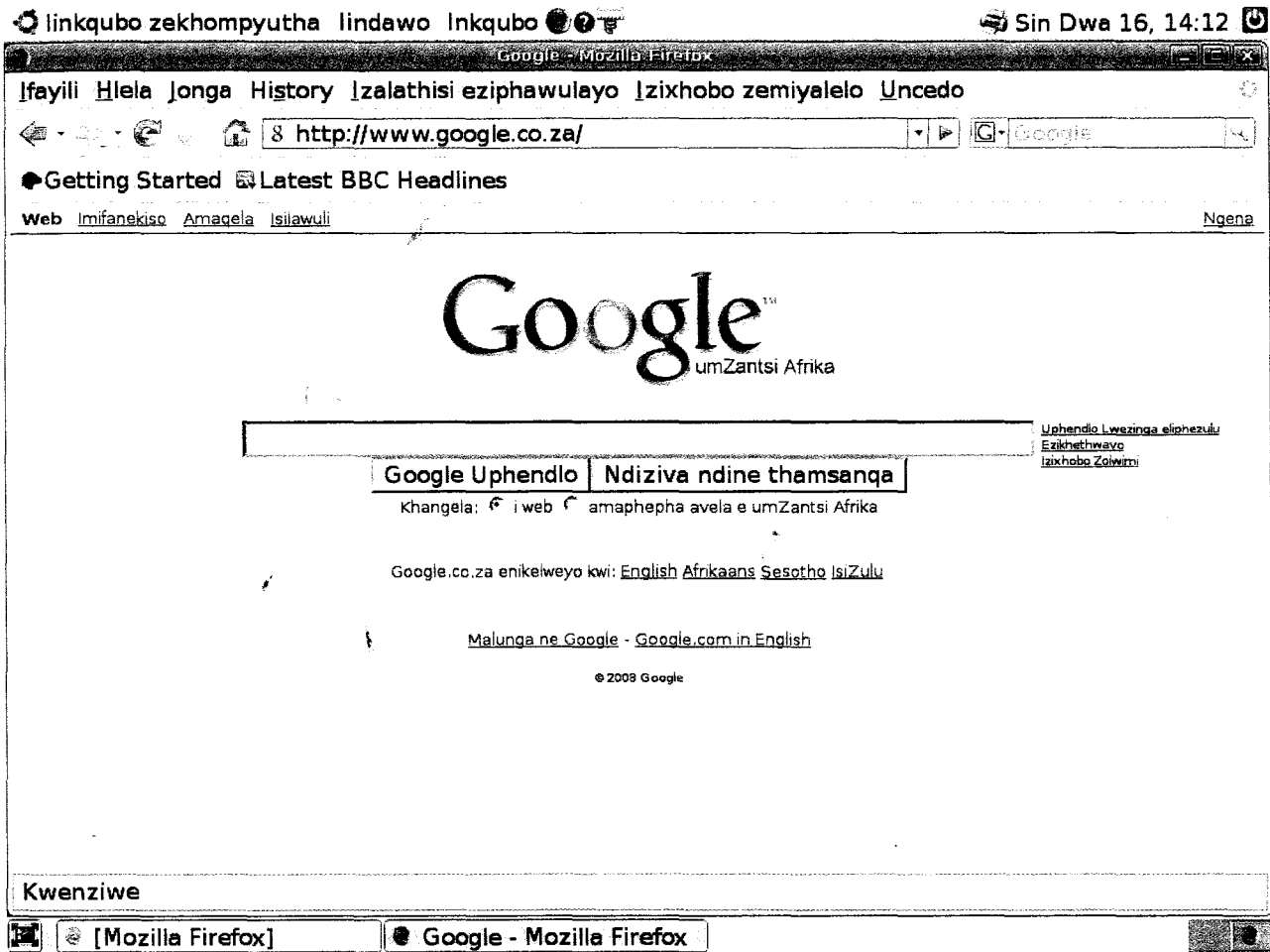
IsiKhangeli-Webhu

IsiKhangeli-Webhu yinkqubo esetyenziselwa ukukhangela kwi-Intanethi nakwi-WWW. Ezona zikhangeli-webhu ezisetyenziswayo yiMicrosoft Internet Explorer noMozilla Firefox. Isikhangeli-webhu sisetyenziselwa ukukhangela ukusuka kwisayithi yewebhu ukuya kwenye.

Lo ngumzekelo kaMicrosoft Internet Explorer:



Nanku umzekelo kaMozilla Firefox:



Ukwenza i-akhawunti ye-imeyile

I-imeyile sisixhobo esisetyenziselwe ukunxibelelana kwiWebhu. Ngumzekelo weleta okanye umyalezo abanokuthi abasebenzisi bekhompyutha bathumelelelane. Isetyenziswa kwi-Intanethi yaye ngesosizathu iyakhawuleza. Umntu angathumela yaye afumane umyalezo ongumbhalo okanye umfanekiso xa esebenzisa i-imeyili. Imizekelo yee-imeyili zezi, u-*yahoomail*, *gmail*, *webmail*, *hotmail*, etc.

Siza kuthi sibonakalisa ukuba yenziwa njani i-akhawunti xa ufuna ukusebenzisa u-*gmail*. Kwisikhangeli sakho sewebhu iya ku-www.gmail.com. Ikhasi elifana neli libonakaliswe ngezantsi liza kuvela:

1. Cofa ku-Sign up for Gmail

Gmail Welcome to Gmail

A Google approach to email.

Gmail is a new kind of webmail, built on the idea that email can be more intuitive, efficient, and useful. And maybe even fun. After all, Gmail has:

- Less spam**
Keep unwanted messages out of your inbox with Google's innovative technology.
- Mobile access**
Read Gmail on your mobile phone by pointing your phone's web browser to <http://gmail.com/app>. [Learn more](#)
- Lots of space**
Over 7233 450945 megabytes (and counting) of free storage so you'll never need to delete another message.

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2. Faka zonke ezi nkcukacha zifunekayo uzokwazi ukuzenzela i-akhawunti uze emva koko ucofe "I accept. Create my Account".

Gmail Create a Google Account - Gmail

Change Language: English

Create an Account

Your Google Account gives you access to Gmail and other Google services. If you already have a Google Account, you can [sign in here](#).

Get started with Gmail

First name: _____
Last name: _____
Desired Login Name: _____ @gmail.com
Examples: J.Smith, John Smith

Choose a password: _____ Password strength: _____
Minimum of 8 characters in length.

Re-enter password: _____

Remember me on this computer

Creating a Google Account will enable Web History. Web History is a feature that will provide you with a more personalized experience on Google that includes more relevant search results and recommendations. [Learn More](#)

Enable Web History

Security Question: Choose a question _____

Emva koko uza kuthunyelwa kwikhasi lokugena (*login page*), njengokuba kubonisiwe kumyalelo wokuqala ongasentla, uze ungene ngokusebenzisa iinkcukacha obubhalise ngazo.

OKUSETYENZISIWEYO KULE KHOSI

1. Computer Literacy Short Course 2007
2. Eyethu Schools Project
3. Google.com
4. ICDL
5. Siyakhula Project
6. Proprietary Software
http://www.absoluteastronomy.com/topics/Proprietary_software
(Accessed on the 27 Jan 2009 [Online])
7. IsiXhosa Glossary at <http://isixhosa.ru.ac.za> (accessed in 2009)

4.2 Conclusion

The aim of this chapter is to show how equivalence can be found between English and newly coined isiXhosa ICT terminology. Further to this, the working terminology that is presented in this chapter is vitally important in addressing the issue of cognition amongst learners who are learning about computers and who are not mother tongue speakers of English. This chapter also seeks to show that an isiXhosa word can be presented for all words that are found in English. It is a misnomer to assume that there are certain concepts that cannot be conveyed in isiXhosa. The challenge is to create the correct and sufficient terminology in order to facilitate cognition and understanding amongst learners. This chapter presents a hands-on document that can be used in the classroom. In the chapter that follows I seek to show how this terminology was used and received in Eastern Cape classrooms in both rural and urban areas.

CHAPTER 5

DISCUSSION OF FINDINGS

5.1 Introduction

This chapter presents and analyses the findings which were investigated to evaluate the usability of isiXhosa computer terms in different high schools situated in different regions of the Eastern Cape. It initially presents the process of developing technical terminology in African Languages. This involves the discussion of difficulties and challenges encountered when developing ICT terminology in isiXhosa. This terminology was developed by members of the SANTED programme in the African Languages Studies Section at Rhodes University.

This chapter also gives a brief description of the schools where the ICT terminology was implemented. Prior to the implementation, Bilingual Computer Literacy material was developed in order to evaluate the usability of isiXhosa computer terminology. As part of the testing of isiXhosa ICT terminology, I interpret the findings obtained through a number of data collection techniques such as document analysis, participant observation, questionnaires, which were administered, and the interviews which were conducted in this study. These findings are presented and analysed according to different case studies and at the end I give a comparative analysis in order to evaluate some language varieties and other factors that might have emerged. This is done by firstly presenting and analysing findings obtained from Dwesa schools in former Transkei and then discussing the investigation carried out in Grahamstown schools. I then analyse the findings by comparing Dwesa and Grahamstown.

5.2 The development of isiXhosa ICT terminology

5.2.1 Setting the scene of the terminology development

This section entails the discussion of the development of the isiXhosa ICT terminology. It presents the process and individuals that were involved in developing these terms and also explores the strategies involved in this process.

The development of this computer terminology was undertaken within the School of Languages at Rhodes University within the SANTED programme. In the School of languages, this programme is housed by the African Language Studies section. It comprises of individuals from different academic backgrounds. These backgrounds range from

Computer Science, Languages, Education and Communication of which the majority are native isiXhosa speakers. In this initiative I was involved as a member of the ICT unit. These different academic backgrounds played a role in the development of this terminology as they brought diversified expertise.

The starting point for the development was a prototype glossary developed as part of an Honours project in the Computer Science Department at the University of Fort Hare (Kos et al 2006). The list of terms was considerably expanded and translations were revisited extensively. The expansion of these terms took place in 2007 and was carried out by the SANTED team. This team would sit together on a daily basis trying to review the terms that were translated in the previous year. The team would take a couple of hours discussing terms and translations until we reached an agreement. The ICT specialist would lead the discussion by explaining the meaning of terms to the entire team. An experienced terminology developer led the discussion on the possible direct translation of the term. Once everyone understood the meaning of the term in English they would suggest some translation. Sometimes, depending on the term to translate, we would stick to a borrowing. In facilitating the translation we would use dictionaries (these included monolingual, bilingual and trilingual dictionaries). Members of the team with lower levels of computer literacy were asked to double-check the resulting entry to ensure the language used as well as the content was correct.

These meetings where people would sit and translate computer terminology content are called translate@thons. A translate@thon is a mass translation event (also called localisation sprint) where people gather to translate a piece of software. There are two types of translate@thons based on the number of participants. These are small and large events which involve a number of people. A small event would involve at least 5 people and it is called a mini-translate@thon and a large one consists of approximately 40 or more people (Translate.org.za). There were a number of challenges that we encountered. Firstly, our translate@thons would last for the whole day and they proved to be time-consuming. Besides attending the mini-translate@thons, people had to fit individual work into a very busy schedule. The second problem was that some people were still learning about computers, and were therefore the ideal back-translators, but they did not necessarily have the appropriate linguistic training. A third problem seemed to be power dynamics within the group. The person suggesting the translations was, in most cases, of higher rank within SANTED,

compared to the people who were asked to back-translate. Although this never resulted in uncontrollable tensions, it is reasonable to assume that it posed questions regarding the validity and critical value of back-translation.

In order to ensure the quality of the material, we relied on two external sources. First of all, we tried to collaborate with the appropriate structures within the government. We met with representatives of the isiXhosa National Language Body in Bisho and with the isiXhosa National Lexicography Unit at the University of Fort Hare. At a later stage, because of the media coverage of the project, we attracted the attention of the Pan South African Language Board, with whom we met to discuss possible working relations. These collaborations did not have a direct impact on the development or evaluation of the terminology. This was partly due to the constraints of bureaucratic organisations, whose mandate is coordination rather than active production and development of material and terminology.

The second channel of quality assurance was Honours students in the Department of Computer Science and Communication at the University of Fort Hare. A Communication student investigated issues of quality in translation, and worked on the terminology as part of her sample (see Gunzo et al. 2007; Madwe et al. 2007). IsiXhosa speaking students were asked to comment on the terms as the spin-off of their projects. Getting Fort Hare students involved in the project as part of their research proved to be an asset. This expanded the team of contributors/reviewers and brought in different expertise. Being from another institution, these students were completely external to the power dynamics of the SANTED team, and could afford to be more critical.

Discussions from the team generated approximately 50 hours of recordings (see Appendix 1 for an example) and generated 180 terms. Each term was translated, explained and exemplified in isiXhosa. Conscious of the debate around language purism vs integration of borrowings, we decided to include direct translation of the terms whenever possible. The rationale was that, even though users might not use the new terms, it would still be useful for them to have isiXhosa equivalents of the English words in order to grasp their meaning (Sam et al. 2008).

5.2.2 Strategies for isiXhosa ICT terminology development

This section stipulates and explains all the strategies utilised in developing this terminology. It further lists some of the examples of the terms that were developed. It discusses the reasons for choosing whether to create a new or use an existing or borrow a term. These strategies are as follows: borrowed and/or adapted, translated (mostly into an existing word but with a change in meaning or expanded semantic field) and invented (or innovative) terminologies.

(a) Borrowed and/or adapted terminology

These terms do not exist in the target language and the translators are obliged to adapt them from the source language, English in this context. There are slight changes that occur in the structure of the borrowed term. The pronunciation, to a certain extent, might remain the same but there are instances where the term is linguistically reworked and adapted into the target language (specifically isiXhosa) orthography. The term must be prefixed and follow the language rules, i.e. most of the nouns in African languages are formed by consonant + vowel pattern, e.g. computer in isiXhosa is *ikhompyutha*. The following is the list of the borrowed ICT terms:

English ICT terms	IsiXhosa ICT terms
File	<i>Ifayile</i>
Circuit	<i>Isekethi</i>
Chart	<i>Itshati</i>
Email	<i>Imeyile</i>
Internet	<i>I-Intanethi</i>
Web	<i>IWebhu</i>
Slide	<i>Isilayidi</i>
Computer	<i>Ikhkompyutha</i>
Average	<i>I-avareji</i>

Table 1: List of Borrowed Terminology

(b) Translated (mostly into an existing word) terminology

These terms are purely translated into isiXhosa with no borrowing or adaptation from another language. Even the writing style and spellings (or rather syntax) have nothing to do with the source language, it is translated precisely according to what the word means (semantic) in the target language. In most cases when these terms have been translated from English to any African language (isiXhosa in this context) they become, very long. This results from the fact that some of these words end up being compound nouns and/ or a string of words. The following is the list of examples of ICT terms that have been translated from English into isiXhosa:

English ICT terms	IsiXhosa ICT terms
Adjustment	<i>Utshintsho lolungelelwaniso</i>
Alignment	<i>Ulungelwaniso</i>
Bold	<i>Ngqindilili</i>
Bullets	<i>Iimbumbulu</i>
Cut	<i>Ukusika</i>
Column	<i>Umgca ohlayo</i>
Deletion	<i>Ukucima</i>
Indent	<i>Ushenxiso</i>
Line spacing	<i>Isithuba phakathi kwemigca</i>
Find	<i>Fumana</i>

Table 2: List of translated terminology

(c) Invented (or innovative) terminology

These terms are developed by considering some cultural aspects associated with isiXhosa. The translators translate the way the component functions in the computer by relating it to

some of the cultural aspects. For instance, the word wizard has been translated as *umvumisi*. *Umvumisi* is a traditional healer who leads the patient by telling what he/she thinks could be the cause of a disease and asks whether the patient agrees to these presumptions. In terms of computer language, the term wizard is applied to a software program which gives guidelines on how to install a piece of software. It leads the user with a number of instructions on how to achieve this task. Linguistically, in isiXhosa the term wizard means *umthakathi* (i.e. a witch) and this culturally gives a negative connotation and could not be accepted to be used. Gauton (2005:131) states that according to the Western context a wizard is a wise and magical imaginary fairytale character. This could slightly relate to the way the wizard operates when installing software in the sense that it does not give difficulties, it knows exactly what should be done. The following is the list of the words that have been created:

English ICT terms	IsiXhosa ICT terms
Client	<i>Umxhotyiswa</i>
Client/Server	<i>Umxhotyiswa-mxhobisi</i>
CPU	<i>Inggondo yekhompyutha</i>
Default	<i>Uselekho</i>
Keyboard	<i>Isichwethezi</i>
Motherboard	<i>Umqolo wekhompyutha</i>
Server	<i>Umxhobisi</i>
Wizard	<i>Umvumisi</i>

Table 3: List of invented or innovative terms

5.3. The implementation of isiXhosa ICT terminology in the Eastern Cape

This section presents an investigation carried out in different research sites in the Eastern Cape i.e. a rural area in Willowvale and a township in Grahamstown. It starts by presenting and analysing data collected from the first site (Transkei), subsequently it presents and analyses data collected from Grahamstown. It later gives a comparative analysis of the two

case studies with the aim to reflect some similarities and differences emerged from the investigation.

5.3.1 Terminology Assessment and Adoption Strategies

This section stipulates and briefly explains the activities, exercises and techniques that were used for the assessment of isiXhosa ICT terminology usability. It presents and analyses a detailed account on the strategies used to capture students' views and perceptions about this terminology. These strategies and techniques will be presented in a chronological order, as follows:

- Students' views on African languages as Languages of Learning and Teaching (LoLT)
- Evaluation of terminology comprehensibility
- Teaching and assessment of the Bilingual Computer Literacy (BCL) course
- Questionnaires
- Interviews

A) Students' views on African languages as LoLT

On the first day before the introduction of the actual course, I had to organise classroom discussions on the importance of using South African indigenous languages as LoLT. These discussions entailed students' opinions about the use of their home language (isiXhosa in this context) as the medium of instructions. The aim of this activity was to investigate their attitudes towards using their language. It was looking at whether introducing this Bilingual Computer Literacy course will influence their perceptions on the use of our indigenous languages as LoLT. In the discussion, some of the questions were based on students' daily classroom experiences. By so doing, I was trying to find out whether students are not indirectly introduced to a dual-medium system where teachers would mainly explain complicated concepts using students' home language. This was also to investigate whether students are aware of the extensive use of their language in facilitating understanding. The discussions were conducted in isiXhosa and students were allowed to express themselves in any other language they would feel comfortable with, mostly English.

Initially, in all these schools the discussion did not go smoothly as students were reserved to express themselves. As a researcher and at the same time a person who has been in disadvantaged schools, I would associate this students' behaviour with a number of factors. Firstly, the teaching method might be the primary challenge facing schools in disadvantaged areas. Some educationalists such as Iv

an Illich and Paul Freire (quoted in Christie (1988:154) have also argued that teaching methods are very important. They state that in most schools the teacher usually stands up front, while the students sit passively at their desks. Christie (1988) further argues that in such settings the students' role is to listen to and to memorize what the teacher says. The students are not active and they simply receive the knowledge which the teachers deposit in their minds. Some scholars quoted from Christie (1988) called this system the banking system of education. They advocate that knowledge is treated as an object, a commodity that can be exchanged, instead of something that can be created. Most students are not trained to think critically or discover things for themselves. This was evident in one of these schools, where my research was undertaken, when their class teacher intervened to rescue her students. It was during the exercise of asking students to express their understanding on certain computer terms. The exercise was investigating whether students would be able to understand isiXhosa or English computer terms before seeing the actual computer components. Their teacher claimed that these students might not be able to express themselves as they were not yet taught computer literacy. This precisely confirmed the act of depositing some knowledge in the students mind rather than allowing them to think critically about it.

In each school I used an audio-recorder in order to capture several points that emerged from students' discussions. This is helpful and accurate when a researcher would like to preserve and re-visit the collected data.

B) Evaluation of terminology comprehensibility

In this section I discuss the findings that emerged from an activity to evaluate students pre-existing computer knowledge. According to the aims of this study, the students who are being researched are assumed not to have computer knowledge. With this in mind, the researcher organised an activity where students were required to explain some computer terms using their own understanding. These terms were both in isiXhosa and English. Students were organised into two groups and each group was allocated at least 10 terms of which 5 of them

were in isiXhosa and the other in English. Each group had a choice of defining these terms using English or isiXhosa. It did not matter whether the term was in English or isiXhosa but a student would define them using the language of their choice. These terms were extracted from the Bilingual Computer Literacy course material. This was the teaching material which was used in this course. In each school, I randomly chose 10 terms (5 in isiXhosa and 5 in English) and assigned them to a certain group.

The lists of the chosen terms are as follows:

English version

Software, Hardware, Computer, Email, Virus, Input devices, Output devices, Storage devices, CPU, Motherboard, Keyboard, File, Memory stick.

IsiXhosa version

Izixhobo ezingabambekiyo zekhompyuha, Izixhobo ezibambekayo zekhompyutha, Ikhompyutha, I-imeyile, Intsholongwane, Izifaki-nkcukacha kwikhompyutha, Izikhuphi-nkcukacha kwikhompyutha, Izigcini-nkcukacha kwikhompyutha, Inggondo yekhompyutha, Umqolo wekhompyutha, Isichwethezi, Ifayili, Umcinga osisigcini-nkcukacha.

C) Teaching and Assessment of the Bilingual Computer Literacy course

This section discusses students' impressions and performance in the teaching and assessment of the course. It discusses students' reactions when they first saw the bilingual material. It also covers the teaching of the course, which language was used and how students were participating in terms of the language usage in their classroom discussion. Which terms did they prefer to use in the classroom? At the end it presents the results of the test they wrote and also narrates some of the factors that affected their performance.

The Bilingual Computer Literacy course consisted of 5 lessons as indicated chapter 4. These lessons were taught as follows: Introduction to Computers; Word Processing; Spreadsheet using OpenOffice.org Calc; Presentations using OpenOffice.org Impress and Internet. Each lesson was developed in English then translated into isiXhosa. The booklet had isiXhosa alongside English for each lesson. Ideally, this material was developed to allow students to see both languages at the same time meaning that the English and isiXhosa pages appeared side-by-side.

The assessment of this course was based on the first two lessons (i.e. Introduction to Computers and Word Processing). The first question comprised of English terms of which students were required to give isiXhosa equivalents of those terms. The second question had three categories (input, output and storage devices) where students were asked to complete the tables by filling in the appropriate terms. Each category had 3 spaces provided. The third set of questions required students to define terms. All these questions were developed in both isiXhosa and English. Students were supposed to answer both isiXhosa and English versions.

D) Questionnaires

This section presents a descriptive and interpretive account of the questionnaires administered in these four schools. It presents the data by means of using charts then interprets the figures obtained in the research. These questionnaires were developed in English then translated into isiXhosa. This would allow students to complete the questionnaire using their language of preference. This questionnaire comprised of few questions of which most of them were closed ended questions.

E) Interviews

This section reports on the findings gained from the semi-structured interviews conducted with students from the schools researched in this study. This involves summaries of the group interviews conducted at Dwesa and Grahamstown. It was unfortunate that the interviews could not be conducted at Nombulelo High School due to a clash with the students' exams.

Each interview involves the structure of the interview questions and also some quotes extracted from the interviewees. These quotes were extracted from students' points of view which were useful for this research. Pseudonyms were used for the sake of confidentiality, privacy and anonymity of the students interviewed. In both these schools, each interview group comprised of a number of students which were randomly chosen from their classrooms. Interview duration was approximately 10 minutes and the interviews were carried out in isiXhosa.

Before commencing with each interview, the researcher briefly explained the aims/goals and reasons of conducting an interview. The researcher also informed students of their right to, or not to participate in an interview. The researcher also asked for the students' permission to use the recording device. The reasons for using this device were explained in order for the students to understand.

5.3.2 Presentation of findings according to the case studies

The following section gives a detailed account of the findings achieved from the research case studies. This starts by presenting and interpreting the results obtained at Dwesa and subsequently Grahamstown. This presentation of findings is shaped according to the order of strategies implemented in testing the usability and adoption of this terminology. This involves the unique presentation of findings according to each case study/ school. From the Dwesa region, I start by presenting findings obtained at Ngwane J.S.S and subsequently Nqabarha H.S. This also applies to the Grahamstown region where I present findings related to CM Vellem and Nombulelo schools.

5.3.2 IsiXhosa ICT terminology implementation at Dwesa Cwebe

5.3.2.1 Background to Dwesa Cwebe: Case study 1

As indicated in chapter 3 this is a socio-economically disadvantaged community. In terms of infrastructure, this area is still highly marginalised. Road networks are still in poor condition and not tarred and transportation for these rural people is problematic. Considering the aforementioned challenges, one can even conclude that it would be difficult for the villagers to obtain newspapers, books and access to literacy. During the time of this research, these villages did not have electricity. The only places where you could find electricity were service centres such as clinics, schools and a few residents who could afford to install electricity in their homes. This informs us that there are only a few of them who can afford to watch television and listen to radio in order to improve their language proficiency, particularly English. English is the dominant language in technology and in other spheres. Technology at large is quite a new concept for them. From the above statements it is implied that most of the students in this region mainly rely on teachers and other school resources for them to access and improve their English proficiency.

Moreover, residents of this area are still traditional people who hold onto their culture. Almost each and every household has a kraal even if they do not have livestock. At home, students spend most of their time conversing in their home language.

5.3.2.2 Siyakhula Living Lab project (Ngwane J.S.S and Nqabarha H.S.)

At Dwesa the two schools that formed part of my case studies were Ngwane Junior Secondary School and Nqabarha High School. Both these schools were part of the Siyakhula

Living Lab in Dwesa. As part of the Siyakhula project, students from Rhodes and Fort Hare Universities were offering some computer training to the pupils of Ngwane and Nqabarha, and also to the community members from these districts. These schools were named after these districts i.e. Ngwane and Nqabarha. In one of my visits to Dwesa, before I conducted my research, the research team asked me to conduct some lessons to the community members and pupils in Ngwane.

In these trips, I would engage teachers about the possibility of offering bilingual computer lessons. They saw it as a very good idea and they encouraged me to discuss this with their principals. I made time to see the principals at both Ngwane and Nqabarha. When I introduced and showed them the course material they were very much interested and they accepted the proposal. I investigated the computer labs. This involved verifying whether the required software to run this course was installed. I checked the number of computers that are functional in order to organise students accordingly.

In terms of the computer infrastructure, Ngwane was a central point as it houses the main server for other schools involved in the Siyakhula project. Its computer lab was regarded as the main Siyakhula Living Lab and it was accommodating students, teachers and the wider community. There were approximately 15 computers in this lab. All of them were in a good working state but sometimes, because the majority of them were quite old, they would malfunction. Ideally, this lab was supposed to be fully localised with Ubuntu as an operating system. This was an ideal computer lab to teach and learn computer literacy in any of the official languages (particularly isiXhosa). Unfortunately other computers were running with Microsoft Windows XP operating system. According to the information I got, this lab was still to be refurbished in order for it to run completely in Ubuntu. The Windows operating system was not localised and students could not choose a language of their choice. However, this did not discourage the installation of the Open Source Software (OSS) package. This package is called OpenOffice.org (which is equivalent to Microsoft Office) and was developed by an organisation called Translate.org.za. This package contains some applications that would allow a user to switch from one language to another. With the Windows operating system it is possible to install OpenOffice.org. This allowed students to run applications such as OpenOffice.org Word Processor (equivalent to Microsoft Word), OpenOffice.org Calc (equivalent to Microsoft Excel), OpenOffice.org Impress (equivalent to Microsoft PowerPoint), etc. In other computers this installation did not materialise hence we ended up using the Microsoft Office applications. The primary reason was the challenge of

connecting the memory stick on the server in order for it to appear in other computers. Some of these computers could not detect the disk. As a result of this, the students had to share computers.

In terms of the lab orientation, Nqabarha had computers of which the majority of them were installed with the Ubuntu operating system except one staff/administrative computer which was in Windows XP operating system. Even though these computers were running with Ubuntu, some of them did not have the language packages which allow the user to switch from one language to another. With the help of one of the SANTED members, we developed some live Compact Discs (CDs). These CDs would help the students run the computer entirely in any of the official languages. In other computers we re-installed the Ubuntu operating system which allowed students to switch from one language to another. To enhance demonstration when teaching, the vice principal of this school gave me a brand new projector and a mobile screen.

5.3.2.3 Case study 1A: Ngwane Junior Secondary School

In this school we used the entire Grade 9 class as it was the highest grade, and the number of students was very low but appropriate for this research. The sample target was Grade 10 and my aim was to choose two schools from the Siyakhula project. Out of the four schools involved in the Siyakhula project, Ngwane was one of the two High Schools involved. Considering the initially targeted sample and case study, choosing Grade 9 from this school was not a barrier. For these Grade 9 pupils, it was going to be their first time being taught computers in their language.

A1) Students views on African languages as LoLT

The following section presents and analyses Ngwane students' views. These points were recorded and summarised from the students' classroom discussions. Specifically, their discussion was based on their views about learning computers in their language (isiXhosa in this context). These Grade 9 pupils raised their different and interesting point of view.

Some of them stated that it would be difficult to get a job. Their main concern was that English is the dominant language to secure better employment. They believed that if someone has a good command of English, they have an advantage when it comes to job opportunities. These students strongly condemned the use of isiXhosa in any field of studies and in the workplace; they only agreed that isiXhosa could be taught as a language only. In terms of

employment, the major aspect that prevailed is the students' belief that the employers are white people who cannot speak their home language (isiXhosa in this context). The paragraph below is a quote from one of the students who believe that isiXhosa should not be used as the LoLT:

Mna ndithi makuşetyenzise isiNgesi ezikolweni zethu. IsiNgesi lulwimi olusetyenziswa jikelele yaye abaqeshi abalwazi ulwimi lwam. Ukuba sifundiswa ngesiXhosa oku kuthetha ukuba soze siyifumane imisebenzi engcono. Ayikho imisebenzi efumaneka yaye iqhutywe ngesiXhosa, ngaphezulu abaqeshi abakwazi ukuthetha isiXhosa

(I support the use of English in our schools. English is used globally and employers do not know our home language. Furthermore, we won't be able to get better jobs if we study in isiXhosa. There is no employment offered and conducted in isiXhosa and our employers can't speak isiXhosa).

The use of English as an international language made students to think that their languages are just stumbling blocks. They also did not perceive their language as the medium that would help them to improve their English proficiency. To further motivate their opinion against the use of isiXhosa, these students emphasised the issue of communication. Their concern was that there are so many languages in the world and they stated that English is the language of wider communication. The practical example that came to their minds is the South African language profile. They said that South Africa has 11 official languages. They saw this number of languages as a communication barrier among speakers of different languages. They perceived English as a uniting language. Zoliswa, a Grade 9 pupil made her remarks by posing some questions to the class as quoted below:

Njengokuba ndithetha isiXhosa abe umqeshi ethetha isiBhulu, ndixelele ukuba lwenzeka njani unxibelelwano kwimeko emjalo? Ngoko ke ndicinga ukuba isiNgesi sifanelwe ukusetyenziswa njengolwimi lonxibelelwano kwihlabathi liphela. Ngaphezulu, apha eMzantsi Afrika iilwim (ezisemthethweni) zilishumi-elinanye. Ingaba oku kuthetha ukuba kuza kufuneka kuphuhliswe izixhobo zokufundisa kwezilwimi zonke?

(In my case I speak isiXhosa and what if my employer is an Afrikaans speaker, tell me how are we going to be able to communicate? Then I think English should be used

as the language of wider communication. Moreover, in South Africa there are many (official) languages. Does this mean there will be a need to develop teaching material for all these languages)?

Other students were supportive of the idea of using isiXhosa as a LoLT. They were very much concerned about the daily challenges they face in their classrooms. Firstly, these students alluded to the fact that they mostly speak isiXhosa. They claimed that at school and even at their homes they speak isiXhosa and rarely speak in English. They reported that even in their classrooms they encounter a lot of difficulties in English on a daily basis. The points of views that were raised by one of the students, Ayanda:

Ndicinga ukuba kufanele ukuba sizisebenzise iilwimi zethu njengokuba siye sibenqobunzima ekulandeleni isiNgesi. IsiXhosa ndisazi njengokuba ilulwimi lwam. Amaxesha amaninzi ndithetha isiXhosa, apha esikolweni nasekhayeni oko kubangela ukuba isiNgesi ndisisebenzise manqapha-nqapha yaye lento ibangela ukuba isiNgesi sibenobunzima.

(I think we should use our languages as we face difficulties in understanding English. I understand isiXhosa better as it is my language. Most of the time I speak isiXhosa, here at school and at home then I hardly use English and this makes English a bit difficult for me to understand).

To add more to the support of using isiXhosa, other students thought that it would be quite significant if both languages could be used. This view was slightly accommodating both the students who were promoting the use of English as the only LoLT and also those who rather encouraged the use of isiXhosa. These students felt that it would be convenient if isiXhosa could be introduced alongside English. They also advocated that they also faced challenges when they are taught in English. They felt that they would better understand their courses as isiXhosa is their primary language and they understand it better than English. They acknowledged that English is the language of access. They admitted that the only way to improve their English proficiency would be to let isiXhosa intervene where there are difficult words. This is supported in the literature review presented in chapter 2 of this thesis. Thobile, who was one of the students who supported the use of both languages, had this to say:

Singasebenzisa isiNgesi nesiXhosa njengokuba ekhona amagama anzima esiNgesi. Ngamany' amaxesha ndiye ndibenengxaki yokulandela oko kufundiswa ngenxa yamagama anzima esiNgesi. Ndiyacinga ukuba sinokuzisebenzisa zombini ezi lwimi siza kwazi ukulandela okufundiswayo njengokuba isiXhosa ilelona lwimi silazi ngcono.

(We can use English and isiXhosa as there are words that we do not understand in English. Sometimes when a teacher talks I would not understand other concepts as I do not understand other difficult English words. I think if we use both we will be able to understand as I can understand everything that is said in isiXhosa.)

The fact that this group of grade 11 learners were new to computers and they shared the same background with the grade 9 learners proved me wrong. In terms of discussions, there was no huge difference, but the surprise was that Grade 9 pupils brought a number of controversial issues and they were critically engaging with those issues. They alluded to a number of challenges and difficulties anticipated with the use of African languages in education and elsewhere. They raised issues such as the lack of job opportunities and that they would be forced to communicate across cultures. These students implied that proficiency in English is quite imperative for one to pursue a better job. They perceived English as the language of access and power. Some of them acknowledged the difficulty of being taught in English. They suggested that it would be advantageous if they can have isiXhosa alongside English.

Firstly, from the above summaries the major point was the manner in which Grade 9 pupils were expressing their views comparable to the Grade 11 pupils. Grade 9 pupils raised different points of view whereas the majority Grade 11 students were just concerned about improving their English proficiency. Their cognition was completely different in the sense that the lower class raised some challenges they face in their classroom and identified some future concerns.

From my point of view Grade 11 students were mainly concerned about knowing English. They seemed not to consider the issue of not understanding it very well. The wide use of English made them feel obliged to be fluent in English. They did not see the possibility of improving their English proficiency through isiXhosa. They strongly agreed that they know isiXhosa but they do not see any reason for them to study using their language. Some of them confused the difficulty of reading isiXhosa sentences with understanding isiXhosa words.

They could easily read the English sentences but the concern is: did they understand these sentences?

Grade 9 raised the most crucial points. They were mainly concerned about employment as the majority of industries and companies require English proficiency. Another very crucial point was the issue of diversity and they saw English as the solution to this complication. Some of them accepted that they encountered difficulties in understanding lessons conducted in English and they saw isiXhosa as the only way to improve their understanding.

B1) Evaluation of terminology comprehensibility

In this section I discuss the findings that emerged from an activity to evaluate students' pre-existing computer knowledge at Ngwane and I also present the challenges which were associated with this activity.

Definitions of 10 computer terms

Firstly this activity was aimed at students who have never ever used computers before. The challenge with the Grade 9 at Ngwane is the fact that they had learnt computer literacy before attending this course. This meant that this exercise would never serve the purpose as students already know some of these terms. This was evident as these students did not use their immediate knowledge in performing this exercise. When I gave them the exercise they took some time to finish it and I decided to make it homework. Because these students would not be able to meet after school they decided that they will do these tasks early in the morning on the following day. When they submitted their defined terms I realised that they used other sources to do the task and this defeated the objective of the exercise in trying to establish whether they could understand terms before actually learning about these terms.

C1) Teaching and Assessment of the Bilingual Computer Literacy (BCL) course

i) Teaching of the BCL course

The teaching of the BCL course took place as part of the monthly visits to Dwesa. Before the course started, I visited Dwesa in order to explore and make arrangements in preparation for the BCL course. In May 2009, in one of the trips just before we started with the course, the group of researchers who went up to Dwesa requested me to conduct the computer lessons with the students and community at Ngwane J.S.S and Nqabarha H.S. This was mainly motivated by the fact that I shared the same background with the students and community. At

Ngwane I only taught the community members whereas at Nqabarha I taught both the community members and students in the same classroom. In the process of conducting these lessons I had an opportunity to negotiate the possibility of running a Bilingual Computer Literacy course as part of my research project with the school principals and computer literacy teachers. The principals and these teachers welcomed this proposal.

During the following trip, which was on the last week of May 2009, we started with the teaching of the BCL course. At Ngwane it started with the evaluation of students' computer knowledge. As indicated above, the Grade 9 pupils at this school were already introduced to computers in the previous year. The major difference was the language intervention. It was their first time to learn computers using the material developed in isiXhosa. On the first day students were tasked to explain terms provided in isiXhosa and in English by using their own knowledge. For these students this was not a tough exercise as they already knew these computer terms.

The first lesson was about the introduction to computers. It was more about introducing the isiXhosa computer terms as these students could slightly remember the English ones. Ideally, I was hoping that their teacher would conduct the lessons and my role was to assist where necessary. This would give me time to observe but their class teacher requested me to conduct the lessons as she was not familiar with this bilingual material. Even though she was not running the lessons, she would come to the class for support and also to see whether students were cooperating.

The teaching was not entirely in isiXhosa as I would give an isiXhosa computer term with its English equivalent. Most of the time, the students would remember some of the English terms. This was mainly caused by the fact that they already knew these terms. There were a couple of isiXhosa terms which they would use in the classroom.

ii) Assessment of the BCL course

The assessment took place on the same day as interviews and the distribution of questionnaires at Ngwane. They firstly wrote the test before they did the interviews and questionnaires. They spent more than an hour writing this test, which I anticipated would last for an hour. Their results were not as good as their participation in the classroom. There are factors that affected the students' performance such as the following:

- Time constraints

- The course was not part of their curriculum.
- Negative attitude against isiXhosa version of the BCL course.

a) Time constraints

The test for this course was scheduled to be in the first week. It was ideal for this course to be finished within a week in order to avoid interruptions with the schedules for other Dwesa trips.

There are other factors that contributed to the students' poor preparation. Firstly, the issue of not having electricity in their homes was problematic. I anticipated that students were not able to study at night. Secondly, the first two lessons were too long for students to read within a week particularly given that they had to read isiXhosa and English versions of this course.

b) The course was not part of their curriculum

This course was conducted as part of the research project. Students were fully aware that this course would not bear them any marks as part of their syllabus. Due to this reason, most of the students never took this course seriously. Some of them even stated that they never read the course at all. Even their test scripts revealed that some of them never read the course material.

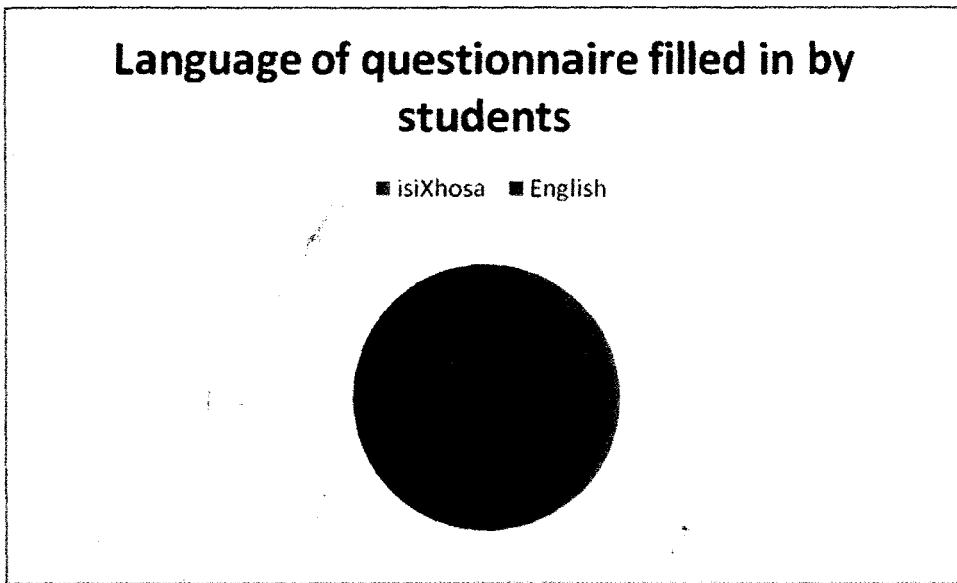
c) Negative attitude against the isiXhosa version of the BCL course

It was going to be a challenging exercise to compare the results of this bilingual (English-isiXhosa) test. Many students claimed that they never read the isiXhosa version of the course material. Despite that they obtained poor marks for the overall test but one could see that their results were worse in the isiXhosa version. More than anything else, this appeared to be an attitude problem due to the perceived difficulties associated with African languages.

D1) Questionnaires

This section presents a descriptive and interpretive account of the questionnaires administered at Ngwane. The questionnaires were distributed and administered in June. The respondents at this school were isiXhosa-speaking students. In the beginning of the BCL course there were 13 pupils but only 12 respondents could fill in the questionnaires as the other student was absent on this day. All of the distributed questionnaires were filled in and returned.

Table 1A: Language of questionnaire filled in by students



As indicated in Table 1A above, 92% (11 students) of the students filled in the isiXhosa version of the questionnaire while 8% (1 student) filled in the English version. This indicates that the majority of students were more comfortable to use isiXhosa than English, in terms of filling in a questionnaire. When comparing the two schools, in Grade 11 (from Nqabarha) the number of students who preferred to complete the questionnaires using isiXhosa did not make a big difference compared to those who preferred English whereas the significant majority of students in Grade 9 (from Ngwane) preferred isiXhosa over English. This implies that the higher the Grade the more students are comfortable or prefer to use English.

Table 2A: Gender

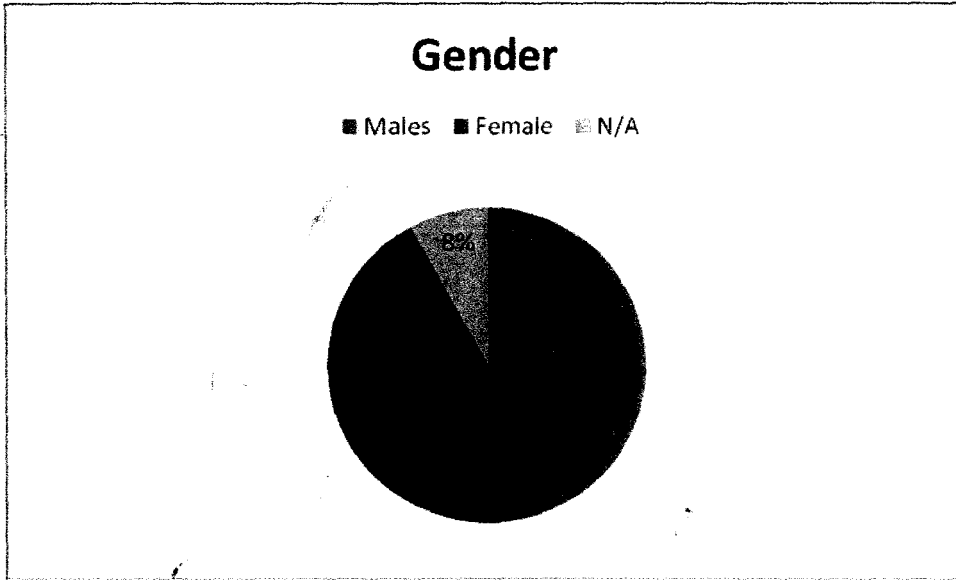
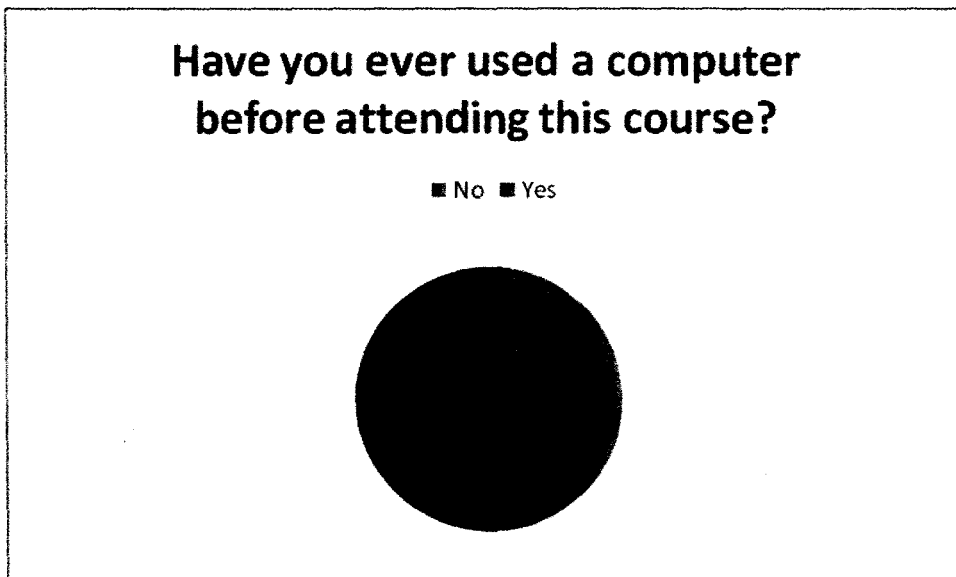


Table 2A above indicates the gender details of the students who filled in the questionnaires at Ngwane. At Ngwane, the figures were abnormal as we had more males than females and this does not represent the reality. In reality, especially in the lower levels, in terms of numbers, female students usually dominate the classroom. We could not balance the numbers as the students who completed the questionnaires were the Grade 9 class and these were the only students at that level. Out of 12 students who completed the questionnaires, seven (59%) of them were males, four (33%) were females and one (8%) did not specify. This was the entire Grade 9 class of Ngwane in 2009.

Table 3A: Have you ever used a computer before attending this course?



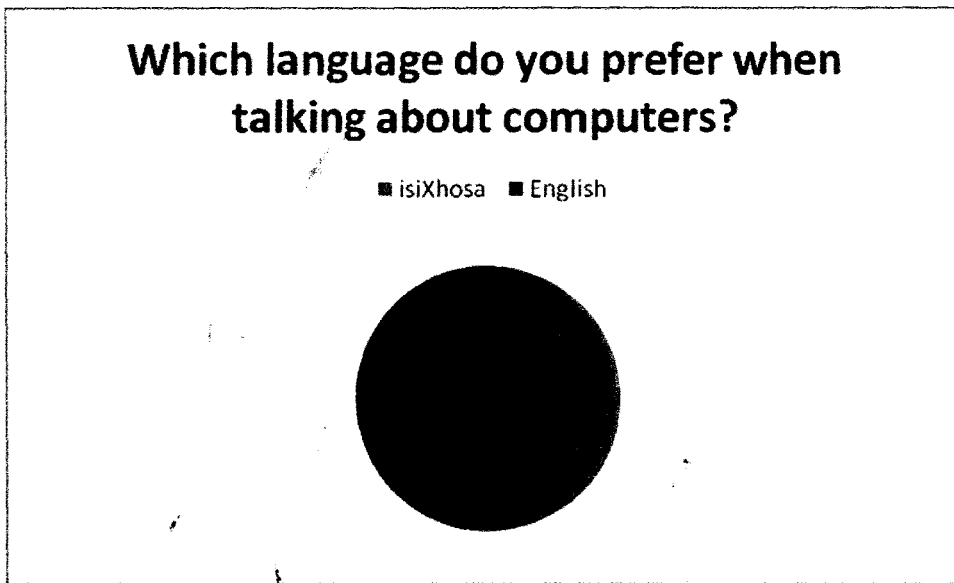
As indicated in Table 3A, the majority (i.e. 89%) of Grade 9 students at Ngwane had been introduced to computers. They received this opportunity in one of the computer training sessions conducted by the researcher from Rhodes and Fort Hare Universities. This was an advantage for them as this course appeared as revision. The major difference for these students in terms of acquiring this course was the fact that it was their first time ever to learn computers, almost entirely, using their language.

Table 4A: Have you ever seen computer software in your language (i.e. Linux, Firefox, OpenOffice, etc) with the menus in your language?



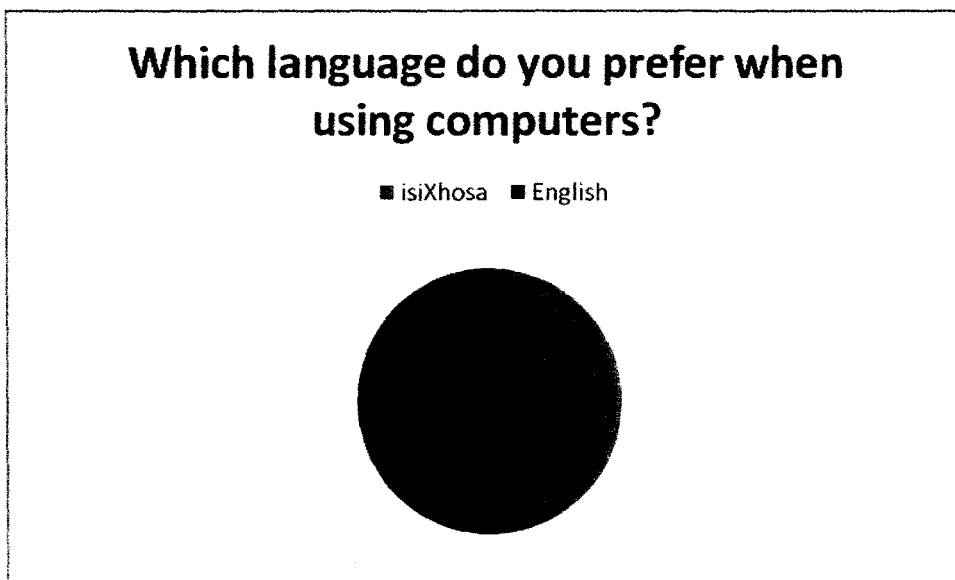
As part of the intellectualisation of African languages, there is software localised in order to cater for African languages. In South Africa, it has been localised in all eleven official languages. This localised software entails the most important software used in a computer (i.e. operating system) and other necessary software (application and web browser). This enables computers to operate entirely in the language specified by the user. As Table 4A, indicates above, many students had not seen computer software developed in their home language before attending the BCL course. This table illustrates that 83% of the class had never seen computer software developed in their home language. At Ngwane, at least there were computers we used to demonstrate computer software localised into South African languages (primarily isiXhosa). Despite the technical challenges in terms of localising all computers in these schools, students had an opportunity to see software developed in their language. This also restored their confidence in their home language.

Table 5A: Which language do you prefer when talking about computers, English or isiXhosa?



As indicated in Table 5A, at Ngwane the majority (75%) of Grade 9 students preferred to use isiXhosa when talking about computers. Even in their classroom discussions they were using isiXhosa. They would hardly speak in English except when they mention a certain term of which they felt comfortable to pronounce in English.

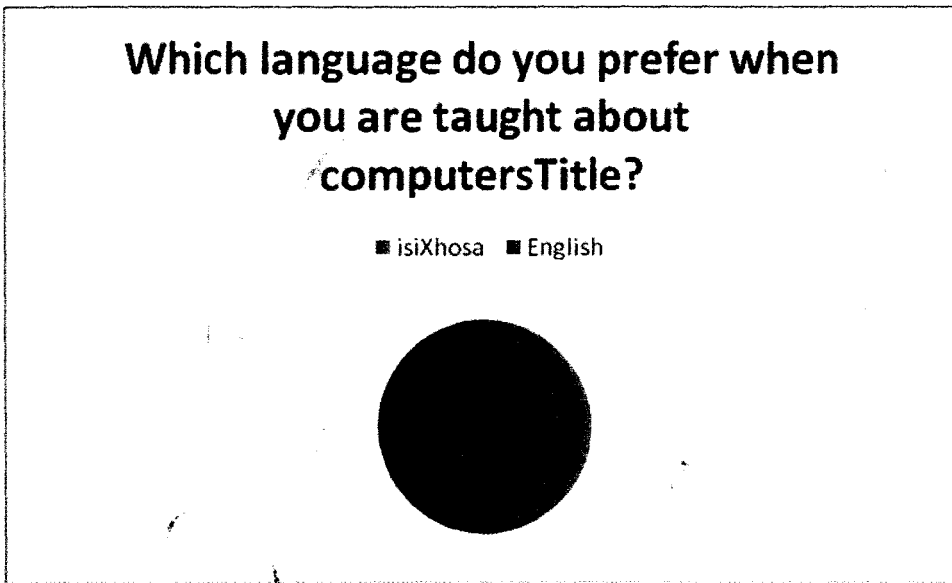
Table 6A: Which language do you prefer when using computers, English or isiXhosa?



The majority of these respondents preferred English when using computers. The above table (i.e. Table 6A) indicates that 58% of respondents at Ngwane preferred English. Their preference could also be influenced by their limited knowledge of computer software

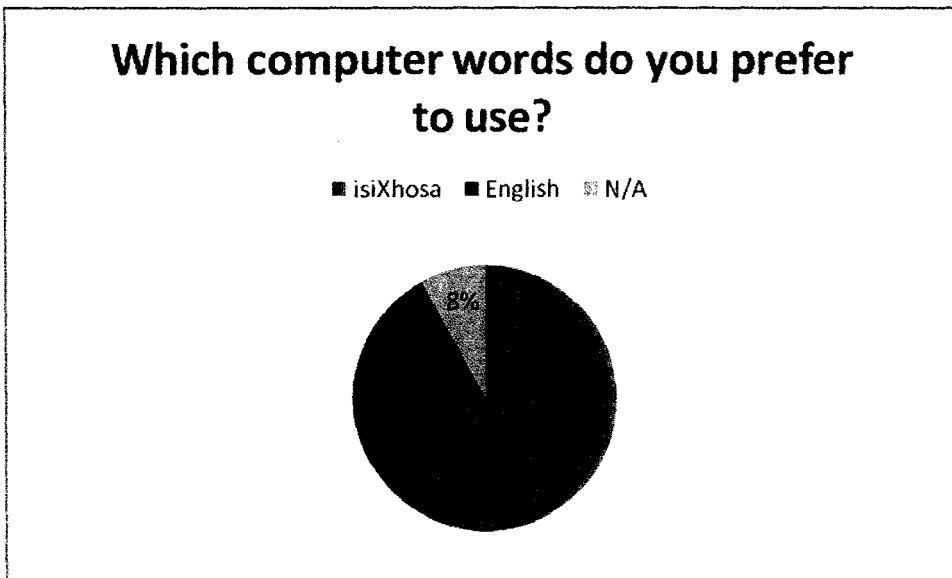
localised into isiXhosa. As indicated in table 4 above, the majority of these students from this school have never seen computer software in their language. This might originate from the negative attitudes against the use of South African indigenous languages due to the stigma attached to them. These attitudes continue to deceive students in acknowledging the role played by their languages in facilitating understanding more than memorisation. We have seen when we introduced the bilingual teaching material how students reacted against their language. In the interviews some boldly stated that they never read the isiXhosa version. One should also consider the lack of awareness in terms of the development of resources in African Languages. It has also been indicated that the majority of students from these schools have never seen computer interface in their language. Attitudes and awareness are two aspects that should be considered when analysing these findings. This illuminates the fact that these students might feel very comfortable to discuss using their language but still they believe that English should be the language of access despite their using another language in discussions. The majority of Nqabarha students are consistent in emphasising their view which reflects that for them everything should be done in English. Maybe this is mainly influenced by the notion that they are approaching Grade 12, moreover they will very soon be university entrants. Among high school pupils there is a notion that for one to be successful in university they need a good command of English. The previous statement is absolutely true if we consider the present situation about the status of English. The African languages are still not yet fully developed in order for them to be used in high status domains. This leads to a situation where students feel that for them to be successful in future they should rely on English.

Table 7A: Which language do you prefer when you are taught about computers, English or isiXhosa?



The majority (as indicated in Table 7A) of respondents with 67% at Ngwane preferred to be taught about computers in isiXhosa.

Table 8A: Which computer words do you prefer to use, English or isiXhosa?



The above table (i.e. Table 8A) partially answered the main research question. This revealed students attitudes toward the use of computer words in any of the two languages. This gave students the opportunity to express their views about which terms they would prefer to use. 67% of respondents in Ngwane preferred isiXhosa words.

E1) Interviews

This section gives summaries of the group interviews conducted at Ngwane. From the 12 students who attended the class on the day of conducting the interviews, the researcher randomly chose students to form the focus groups. There were 3 students per group. The duration of each interview was approximately 10 minutes and the interviews were carried out in isiXhosa.

Interview question 1: In our discussion prior to the teaching of the bilingual computer literacy course, students expressed their views about the use of African languages as languages of learning and teaching (LOLT). This question was aimed at re-emphasising whether they still maintain their views about the use of African languages (isiXhosa in this context) to teach computer studies.

Summarised students' responses: Most of these students felt that the use of their home language alongside English would be helpful particularly when they encounter some difficulties in English. They emphasised that this will also improve their English proficiency. According to them this dual-medium system would facilitate their understanding. They made it clear that English is the language of access and isiXhosa is their mother-tongue. They believed that they know isiXhosa very well.

One thing which was confusing is that some of the students from these different groups believed that being taught in isiXhosa will help other students and not necessarily themselves. Quoting verbatim from one of the students, he said:

Saphinda sathi kulungile ukufundiswaa iikhompyutha ngesiXhosa ngoba abanye abantwana abasiva kakakuhle isiNgesi

(We once again said it is good that we are taught computers in isiXhosa as other students have problems with English).

Students hardly ever admit to having problems with English. The status and demand of English within our society make people feel inferior when they cannot speak it. From my personal experience, when someone realises that they could not pronounce or understand an English word in public they feel ignorant and disappointed in themselves, but if it is an isiXhosa word they do not care. This is mainly influenced by the attitude and stigma attached

to our languages. As much as students have problems with English words, they don't want to admit it and this is why they feel that the use of isiXhosa will help other students.

There was a very interesting group at Ngwane (i.e. group 3) which came with different views in terms of the above question. All of them thought that using isiXhosa would be a disadvantage for them. They motivated their argument by saying that studying in isiXhosa would discourage them from improving their English proficiency and another student said this will also reduce chances of getting job opportunities. According to one of these students, jobs are associated with white people and English. This attitude stems from colonisation and also English domination. One of the students claimed that there is no white person who can speak isiXhosa in the workplace. Quoting her words verbatim she said:

Ndithi nam kulungile ukuthetha ikhompyutha nge-English ngobana sizakuthi xa siphuma sigqibile ukufunda siyofuna umsebenzi asizokufumana mlungu othetha isiXhosa siza kufumana umlungu othetha isiNgesi

(I also support the use of English in computers as we won't be able to get jobs when we complete our studies as there is no white person who speaks isiXhosa, we will rather come across a white person who speaks English).

Interview question 2: This question was based on their daily classroom experiences. Mainly this question was investigating their classroom language experiences. The interviewer was interested to know whether these students usually encountered some difficulties in their learning areas and also to find out how they would tackle and find solutions to those difficult terms.

Summarised students' responses: Students admitted that in their classroom they do encounter some difficulties with the English words. In many scenarios they usually get help from their teachers. Their teachers would explain the complicated English terms using isiXhosa and that would help them understand. One student from the group that supported an English-only medium of instruction argued that their teachers help them to understand the actual meaning of the word. He further stated that this would help them to use the words correctly and contextually with pure understanding. Quoting directly from his statement, he said:

Ndicinga ukuba mna yinto engalunganga leyo kuba ukuba ndiza kufunda ngesiXhosa iya simosha loo nto. Kufuneka sizifunde nge-English kwenzela ukuba i-English siyazi

njengokuba abanye abantu beyazi... nathi siye sibufumane ubunzima kodwa apha ekuhambeni ndicing' ukuba kuza kuhamba kuhamba kubelula. ... kwezi ngxaki siye sicelel' uMiss ukuba asiguqulele esiXhoseni sikwazi siyazi intsingiselo yelo gama.

(I think to be taught in isiXhosa is not a good thing as this will ruin our future. We should learn in English in order to improve our proficiency as other people who are fluent in English... we also encounter some difficulties but I believe that in the long run things will fall into one place. ... when faced with challenges, we usually ask our class teacher to translate the word for us and also to give the actual meaning).

To sustain his original argument about not using isiXhosa, he optimistically claimed that these are minor and temporal challenges that will eventually pass. He believed that they will, sooner than we could imagine, be fluent in English. He supported his argument by making an example about an orphan; that this child would initially face difficulties in life but as time goes by she/he would suddenly cope.

He persisted by showing his optimism about their foreseen fluency in English but not entirely admitting that currently isiXhosa plays a role in improving their English proficiency. This revealed the prevailing negative attitudes about African languages and the resilient English hegemony. Several students reported that they would consult a dictionary. Another student from the very same group that had negative opinions about the use of isiXhosa claimed that she would utilise a bilingual (isiXhosa and English) dictionary to look up equivalents. This dictionary would help her get these English words explained in isiXhosa. This showed exactly that they would facilitate their understanding through the use of isiXhosa.

Interview question 3: This question was specifically on the usability of the BCL material. It was investigating some of the challenges and advantages introduced by this course material. The question was aiming at putting on the table some of the terms that were easily understood or confused or not convenient for students. Students had to tell which words they preferred to use and why. If possible, a student would specifically give the actual term or tell which language terms (either English or isiXhosa) were difficult to use.

Summarised students' responses: They stated that they used the Bilingual Computer Literacy material. The first thing that surfaced is that they would not just know these terms unless they were taught. Whether it is an English or an isiXhosa term, the students claimed that as long as they were explained thoroughly they would understand the terms. But it

appeared that there are other terms they would understand before they could be explained. We discussed whether they would assume the functions of the following terms before they would see them i.e. “*storage devices*” in English and “*izigcini-nkcukacha kwikhompyutha*” in isiXhosa; “*Central Processing Unit (CPU)*” which means “*ingqondo yekhompyutha*” in isiXhosa. They would not tell what the function of the “CPU” is whereas they could explain what “*ingqondo yekhompyutha*” does, the same applied to “*storage devices*”. Other terms that they found confusing when giving definitions were hardware and software (i.e. the English version) but they understood the meaning of the isiXhosa versions and they could differentiate which one refers to tangible and/or untouchable components. In isiXhosa these terms were “*izixhobo zekhompyutha ezibambekayo*” (i.e. Hardware) and “*izixhobo zekhompyutha ezigabambekiyo*” (i.e. software) which literally mean “tangible computer components” and “intangible computer components”, respectively. It appeared that the English version of these terms were not easily understandable beforehand. They also brought up the term “*keyboard*” of which they did not know that it is “*isichwethezi*” in isiXhosa. The reason that this particular student knew the meaning of keyboard in English was because they attended a computer literacy course before attending this one. He went on to explain that if he was not told what the keyboard is he would not know it beforehand. For them to understand a couple of English terms they were helped by their prior knowledge but for a couple of isiXhosa terms they understood the function of certain components before they would even use or see them.

Interview question 4: It was based on the language they chose to fill in the questionnaires and also to give reasons for their choice.

Summarised students’ response: Most of these students chose to fill in the questionnaire using isiXhosa. Their primary reason was that they could easily understand the isiXhosa questions. Some of these students even claimed that they firstly attempted to answer the English version but they realised that this might be a bit of a challenge. The few who chose to fill in using the English version just felt like answering in English. According to my assessment, those who chose English are perceived to be intelligent in the classroom. One of these students was a member of the Student Governing Board (SGB) and he was also responsible for ringing the bell. It was also evident that the students who advocated for the use of English-only were influenced by the benefits associated with this language. They also filled in the isiXhosa version of the questionnaire.

5.3.2.4 Case study 1B: Nqabarha High School

Nqabarha is the only high school in Dwesa which offered Grade 12 as the highest grade. The teachers chose students from Grade 11 for my study as these students did not get the opportunity to attend computer lessons in previous sessions. Moreover, the group that was chosen were the desired students who never used computers before.

A2) Students views on African languages as LoLT

The following section presents and analyses Nqabarha students' views on the use of isiXhosa as a LoLT. These points were extracted and summarised from the students' classroom discussions. The students were asked the following question: what are their views about learning computers in their language (isiXhosa in this context)?

The majority of these Grade 11 pupils made it clear that they strongly support English as the medium of instruction. They were completely against the use of isiXhosa. The first argument was based on the perceived usability of these languages. The difficulty of reading associated with isiXhosa appeared to be a barrier for some students. Even though they expressed that they know isiXhosa very well as it is their language but they felt that English is a very simple language to read. In terms of understanding, it was evident that they have a better understanding of isiXhosa than English but their negative attitude suppressed this advantage. In the classroom discussions it came out clearly that they usually struggle with English in their classrooms and their teachers would switch into isiXhosa in order to help them to understand. Despite these interventions by teachers, these students were still adamant about the English-only medium of instruction. More than anything else, this attitude appeared to be primarily triggered by the benefits associated with the English proficiency. The following statements were quoted from two students:

Mna ndikhetha ukusebenzisa isiNgesi njengokuba kulula ukusifunda. Akukho lula kum ukufunda izivakalisi ezibhalwe ngesiXhosa. Le nto inganzima kuba inxalenye yezifundo zethu ziqhutywa ngesiNgesi.

(I prefer to use English as it is easy to read. I struggle to read sentences in isiXhosa. It is going to be difficult for us as most of our learning areas are conducted in English).

The second student who also raised a similar point of view claimed that:

Kufanele ukuba sisebenzise isiNgesi njengokuba ilulwimi olusetyenziswa ngabantu abaninzi. IsiXhosa lulwimi lwam andinangxaki naso yaye ndiyasazi kakuhle. Eyona nto ibalulekileyo kum okwangoku kukuba ndithethe isiNgesi.

(We should use English as it is the dominant language. I do not have a problem with isiXhosa as it is my language and I know my language very well. Now I am only concerned about being proficient in English).

At this school, there were a few students who supported the use of isiXhosa. As much as they were not so vocal and confident but they felt that there is a need of having isiXhosa alongside English. Their argument revealed some challenges they face on the daily basis when they are taught in English. They even said that they would hardly finish a lesson without coming across a difficult English word. They understood the importance of English as the language of job access. The following is a quote from one of the students:

Ndicinga ukuba kufanele sizisebenzise zombini njengokuba singasazi ngokupheleleyo isiNgesi. IsiXhosa lulwimi lwethu yaye singasanceda ekubeni sisazi ngcono isiNgesi.

(I think we should use both of them as we are not entirely fluent in English. IsiXhosa is our language and it will help us to understand English better.)

B2) Evaluation of terminology comprehensibility

In this section I discuss the findings that emerged from an activity to evaluate students' pre-existing computer knowledge at Nqabarha. These students did this exercise in groups. I divided them into two groups. They were 15 of them, one group had 8 students and another had 7.

Definitions of 10 computer terms

Group 1

This group gave the definitions of these terms in English. They felt comfortable in answering using English. Despite that this exercise was not concerned about their grammar, some of the English and isiXhosa terms were defined correctly. Terms such as *izixhobo zekhompyutha ezibambekayo, intsholongwane, email, keyboard*. For other terms, they would give

definitions that are not entirely correct in terms of computers but the way they explained them would make sense for a person who had never used computers before. This included terms such as “*ingqondo yekhompyutha*” which means brain of the computer, of which they defined it as the memory that keeps information in the computer. This would be more complicated if we would introduce a computer memory such as a ROM or RAM. I would certainly understand why they associated memory with brain. In an abstract sense, their definition emerged from the fact that a brain is used to keep and remember events. Then students defined this term from that perspective.

Group 2

These were typical students who were not exposed to a lot of western oriented resources and practise. The use of computers to them was something totally new and foreign. This can be further explained by the definitions they gave in this exercise. The term “**hardware**” to them was associated with the tools we get from the hardware stores. They defined hardware as a store where you buy building material such as zinc, building blocks, etc. To a certain extent, one can say that these students had an understanding of hardware. This would make more sense if they could transfer their knowledge into computers. If they claimed that in terms of computers hardware involves the entire portable computer tools but they never associated hardware with computers.

Their knowledge of a hardware store helped them a lot as they clearly understood the meaning of hardware in terms of computers. This was revealed when we had further discussions with these students, some of them could tell that hardware refers to computer components (such as a keyboard, monitor, tower, etc) that build-up a computer. For terms such as “*umqolo wekhompyutha*”, they gave a precise definition. I assumed that they defined this term from their knowledge about the fact that a lot of body parts are attached to the backbone. The other group dismally failed to explain what the motherboard is. If I compare the terms “**motherboard**” with “*umqolo wekhompyutha*”, I would like to assume that to students the word “**motherboard**” did not make sense to them whereas they could explain the term “*umqolo wekhompyutha*”.

C) Teaching and Assessment of the Bilingual Computer Literacy course

Teaching of the BCL course

Before getting started with the BCL course teaching, I also got an opportunity to conduct a computer literacy at this school. These lessons were offered to a few community members and students at the same time. This course was in English but most of the explanations were in isiXhosa. This was an advantage for both students and community members. Whilst I was running these lessons I organised dates for the BCL course. In terms of our agreement, the computer literacy teacher from Nqabarha agreed to run the BCL classes. I gave her the bilingual teaching material in order to familiarise herself.

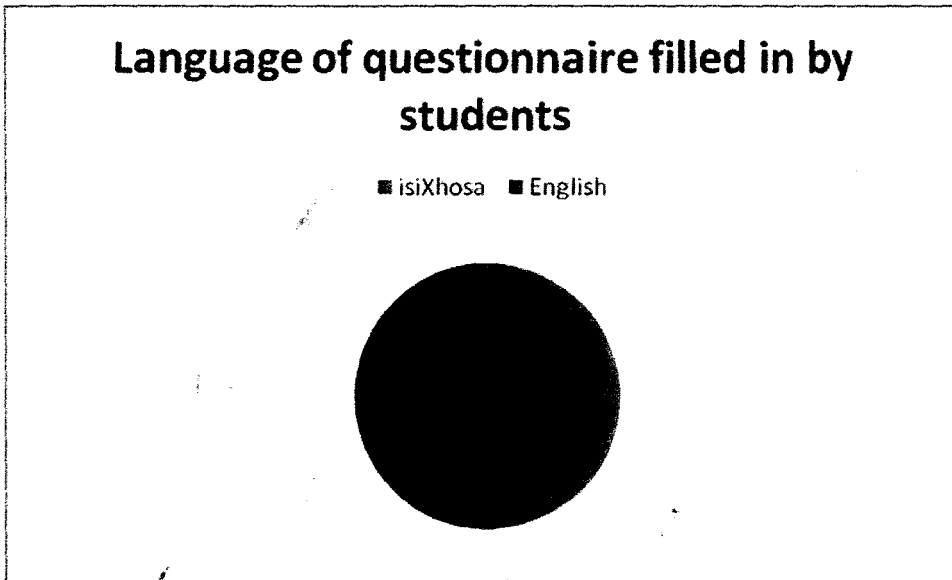
At this school we had an agreement with the computer literacy teacher that she would conduct the lessons. She took the bilingual material in order to familiarise herself. When it was time for these classes, this teacher informed me that she was changing posts. There was a new teacher who was going to take over. The new computer literacy teacher agreed to take the classes but she requested to conduct them in English. During the course of the week I had to conduct the course by myself as the teacher claimed to have a busy schedule.

On the day of assessment, these students came with the BCL booklets and other started to read in the computer lab. The results were the evidence that these students never bothered to read the course. Even in the interview they stated that they never read the course. One of them even said that she was not aware about the day of writing the test. Students were not committed to this course at all. This was understandable as this course was not part of their curriculum.

D2) Questionnaires

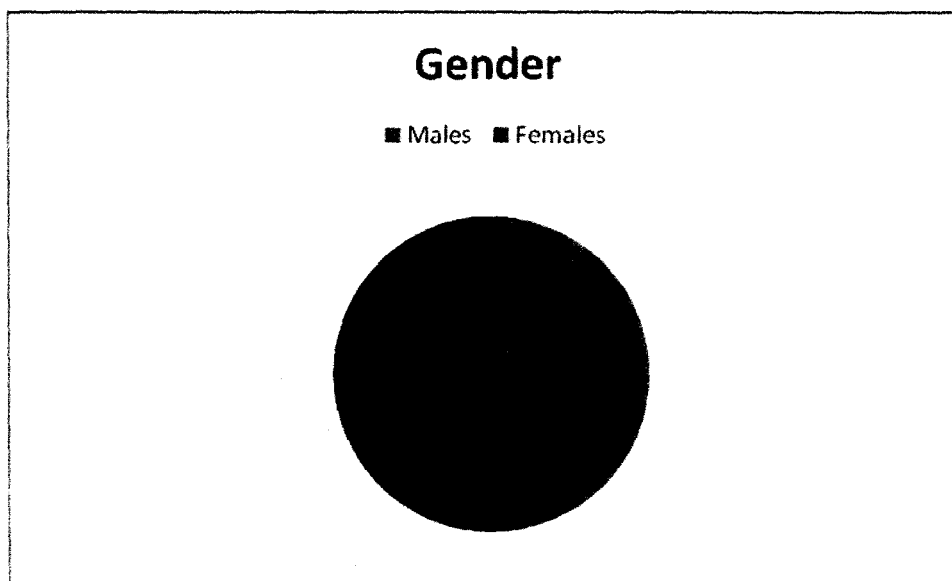
This section presents a descriptive and interpretive account of the questionnaires administered in Nqabarha. The questionnaires were administered in July. The target group were isiXhosa-speaking students as we have already stated that these high schools only comprise of isiXhosa-speaking pupils. In the beginning of the bilingual computer literacy course there 16 Grade 11 pupils at Nqabarha. On the day of questionnaire administration only 11 pupils completed and returned the questionnaires.

Table 1B: Language of questionnaire filled in by students



As indicated in figure 1B above, 55% (6 students) of the students filled in the isiXhosa version of the questionnaire while 45% (5 students) filled in the English version. This slightly indicates that the majority of students were more comfortable to use isiXhosa than English, in terms of filling in a questionnaire. In terms of the discussions with the students, one would imagine that the majority of these Grade 11 pupils would prefer English when filling in the questionnaires. This slightly revealed the difficulty they face when dealing with English.

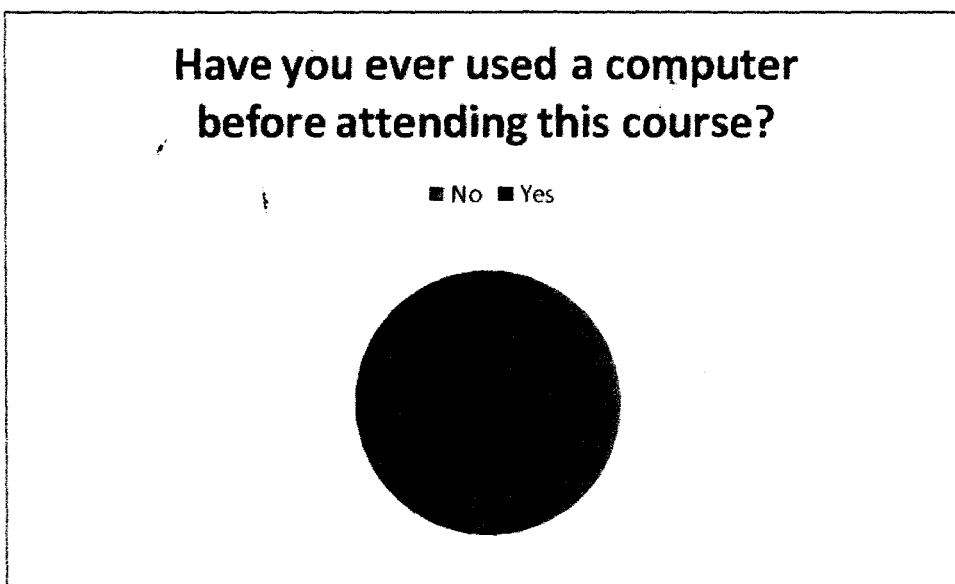
Table 2B: Gender



The figure 2B above indicates the gender details of the students who filled in the questionnaires Nqabarha. According to students who attended this course, 90% were females

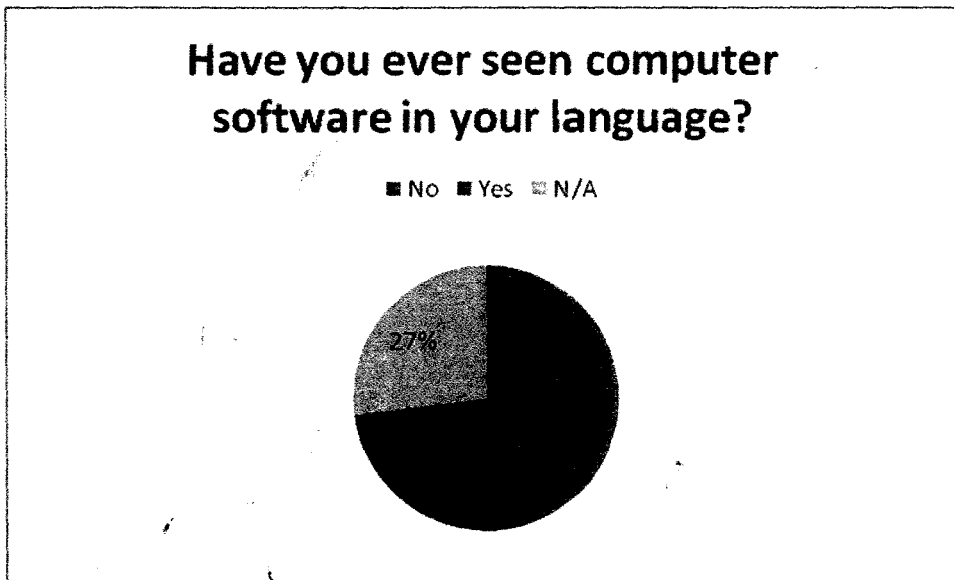
and 10% of the class comprised of males. This class was dominated by females. These students who attended this course were specifically selected because they did not have the opportunity to learn computers in the previous computer sessions. Their teachers were very much concerned that these students might reach Grade 12 and even proceed further to tertiary level without any computer knowledge. In terms of gender, I would like to assume that the selection was not bias as they were chosen because of the above reasons.

Question 3B: Have you ever used a computer before attending this course?



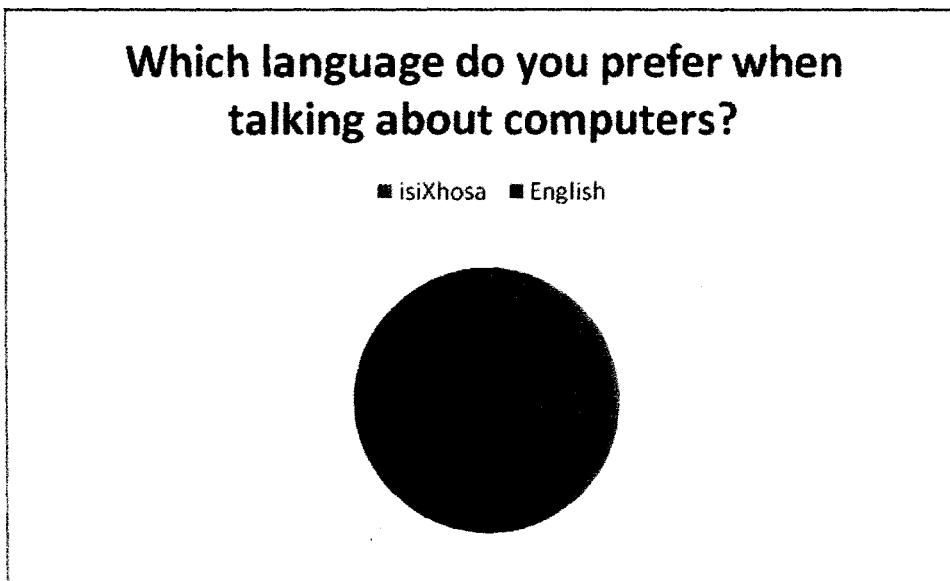
As indicated in Table 3B, the majority of Grade 11 students had never been introduced to computers, it was only 18% (2 out of 11) that have used computers before. The students who attended this course were deliberately chosen by their teachers.

Question 4B: Have you ever seen computer software in your language (i.e. Linux, Firefox, OpenOffice, etc with the menus in your language?)



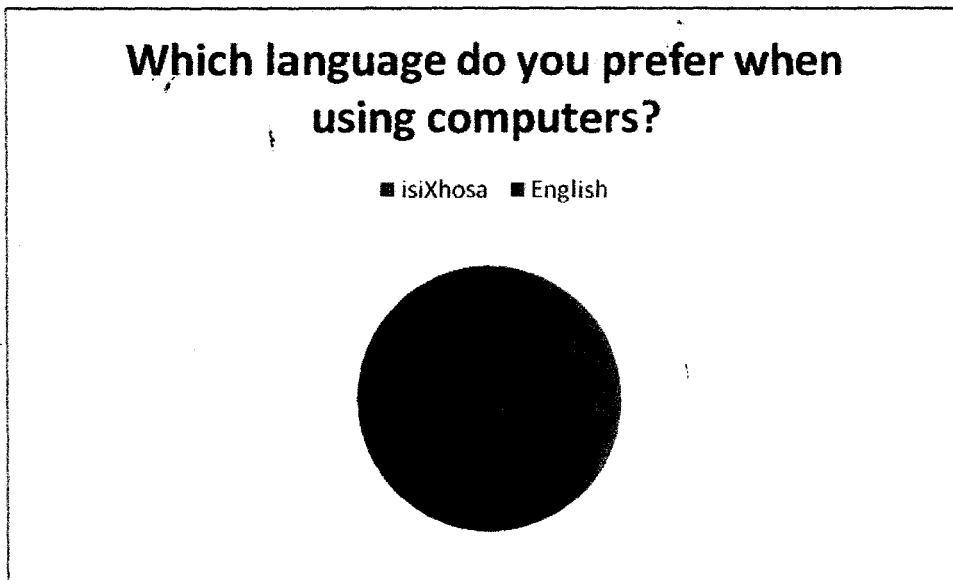
As the Table 4B above illustrates that many students, before the bilingual computer literacy course, had not seen computer software developed in their home language. The table indicates that 55% of the respondents have never seen computer software in their language whereas 18% of the respondents had seen this software and 27% did not specify.

Table 5B: Which language do you prefer when talking about computers, English or IsiXhosa?



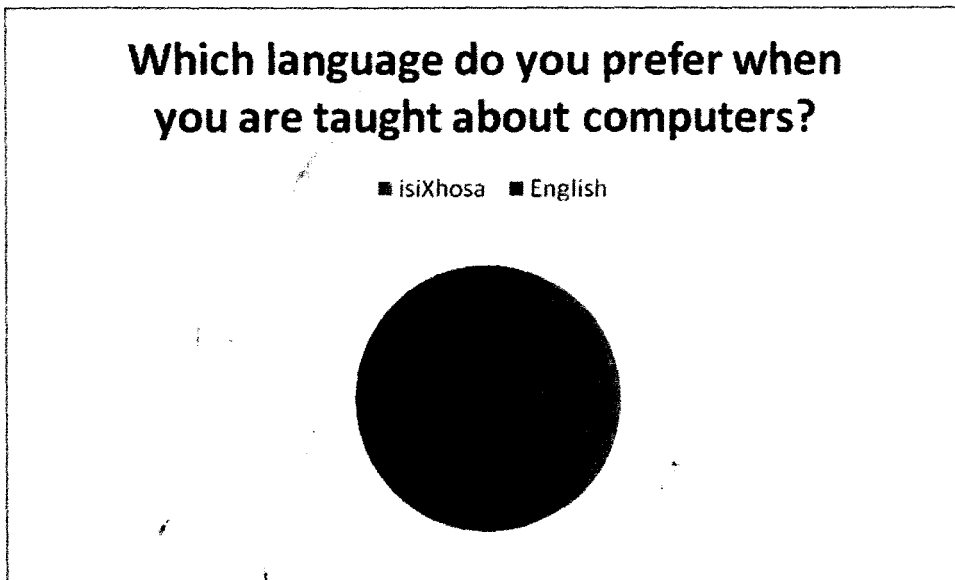
As indicated in Table 5B, the majority (73%) of the respondents preferred to use English when talking about computers. According to my observation, their language preference when talking about computers appeared to be contrary to their classroom interactions. In terms of classroom discussion these students were engaging using isiXhosa. Maybe they were restricted by the fact that I was conducting these lessons using isiXhosa but before the discussion I requested that they could use any language of their preference. Even when they talk with their classmates they would use isiXhosa.

Table 6B: Which language do you prefer when using computers, English or isiXhosa?



The majority of the respondents from this school preferred English when using computers. Table 6 above, indicates that 64% of respondents at Nqabarha preferred English. As indicated in table 4 above that the majority of these students from this school had never seen computer software in their language. This might be the reason why they preferred English when they use computers.

Table 7B: Which language do you prefer when you are taught about computers, English or isiXhosa?



The majority of respondents (as indicated in Table 7B) preferred English. The above table indicates that 55% of the respondents preferred English when they are taught about computers. Despite that the majority from Nqabarha preferred English; the figures did not bear such a big difference. This is indicative that as much as Nqabarha students wanted everything to be conducted in English there are those who believed that teaching in isiXhosa would be useful.

Table 8B: Which computer words do you prefer to use, English or isiXhosa?

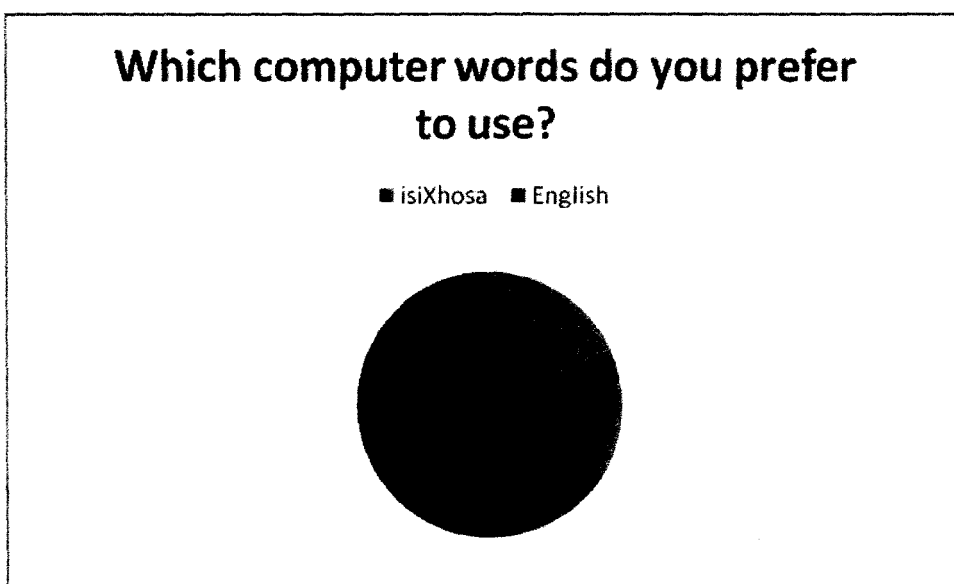


Table 8B above, indicates that 82% of the respondents preferred to use English computer words. During the computer lessons these students were rarely using the isiXhosa computer words. There are some who attempted to use these words but the majority constantly used the English one.

E2) Interviews

This section gives summaries of the group interviews conducted at Nqabarha. From the 11 students who attended the class on the day of conducting the interviews, the researcher randomly chose students to form the focus groups. Each group had approximately 3 students but the fourth one only had 2 students due to the number. These interviews were conducted on the day when students wrote the BCL test and completed questionnaires. This was their last activity for the day. The duration of each interview was approximately 10 minutes and the interviews were carried out in isiXhosa.

Interview question 1: In our discussion prior the teaching of the bilingual computer literacy course, students expressed their views about the use of African languages as languages of learning and teaching (LOLT). This question was aimed at re-emphasising whether they still maintain their views about the use of African languages (isiXhosa in this context) to teach computer studies.

Summarised students' responses: These students firstly stated that isiXhosa is their language. This was mainly to show some ownership of the language. One powerful thing that came up from one of the students of which I was not aware of was the issue of teaching in English whereas the interface was in isiXhosa. She further advocated that it is more meaningful when everything is in the language of tuition. This group of students believed that using both isiXhosa and English would be helpful. For them using both languages would enhance their understanding as they stated that these language can co-operate. They sometimes encounter difficult words in English and vice-versa. Nolubabalo

Hayi mna ndi-understand(e) anga esiXhosa. Alula la wesiXhosa qha kuba siqhele ukuba sifundiswe ngesiNgesi so siye sijonge sona singasijongi isiXhosa. Kodwa alula la wesiXhosa nawesiNgesi.

(I understood isiXhosa. IsiXhosa is easy but because we are mainly exposed to English we tend to focus on English only and ignore isiXhosa. The isiXhosa words were easier than English words.)

In the same group, there was a student who had a different opinion about the usability of these terms. Even though she was also supporting the bilingual education, she emphasised that isiXhosa words are more difficult than English words. She further said that she better understands English than isiXhosa.

Kubalulekile ukuba sifunde nge-English kuba ii-question papers aziphumi ngesiXhosa ziphuma nge-English. Ngoku xa sibhala phaya ziza kuba sibiza ooMiss sicele basicacisele kanti ukuba besifundiswe nge-English basizakuzazela

(It is important that we are taught in English as the question papers are not in isiXhosa they are rather developed in English. It would be problematic for us to ask help from teachers but if we are taught in English we would understand without requiring any assistance.)

To support the above quote, other students stated that they might know other things in isiXhosa but still not know them in English. They said the most important thing for them was to be taught in English. Moreover, the issue of question papers that are available in English and they felt that using isiXhosa would be a challenge as they would have to consult their teachers for help. I then posed a follow-up question to ask if isiXhosa question papers would be developed – would they still prefer to use English. Their response was that this is one and the same thing as they also encountered some complicated words in both languages. The third student preferred to be taught in isiXhosa as she claimed that she experienced a lot of challenges in English.

Interview question 2: This question was based on their daily classroom experiences. Mainly this question was investigating their classroom language experiences. The interviewer was interested to know whether these students usually encountered some difficulties on their learning areas and also to find out how they would tackle and find solutions to those difficult terms.

Summarised students' responses: The answer to this question was the same from all these interviewees. The strange thing is that no one saw this teaching method as a problem to their future. They all agree that their teachers do code switch in their classroom. Despite that a subject is an English oriented field; a teacher would still use isiXhosa extensively. Students mentioned that this would help them understand the English difficult words. The following is the statement extracted from one of the students. This student confirmed that even though

their subjects should be taught in English, their teachers assist them by explaining other stuff in isiXhosa.

Nangona nje izifundo zethu zifundiswa ngesiNgesi, ootitshala baye basicacisele ngesiXhosa. Le nto ibaluncedo kakhulu njengoku iye isinike intsingiselo yamagama esiNgesi.

(Even though our learning areas are conducted in English, our teachers do explain us in isiXhosa. This is helpful as it gives us the meanings of the English words.)

Students referred to this kind of teaching as “mixit”. Mixit is a social network facility where people would chat with their friends over cell phones. This facility allows people to communicate in the language and manner of their choice. By comparing the teaching procedure to the social networking facility these students wanted to show that even though their books are in English their teachers always deliver their lessons in two languages.

Interview question 3: This question was specifically on the usability of the Bilingual Computer Literacy material. It was investigating some of the challenges and advantages introduced by this course material. The question was aiming at putting on the table some of the terms that were easily understood or confused or not convenient for students. Students had to tell which words they preferred to use and why. If possible, a student would specifically give the actual term or tell which language terms (either English or isiXhosa) were difficult to use.

Summarised students' responses: It was awful and sad to hear students claiming that they can't read their language. Some of these students confidently said that they can't read isiXhosa. This is a very complicated case as these students are in deep rural areas and in schools that offer isiXhosa as the first language. They advocated that it takes time for them to read isiXhosa sentences. In many instances, this mainly results from language negligence. In other schools students are not trained to be sufficiently proficient in their language. Places such as rural areas are regarded as places where cultures and languages are still preserved and respected.

Some of these students supported the use of isiXhosa but it was strange enough to realise that the very same student who advocated for isiXhosa never read the isiXhosa version. They claimed that there are difficult words in isiXhosa. When I requested them to list some of the difficult words they failed to do so. As some of these students stated that in the BCL material

they only understood English others emphasised that isiXhosa was helpful for them. A typical example would be the following student, Anathi. When she read the BCL course she mainly started on the English version but she could hardly understand then she decided to refer to the isiXhosa version. IsiXhosa helped her to understand some of the computer terms.

Bendifunda nge-English ndiphinde ndiyikrobe ukuba ngesiXhosa ithini. Ndithe xa ndifunda i-English andaqonda kakuhle ndaze ndathi ndokufunda isiXhosa atsho avakala la magama.

(I was reading English and then check the isiXhosa version. When I was reading the English version I would hardly understand but it was better when I read isiXhosa, I could understand some of the words.)

Some of these students never read the booklet at all. Even though they did not read the booklet, some of them still stated in summary:

(If you could be told that a CPU is “ingqondo yekhomyutha” in isiXhosa, would you forget this word? No we wouldn't. What is isichwethezi? I only study isiXhosa as I am obliged to do so otherwise I wouldn't take an isiXhosa subject. IsiXhosa sinzima. I never read this booklet before, I just came to write. When I read isiXhosa paragraphs I forget what I read in the previous sentence. I read both English and isiXhosa. I never encountered problems in both languages. If I didn't understand a word in English, I would refer to the isiXhosa version, vice versa. There are words that are clear in English and vice versa.)

Interview question 4: It was based on the language they chose to fill in the questionnaires and also to give reasons for their choice.

Summarised students' responses: There were four focus groups to interview. I divided these students into 3 per group, but because of the number the last group had 2 interviewees. In the first group 2 out of 3 interviewees answered the English questionnaire. Their primary reason was that they felt like using English. One of the student claimed that she chose English because there words she would not remember in isiXhosa. All of the interviewees in the second group stated that they filled in the questionnaires using isiXhosa. Another student from this group said she did not understand other English words but when she turned into isiXhosa she could understand all the questions. Others advocated that isiXhosa is easy and that for them was a big advantage. One would realise that some of the students who strongly

condemned the use of isiXhosa for teaching and learning chose to fill in the question using isiXhosa. Their reason for this choice was that it would not consume their time to answer in isiXhosa as they do not have to think. They just read the question and just give an answer. This showed that they understand isiXhosa without any assistance whereas if they chose the English questionnaire they might come across difficult words.

5.3.3 IsiXhosa ICT terminology implementation at Grahamstown

5.3.3.1 Grahamstown: Case study 2

Grahamstown is a city in the Eastern Cape Province of the Republic of South Africa. The population of this city comprises of black, coloured, white people. The majority of this population are black people and specifically isiXhosa speakers. A considerable influx of Black people in this city comes from the former and nearby Ciskei homeland. Nearby the city of Grahamstown, there are township areas and that's where the majority of black people reside. Grahamstown is regarded as the city of saints and scholars because of many churches and schools as well as Rhodes University. The great majority of black people in this area work at this university. This city is home to several institutes, most importantly the South African National Library for the Blind, the National English Literary Museum, the South African Institute for Aquatic Biodiversity (formerly the JLB Smith Institute), the International Library for African Music (ILAM), and the Institute for the Study of English in Africa.

It is a relatively small city. In terms of the geographical perspective, the townships are very much close to the city (Wikipedia.org). Most of the characteristics mentioned above have an influence in terms of the language proficiency. The current research is undertaken in the township high schools. These are the previously disadvantaged government schools.

5.3.3.2 E-Yethu project (CM Vellem J.S.S and Nombulelo H.S)

At Grahamstown the two schools that formed part of my case studies were CM Vellem Junior Secondary School and Nombulelo High School. Both these schools were part of the e-Yethu project in Grahamstown. The process of organising computer literacy lessons with these schools was not complicated. I was quite fortunate that I organised these lessons with the teachers I assisted and tutored in the ACE ICT programme in the Department of Education at Rhodes University. In their schools, some of these teachers were responsible for computer literacy. They also assisted me in organising students to attend the BCL course. Moreover,

this facilitated smooth negotiations in the sense that I worked collaboratively with teachers in communicating with the principals. The principals were overwhelmed by this idea.

At CM Vellem, the principal, before commencing with the course, applauded and encouraged me for taking an initiative of conducting these lessons. She claimed that as much as I was doing the research but this was going to be beneficiary for their school pupils. At Nombulelo, when I introduced this idea of conducting a computer literacy course to the Grade 10 pupils, other teachers raised some of the Grade 12 students' complaints that they also wished to attend a computer literacy course before leaving their high school. This led to discussions and plans, among teachers, of offering computer literacy courses to different Grades starting from 2010. Their principal requested teachers to think about ways of integrating computer literacy courses in their 2010 curriculum. He said that this will be crucial in preparing students for tertiary education. By mentioning these principals' reactions and impressions, I was trying to show the extent at which this course raised issues around the importance of conducting computer literacy at these schools. When computer labs were built in these schools, the school teachers never improvised means to fully utilise these computer labs. When I investigated from the students about their lab access, they informed me that they only visited the labs when they were supposed to do a research on a particular learning area. In these schools, you would realise that there are teachers assigned to be responsible for computer lessons but they don't organise them prematurely.

After the principals agreed that I could conduct a BLC course in these schools, I indulged in a mission of finding out whether the suitable software for this course had been installed. I started with Nombulelo High School. This school had brand new flat screen computers which had been recently installed. All these computers were running in Windows XP operating system. The first thing I did was to install OpenOffice.org (Microsoft Office) and Firefox (equivalent to Internet Explorer). Their computer lab had about 30 brand new personal computers. Moreover, they also had a projector and built-in screen in order to enhance the demonstration when teaching.

CM Vellem Junior Secondary School had about 20 old personal computers. When I informally spoke with the principal, she said they were still expecting new computers to be donated. The majority of these computers were installed Ubuntu as an operating system. Out of those 20 computers approximately 5 of them were working properly. Three out of those computers were running with Microsoft Windows operating system. In terms of their

specifications, they had very poor capacity and memory to install any kind of software. I attempted to install OpenOffice.org but I could only manage to do so in one computer. Others would just be frozen or not detect the memory stick. I decided to carry on with those few computers. The Grade 9 class had about 30 students and they were all keen to attend this course. This led to a situation where at least 6 students had to share a computer. Because that this course was voluntarily, I thought the numbers of students would drop to allow few students sharing a computer but the students kept on coming in big numbers. Moreover, at this school they did not have the equipment for demonstration. This absolutely posed some challenges in terms of demonstration as I had to demonstrate on one of the computers.

5.3.3.3 Case study 2A: CM Junior Secondary School

CM Vellem forms part of the Grahamstown schools that are involved in the e-Yethu ICT4D project. This was the primary reason I had to choose it as one of the case studies. Moreover, because of this project this school had working relations with Rhodes University. The other reason that motivated my choice was the fact that I worked or assisted some of the teachers who were studying in the ACE ICT programme at Rhodes. These teachers came from different schools in Grahamstown; specifically others were from CM Vellem. These were a couple of reasons that made negotiations with the teachers to run smoothly. Even the CM Vellem principal was never difficult in giving us a permission of conducting these computer lessons.

In terms of the research sampling, I was hoping to utilise Grade 10 pupils. Unfortunately, at CM Vellem as the highest level was Grade 9. This did not appear to be a problem as Grade 9 was not that far from the desired grade. The four teachers (from CM Vellem) who were attending the ACE ICT programme assisted me in organising the computer lessons. This involved the issue of organising students and their suitable contact times. Our classes were running during break time or after school hours. From the Grade 9 class, it was 27 pupils who attended this course.

A3) Students views on African Languages as LoLT

The following section presents and analyses the CM Vellem students' views on the use of African Languages as LoLT. Their views were specifically on the use of isiXhosa to teach and learn computer studies. Ideally, this discussion was supposed to be recorded by using an

audio recording device but unfortunately the device was malfunctioning. Despite that the device could not work, I jotted down some of the important point raised by these students.

The discussion at this school was not flowing at all. Students were not co-operating at all. Not that they had no views but they were just reluctant. At some point I had to be patient with them. Those who finally expressed their views did not give a substantial response. As much as they raised quite interesting and important aspects they never dwell much by motivating their statements.

Some supported the use of African Languages and others were against the idea. They raised the usual challenges associated with the use of these languages. These challenges involved the view that there will be less job opportunities. They further motivated this by saying that most of the job interviews are conducted in English. Some of them would just say they prefer to be taught in English but they never dwell much in details. The below statement was extracted from one of the students who strongly disagree with the use of isiXhosa as the LoLT.

Mna ndithi makungafundiswa ngesiXhosa kuba asizokufumana misebenzi. Mna andisixhasi isiXhosa kwaphela. Ii-interview zemisebenzi ezininzi zenziwa nge-English soze ufane ubone umlungu esenza ii-interview ngesiXhosa.

(I am saying that there should not be any teaching in isiXhosa as we won't be able to get employment. I am completely against the use of isiXhosa. Most of the job interviews are conducted in English, you would never see a white person interviewing in isiXhosa.)

More than anything else, it was clear that students saw English as the language that will improve their lives. English imperialism continued to discourage students the right to see their language as the tool they can use to improve their social and economic status.

Those who supported the use of their language were much concerned about their identity. They stated that it is a shame to have isiXhosa speakers who travel to other provinces (an example Gauteng) and when they come back they cannot speak their language. They felt that this might kill the language. They advocated that to preserve the language it should be actively used in teaching almost everything in schools.

Ndinga ukuba kubalulekile ukuba silusebenzise ulwimi lwethu. Abanye abantu bathi xa behambele, mhlawumbi ngeemeko zesikolo, kwezinye ii-province ezifana naseRhawutini babuye bengakwazi ukuthetha isiXhosa. Ke mna ndithi isiXhosa masifundiswe nakwesiphi na isifundo ukwenzela ukuba abantu bangalahlekani nolwimi lwabo.

(I think it is important to use our language. Other people tend to forget their language especially when they spend time, maybe for academic purposes, in provinces such as Gauteng and you find out that they fail to speak isiXhosa when they come home. I fully support the use of isiXhosa in any learning area in order to preserve our language.)

Despite that students did not dwell much in explaining their views this activity took sometime in this school. Other students would just raise hands merely to state that they agree with their classmates. To a great extent this discussion revealed that these students were usually not actively involved in the teaching. Some of them would wish to say something but because they are not trained for class participation they would reserve their comments.

B3) Evaluation of terminology comprehensibility

This exercise at CM Vellem was not successful. In this school we were utilising the break time for the course. On the first day after we had discussions on the importance of African Languages as LoLT I distributed the BCL booklets. This had an influence in terms of the exercise as its aim was to evaluate the students' unaided understanding of the terms before they could even be taught about the terms. When I gave them the exercise, both of these groups used the BCL booklet to browse the terms. This was totally contrary to the original idea. Moreover, these students instead of defining terms they just gave equivalents. Due to time constraints, instead of giving each group 10 terms I reduced them to 5. This didn't make any difference as they took the whole period discussing these terms only to find out that they were extracting some equivalents from the BCL booklet. In short, this exercise did not serve its purpose at this school.

C3) Teaching and Assessment of the Bilingual Computer Literacy course

Students at CM Vellem were very much surprised seeing computer material in isiXhosa. Despite that their expression had a negative connotation toward the material. Their gestures and body language expressed the perceived difficulty of using isiXhosa material. This

attitude also surfaced when they heard that some of the computers had an isiXhosa interface. There is another group of students who just could not hide their views about this interface. They were thankful that they were not sitting with a computer with such interface. Some of them verbally confirmed their attitude in the interviews by saying that they never ever read the isiXhosa version. Further reasons for their attitudes are discussed in the section about the interviews. I allowed the class to be relaxed and open for any discussions. I always encouraged them to ask questions and participate in the classroom discussion but this was not imposed to them. I avoided making those who were not participating feel inferior. The students were getting to understand me and the discussions were becoming smooth.

One day, when I was still teaching I asked them to reflect on the course so far. There was this student who boldly expressed that she was not satisfied with the course as it did not offer or run as she expected. Her argument was that there was a lot of talking more than the practical work. Before I could respond, her classmates came into my rescue claiming that there is no need to proceed with the practical work whereas there are students who are left behind. They claimed that the theory informs the practical work. The discussion heated up with students debating rationally. The highlight of this discussion was that it was mainly in English. Bear in mind that this was a Grade 9 class from CM Vellem. Their enthusiasm of speaking English informed me of how much they are dedicated to be fluent in English. When I looked back to the discussion we had which was about the importance of using African languages to teach computers, in that discussion these students were reserved. Maybe at that time they were not comfortable in expressing their opinions especially that some of them were against the use of African languages. It might happen that students thought that I was there to promote the use of African languages in a very subjective manner whereas I went there as a researcher. I emphasised the importance of their views. I encouraged them to express their views without any fear of failure or intellectual judgement.

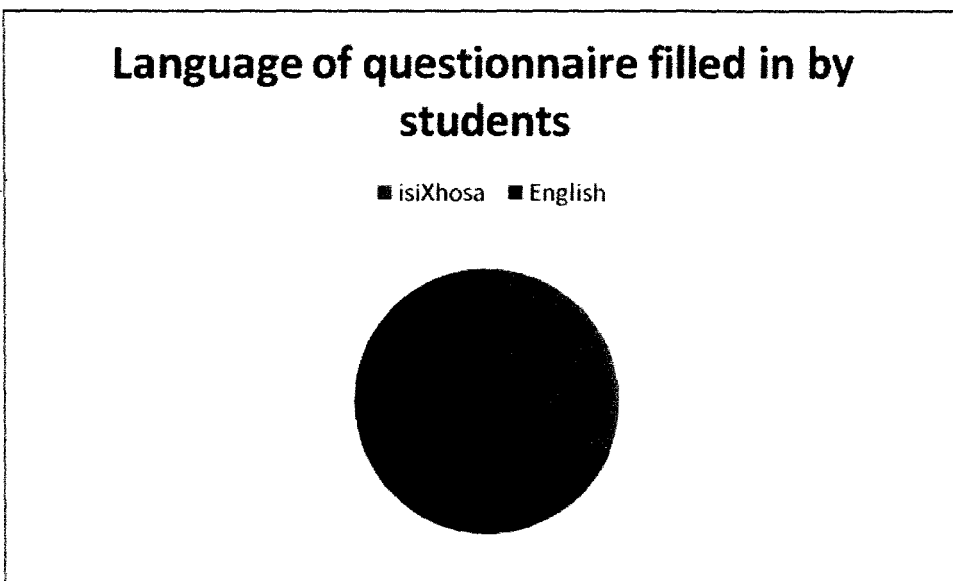
In terms of the test results, due to the time constraints, at CM Vellem the test was going to be written during the break. According to my predictions, the test duration would be one and a half hours or more. This was our last slot and students had to write a test. This meant that they had to write in either isiXhosa or English. A mistake I made was to request them to write the isiXhosa test instead of allowing them to choose a language of their choice. This had an influence to their performance. As much as I did not know how they would perform if they would choose English but in their scripts they revealed that they prepared themselves for the English test rather than a bilingual test. This came up in the interviews that they never read

the isiXhosa version of the BCL booklet. Their test marks were very poor and some of them mixed isiXhosa with English.

D3) Questionnaires

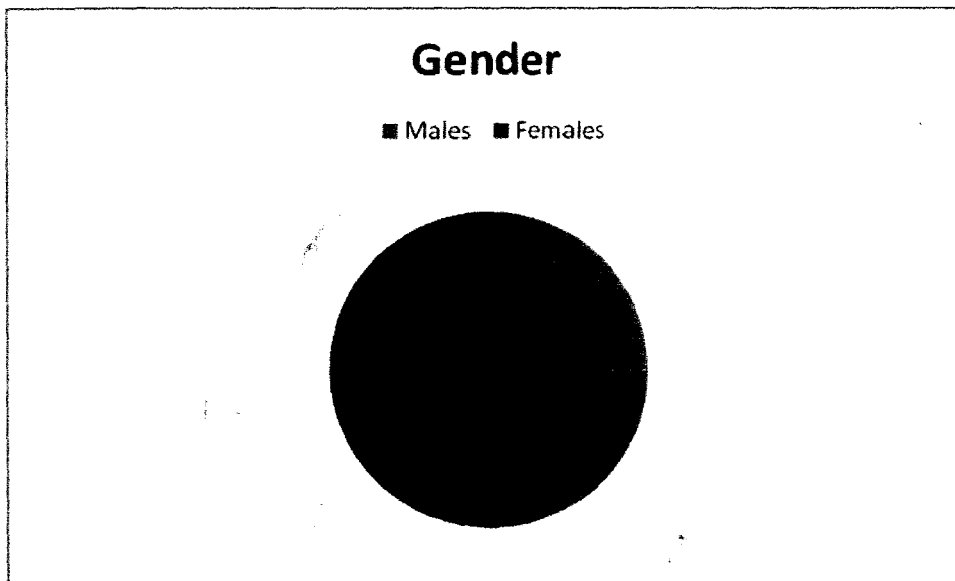
This section presents a descriptive and interpretive account of the questionnaires administered at CM Vellem. As I did not have adequate classes at this school I then requested their class teacher to distribute questionnaires in her classroom. In the beginning of the BCL course, at CM Vellem we had 27 students and their teacher distributed 27 questionnaires. Out of 27 questionnaires 16 were returned. The following section presents and describes the data collected from these schools.

Table 1: Language of questionnaire filled in by students



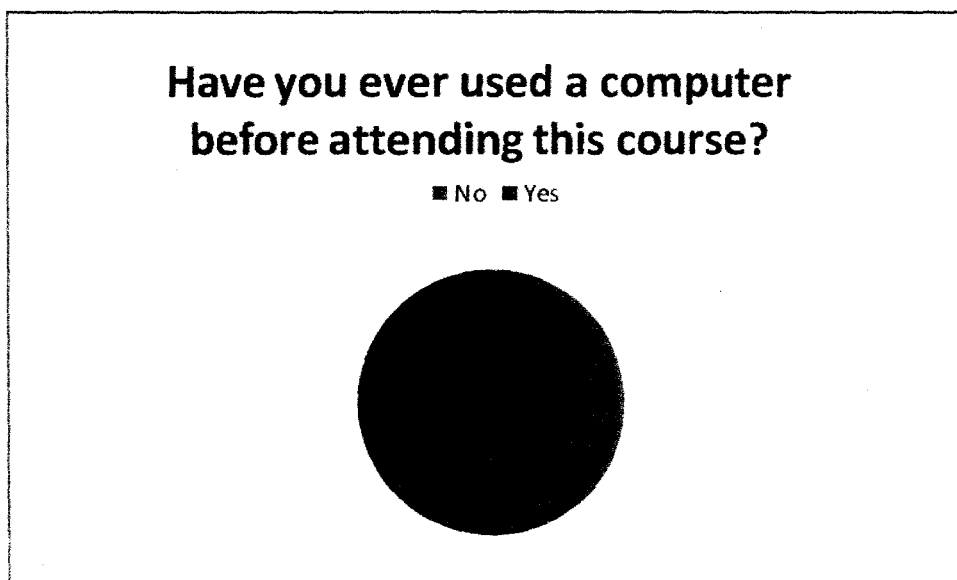
As indicated in figure 1A above, at CM Vellem 69% of the students filled in the English version of the questionnaire while 31% filled in the isiXhosa version. This indicates that the majority of students were more comfortable to use English than isiXhosa, in terms of filling in a questionnaire.

Table 2: Gender



The figure 2 above indicates the gender details of the students who filled in the questionnaires at CM Vellem. At CM Vellem, 75% of the students who filled in the questionnaires comprised of females. In this school females were very much interested and actively involved during the lessons.

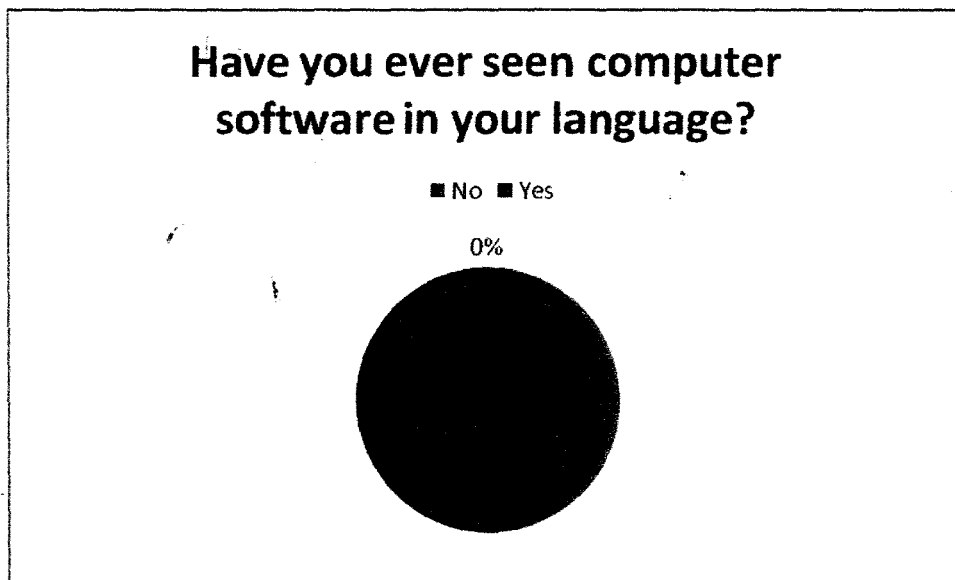
Table 3: Have you ever used a computer before attending this course?



This course was mainly aimed at students who never used computers before. Indeed in this school the majority of students who participated claimed that they never got an opportunity to

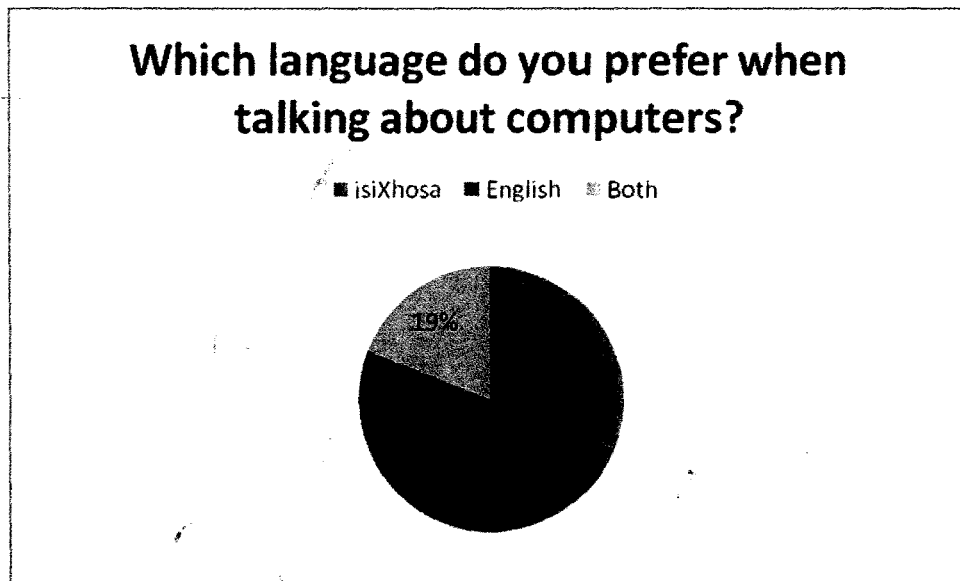
use computers. As indicated in Table 3, the majority (i.e. 81%) of the Grade 9 students at CM Vellem had never been introduced to computers. In my informal conversations with students, some of them mentioned that they usually get exercises that required them to search for the information from the internet. I assumed that the minority of students who stated that they have used computers before referred to these school exercises.

Table 4: Have you ever seen computer software in your language (i.e. Linux, Firefox, OpenOffice, etc) with the menus in your language



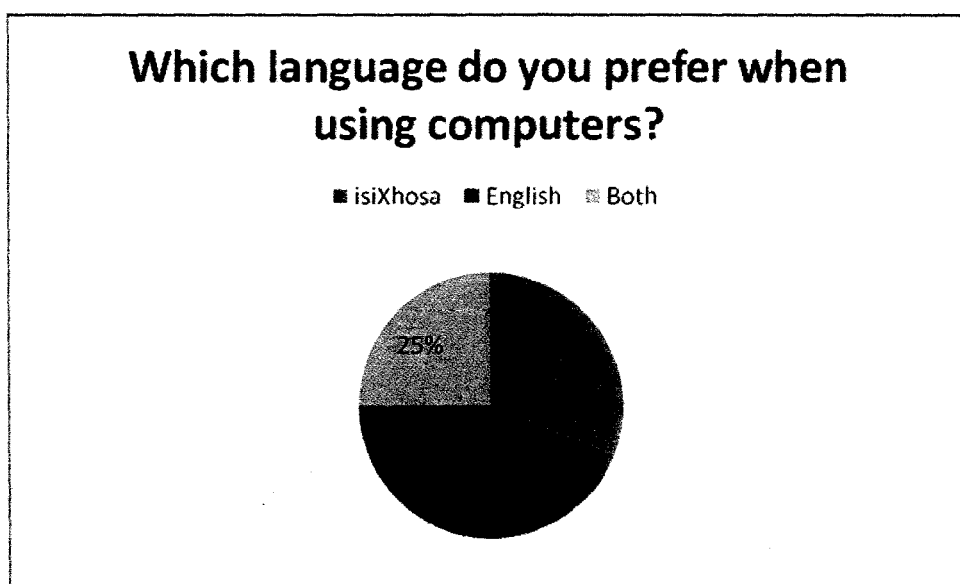
As Table 4 above illustrates that the majority all of these students, before the bilingual computer literacy course, had not seen computer software developed in their home languages. This figure indicates that 100% of the CM Vellem respondents never saw computer software in their language. This shows the lack of awareness about the software localised into African languages. Despite the technical challenges in terms of localising all computers in these schools, students had an opportunity to see software developed in their language.

Table 5: Which language do you prefer when talking about computers, English or isiXhosa?



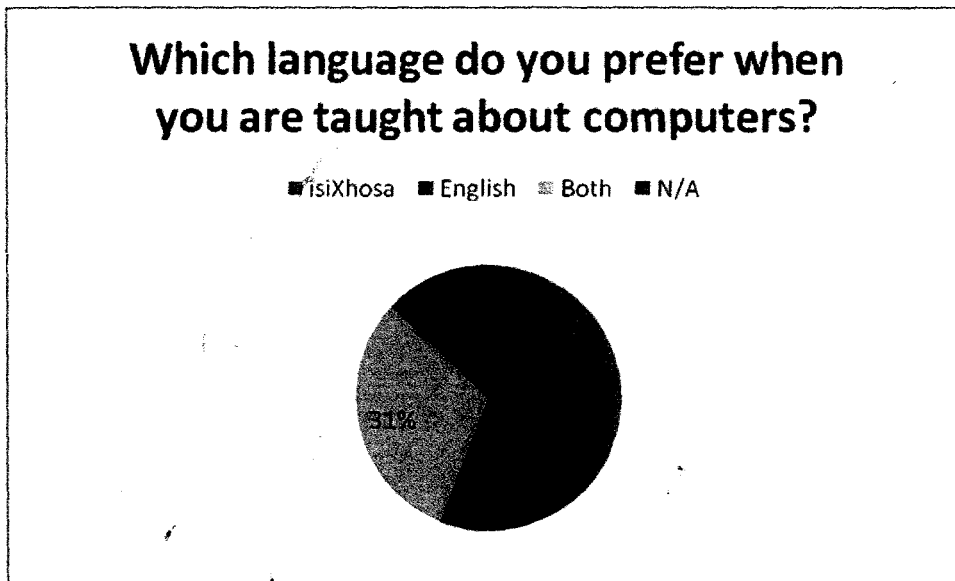
The above question (Table 5) had only allowed respondents to choose from two options, i.e. English or isiXhosa. Despite these options, respondents from both this school felt that this question restricted them from expressing their preference. They rather created a third option which is both. As indicated in Table 6A, 50% of the respondents from CM Vellem preferred talking about computers using English, 31% chose isiXhosa and the rest (19%) opted for both.

Table 6: Which language do you prefer when using computers, English or isiXhosa?



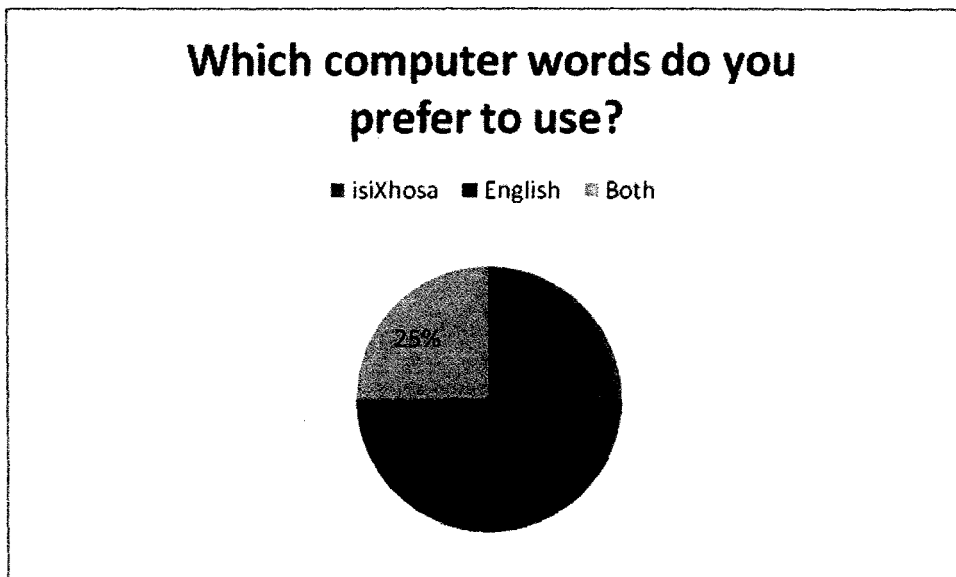
The majority of these respondents from this school preferred English when using computers.

Table 7: Which language do you prefer when you are taught about computers, English or isiXhosa?



As complicated as it has been demonstrated in Table 7 above, with equal percentage the majority of students chose to be taught in isiXhosa and others said both.

Table 8: Which computer words do you prefer to use, English or isiXhosa?



The majority (as indicated in Table 8) of respondents with 50% at CM Vellem preferred to use English computer words.

E3) Interviews

This section presents a summarised version of the interviews conducted at CM Vellem. With this school I conducted interviews to 17 students. These were semi-structured focus group interviews. From the 17 students who attended the class on the day of conducting the interviews, the researcher randomly chose students to form the focus groups. Each group had approximately 6 students but the third one only had 5 students due to the number. The reason for choosing many students per group was to speed up the process. These interviews were conducted after the BCL lesson which took place after school. The researcher was concerned that students would panic and leave before they would attend their interviews if I would have made smaller and many groups. The duration of each interview was approximately 10 minutes and the interviews were carried out in isiXhosa. In each group there were many females comparable to males.

Interview question 1: In our discussion prior the teaching of the bilingual computer literacy course, students expressed their views about the use of African languages as languages of learning and teaching (LOLT). This question was aimed at re-emphasising whether they still maintain their views about the use of African languages (isiXhosa in this context) to teach computer studies.

Summarised students' responses: Most of the concerns raised by these students were similar to those which emerged from the previous schools. This issue of lack of employment if African languages could be used prevailed. These views came from students who strongly believed that isiXhosa would not be a good idea for teaching fields such as Science and Technology.

There are students who supported both isiXhosa and English. Their argument was that they sometimes face difficulties in understanding English. They advocated that it is always useful to have isiXhosa alongside English. Others stated that English is the language of access and isiXhosa is their mother tongue.

Interview question 2: This question was based on their daily classroom experiences. Mainly this question was investigating their classroom language experiences. The interviewer was interested to know whether these students usually encountered some difficulties on their learning areas and also to find out how they would tackle and find solutions to those difficult terms.

Summarised students' responses: They all agreed that in their classrooms teachers use a lot of code switching. This teaching would mainly run in isiXhosa. Students believed that this was useful for their understanding.

Interview question 3: This question was specifically on the usability of the Bilingual Computer Literacy material. It was investigating some of the challenges and advantages introduced by this course material. The question was aiming at putting on the table some of the terms that were easily understood or confused or not convenient for students. Students had to tell which words they preferred to use and why. If possible, a student would specifically give the actual term or tell which language terms (either English or isiXhosa) were difficult to use.

Summarised students' responses: One would realise that these students were not that serious about this material. One of them did not bother when her course booklet was wet due to rain she just kept quiet and never reported. She only told me about this during the interviews when I asked whether they ever read the booklet. Because that this course was not part of their curriculum they did not even stress to read. Some of them claimed that they did read the booklet despite that they could not remember or explain the sections they read.

Interview question 4: It was based on the language they chose to fill in the questionnaires and also to give reasons for their choice.

Summarised students' responses: Those who filled the questionnaires using isiXhosa believed that it was easy for them to do so. They did not have to spend a lot of time reading and answering a question. Some of them claimed that isiXhosa words were difficult to understand. They said that it took time to read isiXhosa sentences as they are not used to reading the language

5.3.3.4 Case study 2B: Nombulelo High School

Nombulelo seems to be the best school among township schools in Grahamstown. In terms of English, they also had teachers who are non-isiXhosa speaker. This helped them to improve their English proficiency. In their discussions they liked expressing themselves in English, even outside the classroom when they informally had conversations; they would sometimes speak English only. In comparison with the schools in Transkei, the grade 10 class of Nombulelo seemed to be more vibrant than the grade 11 class from Dwesa.

They only used computers to search for information as part of their school subjects. They were not taught properly, their teachers just showed them how they could use the internet to search for information.

A4) Students views on African Languages as LoLT

The following section presents and analyses students' views about the use of African languages as LoLT. In this discussion, the Grade 10 pupils from Nombulelo H.S. reflected their views, specifically, about the issue of using isiXhosa to teach fields such as computer studies. The following are summaries from the students' classroom discussions. These students were asked the very same question as other schools i.e. what are their views about learning computers in their language (isiXhosa in this context).

Firstly, I was amazed by the way these students spoke English when they had their informal conversations. Comparable to the time I was still doing Grade 10 my English proficiency was not at that level. I suspect that their English proficiency was mainly improved by diversity among teachers. In this school there are teachers who are non-isiXhosa speakers. Other students would completely express their views in English. Whenever they say something, they would hardly finish a sentence without using English. Due to what I had observed I thought that the majority of these students would merely support English. The results were contrary to my presumptions as it was approximately 50% of the class which was supportive.

As much as they did not come up with a lot of new opinions comparably to the previous groups I discussed. The first thing that was a highlight in the discussion is their point of view. These students stated that there is a lack of experienced isiXhosa practitioners. They particularly meant that there is a lack of translators. Some of those who did not support the use of isiXhosa believed that it would be difficult to translate from isiXhosa into English. They claimed that if an isiXhosa speaker cannot understand something explained in isiXhosa there is no way they would understand. To substantiate their argument they used isiXhosa proverb which says "isiXhosa asitolikwa" which literally means "isiXhosa cannot be interpreted". The actual meaning of this proverb is that isiXhosa speaker should easily understand anything said in their language. There are things that could be expressed in isiXhosa in a metaphoric manner of which you cannot give an English equivalent. They further advocated that it is better to translate from English into isiXhosa. For an example, if you do not understand some English words you can then be explained in isiXhosa. From my point of view, this student believed that isiXhosa would be used to help people understand

English. They began their discussion by claiming that they were against the use of isiXhosa but this appeared to be supportive of isiXhosa in order to facilitate understanding.

There are students who felt that there is a need to use isiXhosa in their classrooms. They argued that this would help some of the students who are faced with difficulties when taught in English. They further stated that sometimes in their classrooms they ask their teachers' help when they cannot understand difficult words.

Other students raised the issue of job opportunities. They believed that studying in isiXhosa will disadvantage them from getting better jobs. They claimed that there is no employment offered in isiXhosa.

isichwethezi ukuchwetheza, from the students' point-of view this means to type

B4) Evaluation of terminology comprehensibility

I conducted the very same activity at Nombulelo High School as well. I gave these students 10 terms per group as our class duration was about an hour. Also these students took their time but I had to make sure that they were not writing equivalents rather giving definitions. One of the groups at this school managed to complete only three terms. Their approach was that if they don't know or not sure about something they would not write it down. They did not just express their views about the way they understood each term. They referred to internet as *Izikhuphi-nkcukacha kwikhompyutha* (i.e. Output Devices). Instead of thinking of *Izikhuphi-nkcukacha kwikhompyutha* as tangible components of a computer they rather thought of something that could be used to access information. This, to a certain extent, was similar to the definition given by the second group. They referred to *ingqondo yekhompyutha* (i.e. CPU) as something that stores information instead of processing. They further said that in English *ingqondo yekhompyutha* is harddrive because it stores everything in the computer. Rather than perceiving it as an abstract term they regarded it as a storage device. I guess they treated "brain" as a place where secrets are kept rather than approaching it from a biological point of view. The role it (the brain) plays to communicate with other body and ensure that they function properly. The second term that they gave a different yet interesting definition is scanner. They referred to a scanner as something that searches for viruses in a computer. I think they thought of this device as a Doctor's scanner when they scan/search for an infection. This showed that exposure is the most important thing in improving our knowledge. The last aspect to discuss is their view about the Central Processing Unit. As much as they could not

clearly explain this to me, they considered CPU as the “enter” keyboard button. They claimed that you press this key whenever you finished with what you were typing. CPU to them meant you process your information using the enter button hence it is called a Central Processing Unit.

The above discussion showed that these terms, to students, were not precisely reflecting their functions. Students might understand the meaning of a term from a language point of view but when it comes to their roles/functions in computers, they mean the opposite. The isiXhosa version of CPU (i.e. *ingqondo yekhompyutha*) to students it sounded more like a memory place or storage device.

C4) Teaching and Assessment of the Bilingual Computer Literacy course

At Nombulelo the teaching was running smoothly. The classes were running after school for an hour. The student numbers dropped from 27 to 24. This was not bad because they were attending this course voluntarily and moreover after school. This revealed the students' interest in acquiring computer knowledge. After the lessons others would stay behind, some for games and other finishing up what was taught in the lesson. This on its own showed how committed and mature were these Grade 10 students. In both these schools, the active participants were females. At CM Vellem it was female students who started and heated-up a debate. At Nombulelo, the 3 students who dropped out from the course were males and after that the class only comprised of females.

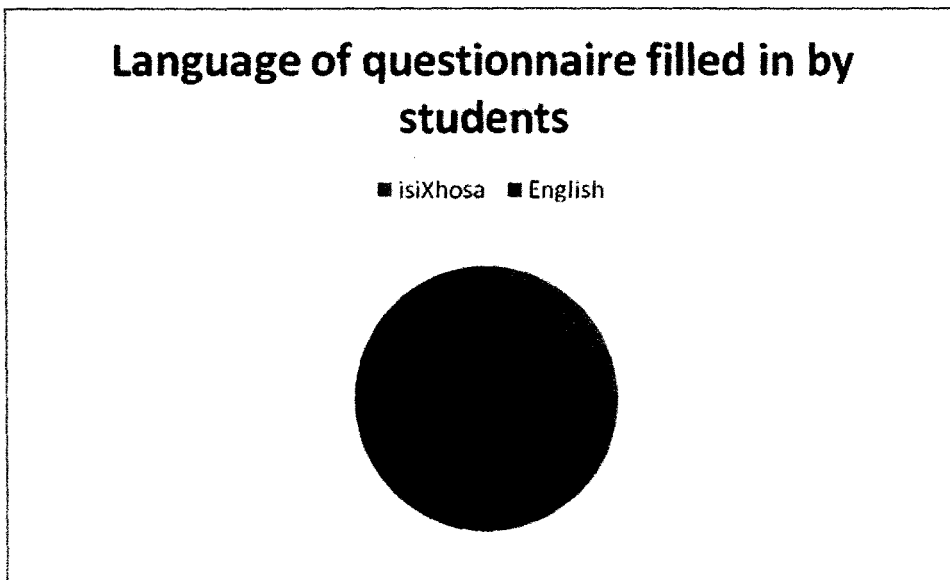
With Nombulelo High School, despite that it is a few of them who managed to write but their marks were balanced. Their results were balanced in the sense that they studied both isiXhosa and English. If a student got a higher mark in isiXhosa than English or vice versa that did not really have something to do with their attitude. This would result from the fact that a student would forget terms for either isiXhosa or English and another factor was that some of them would never compare their answers or else they were doubtful. At some point you would find out that a student gave a correct answer for the English question and a wrong one for isiXhosa and vice versa. The terms that they would remember easily are the English terms. The one thing they did for other isiXhosa terms was to use or make them borrowings. Instead of using the translated version (i.e. *isishicileli*) of the term printer they would use a borrowing such as “*iprinta*”. This was abundant in the sense that they also used borrowings for terms that were never taught as borrowings, terms such as a keyboard became “*ikhibhodi*”. To a great extent, it was evident that these students could easily remember the English terms. From

their test scripts one could tell that these students dedicated sometime to read both isiXhosa and English versions of the bilingual material. This was the only group which was prepared for the test.

D4) Questionnaires

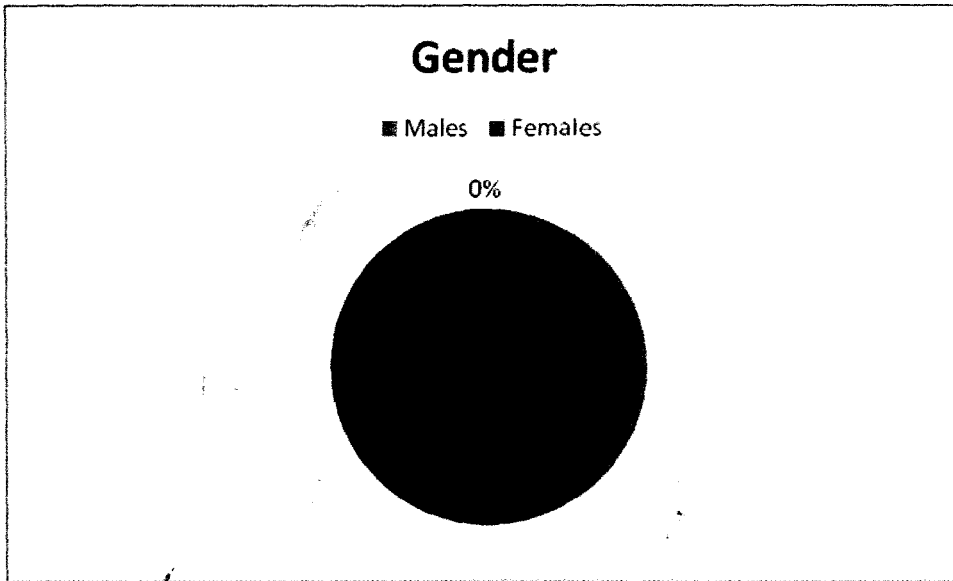
This section presents a descriptive and interpretive account of the questionnaires administered in the two schools based in Grahamstown. The questionnaires were distributed and administered in different dates. The questionnaires were administered as follows, at CM Vellem I requested their class teacher to distribute them in the class and at Nombulelo I distributed them in November. In the beginning of the BCL course, at CM Vellem we had 27 students and their teacher distributed 27 questionnaires. Out of 27 questionnaires 16 were returned. At Nombulelo we started with 27 students as well and only 11 wrote a test and filled in questionnaires. The following section presents and describes the data collected from these schools.

Table 1: Language of questionnaire filled in by students



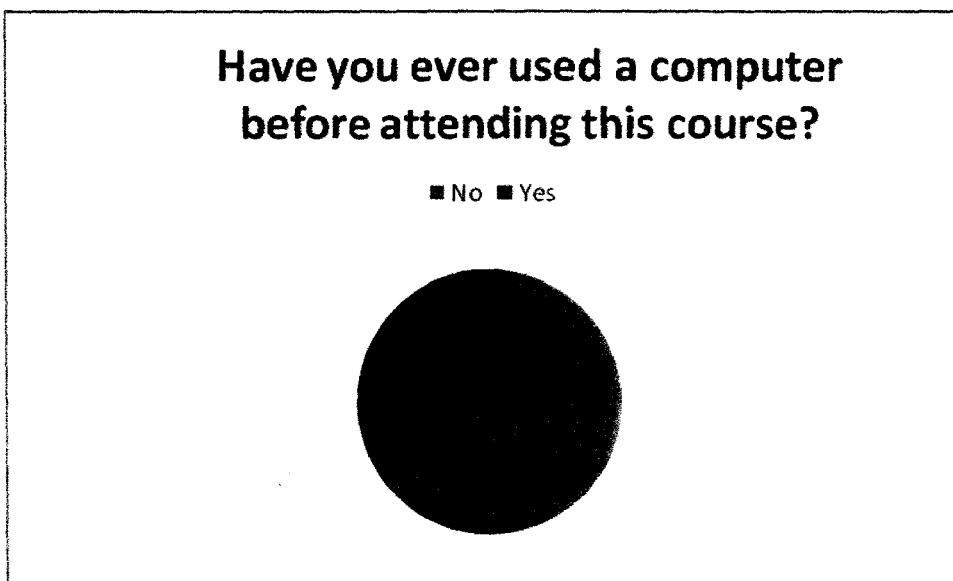
As indicated in figure 1 above, at Nombulelo 82% of the students filled in the English version of the questionnaire while 18% filled in the isiXhosa version. The majority of students at Nombulelo were more comfortable to use English than isiXhosa, in terms of filling in a questionnaire.

Table 2: Gender



The figure 2 above indicates the gender details of the students who filled in the questionnaires at Nombulelo. 100% of the students who filled in the questionnaires were females. It was only females who were attending this course after a group of males dropped out after their first day. These female students were committed to attend this course. They were flexible in term of our schedules. Sometimes our class would start late due to their school curriculum but that never discouraged them from attending.

Table 3: Have you ever used a computer before attending this course?



This course was mainly aimed at students who never used computers before. Indeed in this school the majority of students who participated claimed that they never got an opportunity to use computers. As indicated in Table 3, the majority (i.e. 64%) of students had never been introduced to computers. In my informal conversations with students, some of them mentioned that they usually had exercises that required them to search for the information from the internet. The minority of students who stated that they have used computers before referred to these school exercises.

4: Have you ever seen computer software in your language (i.e. Linux, Firefox, OpenOffice, etc with the menus in your language

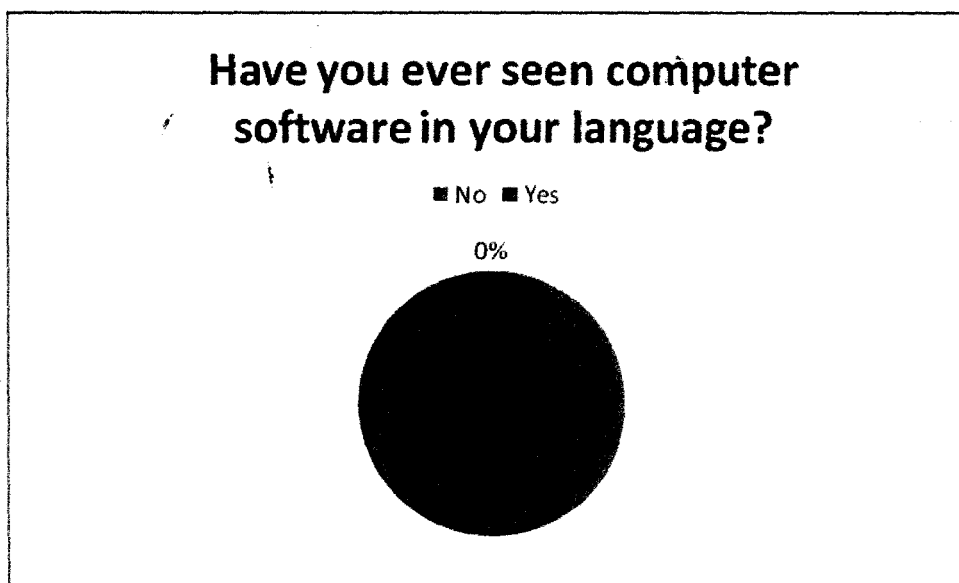
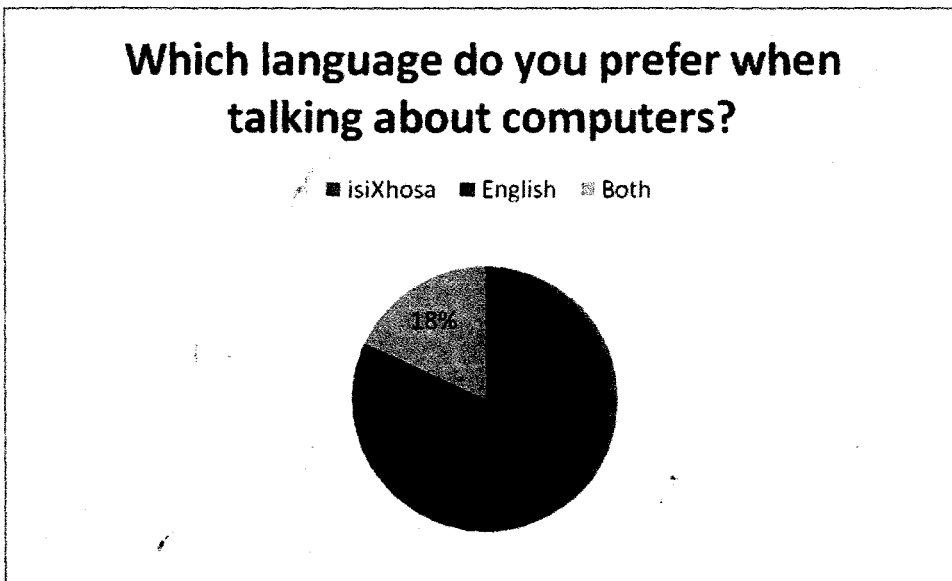


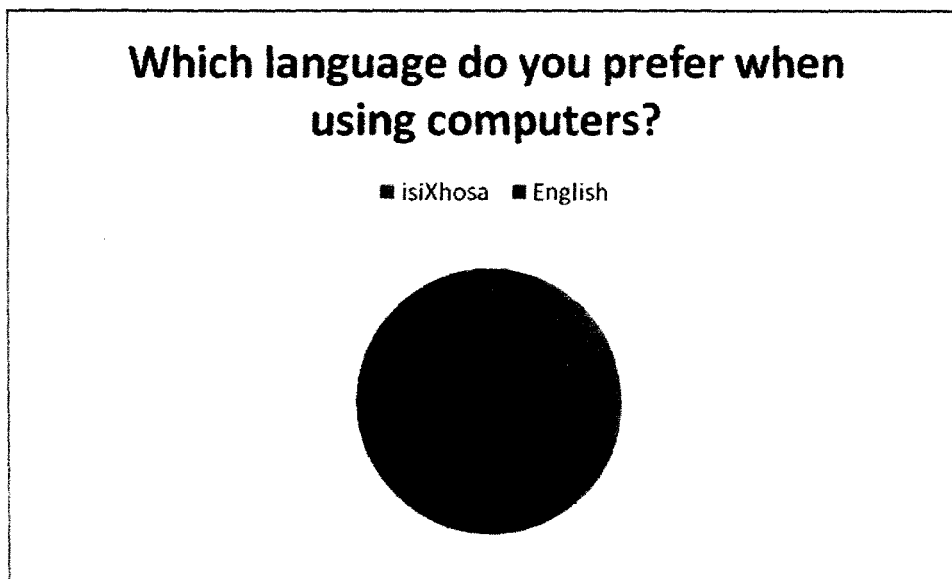
Table 4 above illustrates that all of these students, before the bilingual computer literacy course, had not seen computer software developed in their home languages. This shows the lack of awareness about the software localised into African languages. Despite the technical challenges in terms of localising all computers in these schools, students had an opportunity to see software developed in their language.

Table 5: Which language do you prefer when talking about computers, English or isiXhosa?



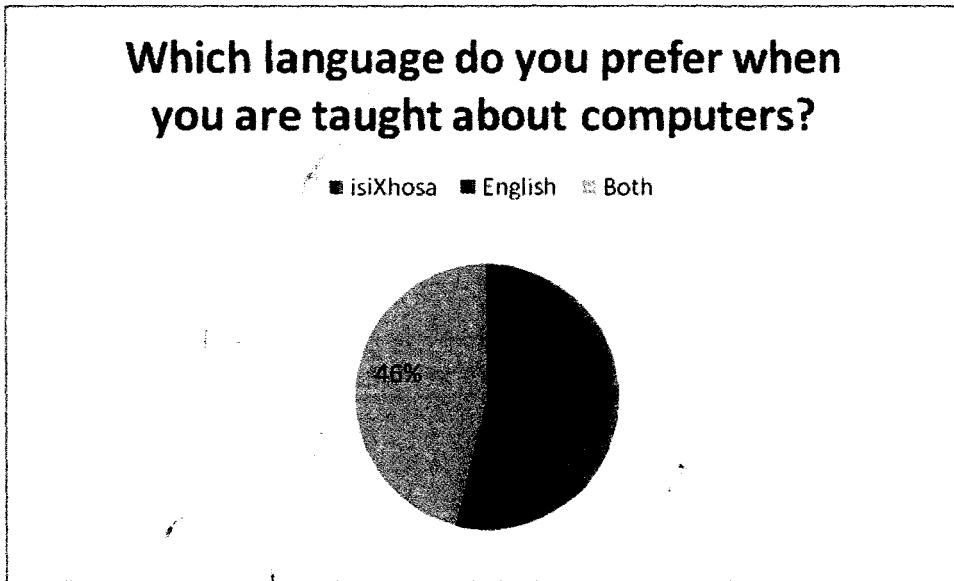
The above question (Table 5) had only allowed respondents to choose from two options, i.e. English or isiXhosa. Despite these options, respondents from this school felt that this question restricted them from expressing their preference. They rather created a third option which is both. Table 5 indicates that 55% of the respondents from Nombulelo preferred English while 27% were comfortable with isiXhosa and 18% said both languages.

Table 6: Which language do you prefer when using computers, English or isiXhosa?



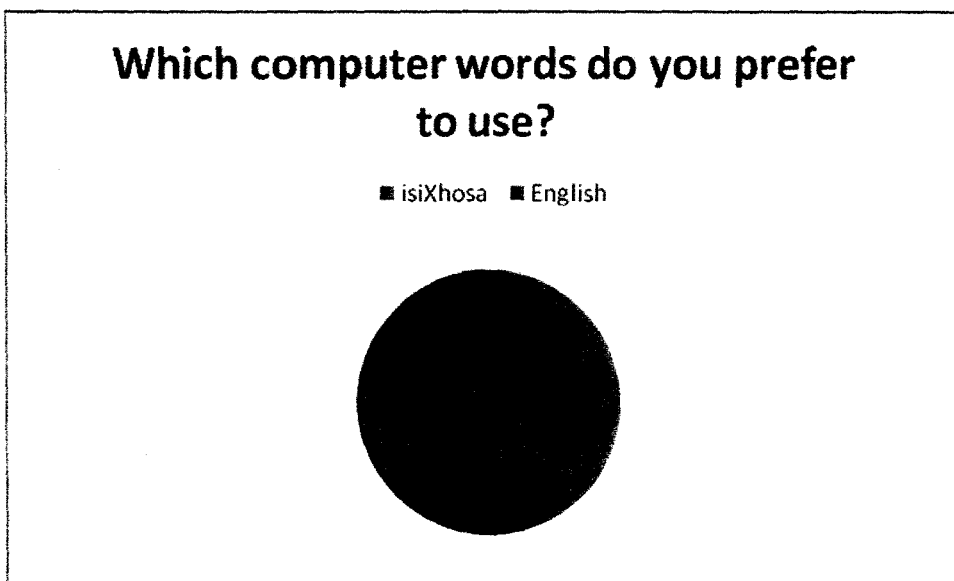
The majority of these respondents from preferred English when using computers. The above table (i.e. 6) indicates that 82% of respondents preferred English.

Table 7: Which language do you prefer when you are taught about computers, English or isiXhosa?



The majority (as indicated in Table 7) of respondents with 46% preferred to be taught about computers in both isiXhosa and English. From the interviews, some of these students stated that their teachers use both isiXhosa and English when teaching. It is now evident that these students benefited from this. This is indicative that as much as Nombulelo students are wanted everything to be conducted in English there are still those who believed that teaching in isiXhosa would be useful.

Table 8: Which computer words do you prefer to use, English or isiXhosa?



The above table (i.e. Table 8) illustrates that 91% of the respondents preferred to use English words.

E4) Interviews

Due to time clashes the researcher could not conduct interviews at Nombulelo. Specifically, at the time of finishing the BCL course the Grade 10 examinations were commencing and this became problematic to students as they were expected to study in preparation for the exams. Efforts to utilise their leisure time (particularly after their exam sessions) failed as students never showed up.

Conclusion: Comparative analysis of the case studies

I seek to conclude this chapter by giving a comparative analysis of the findings. This comparison has mainly been motivated by the differences revealed in these case studies. To avoid ambiguity, it should remain clear that this comparison is not the primary aim of this research. It is a way of showing that society informs language revolution. This entails factors that might influence language proficiency. Specifically, this research had been conducted in two distinct areas. As much as the subjects of this study come from the same language background, their social behaviour and practice has been influenced by several factors. Essentially, this chapter shows that students in rural areas find the use of English to be complicated, whereas in Grahamstown the students are more able to use English in class discussions and so on. There are similarities in terms of language attitudes and use of varieties. There is also a general eagerness to be fluent in English; though there is a general ignorance as to the role that isiXhosa can play in allowing students to acquire cognition before transferring back to English.

There were distinct differences in terms of participation in class. The Grahamstown scholars were less reserved than the scholars from rural areas and the latter tended not to engage in the classroom. In Grahamstown some of the teachers are not isiXhosa mother tongue speakers and this tended to encourage a more multilingual environment which contributed to proficiency in English. An overview of the findings presented in this chapter will be dealt with in the next chapter.

CHAPTER 6

CONCLUSION

6.1 Introduction

This chapter provides an overview of the main findings discussed in the previous chapters. It then presents the recommendations for future research and also involves a discussion on the role played by this study. It finally gives some reflection on the research process and a discussion of the limitations of the study.

6.2 Overview of the key findings

This section provides a summary of the main findings that were presented in the previous chapters.

6.2.1 Lack of employment

English is the language of wider communication and it also plays a significant role in securing employment. To a great extent this is a fact especially here in South Africa. Proficiency in English is quite important for one to improve their social and economic status. Most of the students who were against the use of isiXhosa as LoLT were concerned about job opportunities. In the interviews these students stated that most of the job interviews are conducted in English. They further explained that for all employment opportunities, English proficiency is required in order to operate in the work place.

African languages are still in their early stage of development. There is a lot that still needs to be done in order for these languages to be fully functional. As pointed out in chapter 4, there is no reason why terminology cannot be developed in any field in order to intellectualise African languages. To some extent chapter 5 shows that there is essentially an attitudinal problem when it comes to using African languages in the classroom and for the purposes of the work place.

6.2.2 Code Switching in their classrooms

It was quite evident that their teachers practise the code-switching method of teaching. The students confirmed this and they agreed that it was essential for their understanding. These

teachers are forced to teach using both isiXhosa and English due to the fact that students struggle to understand everything delivered in English. When they come across English words that are difficult the students would also use bilingual dictionaries. Even though other students were against the use of isiXhosa they never raised any negative views about code-switching, rather they also saw it as a way of enhancing their understanding. The only thing that was prevailing is the eagerness to improve their English proficiency.

6.2.3 Negative attitudes against isiXhosa

Most students perceived isiXhosa as a difficult language. This is a complicated scenario as these students understand isiXhosa better than English. Their major problem was the difficulty of reading sentences in isiXhosa. They rather preferred not to attempt reading isiXhosa at all. Some of them never read the isiXhosa version of the BCL course. This attitude emerged from the fact that on a daily basis students are exposed to the English language. Moreover, their minds have been colonised by the notion that isiXhosa would never take them anywhere.

6.3 Potential value of the study

This section discusses the potential value of the study in relation to the research question. My research was mainly focused on students to explore the usability of the isiXhosa ICT terminology (as outlined in chapter 4). This involved an investigation of the factors that would influence the adoption of these terms (as encapsulated in chapter 5 of this thesis). As a student who comes from a background of disadvantaged schools, I always felt that language is the primary issue that affects students' performance. This would be mainly caused by their cultural and social backgrounds and the lack of exposure to adequate language teaching. Students from rural areas spend most of their time using their home languages. It is a challenge for them to access education in a foreign language. This research aimed at investigating whether this intervention of developing terminology would be useful in assisting students. From my point of view, whether students use the isiXhosa terms or they prefer the existing English one, the isiXhosa terms will still be useful when they cannot understand the English. This thesis shows that there is general agreement on this point.

6.4 Limitations of my study

This computer literacy course was not part of the school curriculum. This course had to run within a short period of time. This was a challenge as students did not have enough time to read the course. The teaching was very intense and each lesson was developed in English and isiXhosa. Moreover, the issue of the course not being compulsory made students not to commit themselves, and they never took the course seriously.

My experience as an interviewer was also a limitation. There were instances where the interviewer would indirectly lead the interviews. This resulted from the fact that these students were not participating actively. I would probe questions in order to make them elaborate more on their views. In other instances I would ask questions in a somewhat biased manner in order to illicit a response. To students this would sound as if I was promoting and encouraging them to study in isiXhosa. Nevertheless, the information which was gained from these interviews and which forms part of chapter 5, was extremely valuable in gauging the attitudes of students and also to allow them to make informed decisions concerning languages issues.

The teaching of the BCL course was supposed to run in a fully localised lab. Due to technical problems, in other school the course had to use the proprietary software which is not localised. In the classroom other students would use the proper software whereas others were not using it. This discouraged the opportunity of running the course entirely in isiXhosa, though it did open up the opportunity to discuss the possibility of studying in isiXhosa.

6.5 Future recommendations

On the basis of what has been found in this study, the following recommendations are made:

- This research should be continued for a longer period of time.
- This BCL course should be integrated into the school curriculum, maybe by so doing it will be possible to tell whether the isiXhosa ICT terminology is useful in enhancing learning for disadvantaged schools (when gauged over a considerable period of time, possibly from grades 8-12, using the same class as they progress).

- The Department of Education should be engaged in order to facilitate the use of multilingual dictionaries in the classroom in order to improve cognition amongst learners.

6.6 Conclusion

This thesis has proven that anything can be said in any language which one chooses to make use of. Further to this, terminology can be created in any language in order to support effective teaching in the classroom. There is of course the question of attitudes which needs to be taken into account in the South African scenario, particularly attitudes towards learning in indigenous languages. This research has gone some way to show that these problems can be addressed, especially when students and teachers see the value of appropriating terminology in the mother-tongue and allowing students to choose which language they want to use in order to conceptualise material, whilst at the same time gaining access to English.

APPENDIX 1

SPREADSHEET TRANSCRIPTION

Pamela: I think masiqale sibuze ukuba yintoni umsebenzi kaExcell? What is the primary function Lorenzo kaExcell?

Lorenzo: It is to organise Data. It is a book of tables. We've got tables all collected like a book. A workbook has got several worksheets.

Pamela: A book has got several worksheets.

Lorenzo: A worksheet is what you see is the one with the cells and that's a table. It's a table in which you can do various operations, you can move things around, create links within the various cells.

Pamela: So the first primary thing is a programme to organise data. OK. *Uku-organayiza* is like orderly way of organising, isn't it?

Lorenzo: Yes.

Pamela: So, how can we capture...?

Lorenzo: Let's think one second because the next thing is gonna be database, a database is also used to organise data although it's mostly used to store data. Essentially, a database is also using a collection of tables but in a different way. It's more advanced.

Pamela: Have'nt we got a database somewhere?

Lorenzo: No not yet, we came across it ...

Pamela: We've got i-data, we came across it somewhere... Yintoni u-uvimba? Besithe yintoni uvimba kanene?

Other people: Yi-database

Pamela: OK, so if we starting with database, it would be uvimba ogcina iinkcukacha in an organised way.

Lorenzo: Yes, I was just mentioning because it's on our way and so we must bare it on mind to use a term/definition that is not gonna be confusing when we come to databases. Basically what the spreadsheet does is that, it organises data into tables.

Pamela: Into tables? What is to organise, *lo* organise ndimfunayo not uququzelela kind of. Is it not? Akokuhlela?

Thandeka: Ukuhlenga-hlengisa

Pamela: Ukuhlenga-hlengisa okanye ukuhlela, ukuhlela iza kubangathi kuku-editha. Ukuhlenga-hlengisa iinkcukacha ngokweethbhula. Kuthwa ziintoni iitables? Ziithebhula?

Rushman: Ziitafle

Other people: hayi maan!

Rushman: Table...

Nomathemba: Ayiloluhlu?

Pamela: Uluhlu is a list nhe, so in a table you have a list, uluhlu nhe. Inkqubo esetyenziswa ukuhlengahlengisa iinkcukacha kwiithebhula. What are tables?? Ayizo theyibhula?

Lorenzo: (from the background) Is there a suggestion?

Msindisi: (from the background) Should we search for it?

Lorenzo: (from the background) Yes

Rushman: Ndifun' ukunqonda le theyibhule athetha ngayo ekhomyutheni yinto enjani?

Thandeka: Phaya ku-Excell kukho izinto ezingathi ziibloko ezinje ekufakwa kuzo i-information zibene...

Rushman: Masisebenzise eli gama mos ulibizayo, asinakuthi ziitafle.

Pamela: Let's say sonke sizistudents zehonours, iza kubanguMapi... let us say iza kubanguDalvit when we arranging it alphabetically. Sibhala ii-assignments eziyi-4 kweny' ilisti kukho amagama ethu kwenye ilisti kuno-assignment1 neemarks zethu, assignment2... kuthwe i-assignment zikhawunta u-50% so i-excell iyakwazi ukukhatyulethi u-50% yeemarks zakho...

Rushman: Izifake kwezaatables?

Pamela: Yes, you put ifomula ikhatyulethi ezaa marks zonke. So that is umsebenzi wayo, hence sisithi isetyenziswa ukuhlenga-hlengisa iinkcukacha ezifakwe kwitheyibhula.

Rushman: Masisebenzise eli gama lithi theyibhula.

Pamela: Sithi theyibhula?

Rushman: Yes.

Pamela: Inkqubo esetyenziswa ukuhlenga-hlengisa iinkcukacha kwitheyibhula... ummmh andiyiqondi kakuhle.

Rushman: Asilocwecwe?

Pamela: Ayilocwecwe, izintlu ziintoni?

Rushman: Ayiloluhlu?

Pamela: Yiplural yoluhlu nhe.

Rushman: Izintlu zizinto ezidiviyidiweyo ezahlukeneyo, uyakhumbula sithetha kulaa lecture ngento yezintlu mbini. Uyakhumbula?

Pamela: To part?

Rushman: Yha, it's like ukudivida into into numbers.

Pamela: mmh, ndimamele

Nomathemba: Izicwangciso

Rushman: Itheyibhula sisicwangciso?

Pamela: Isicwangciso manani yitime table

Rushman: sisicwangciso manani, yes

Pamela: Inkqubo esetyenziswa ukuhlenga-hlengisa iinkcukacha ngokwezicwangciso... what is another word for isicwangciso? Is it plan isicwangciso?

Rushman: yes yiplan isicwangciso. Ezaa tables azicwangciswanga zona kwikhompyutha?

Other people: Zicwangcisiwe

Rushman: ... ngokwezicwangciso zekhompyutha.

Pamela: Inkqubo esetyenziswa ukuhlengahlengisa iinkcukacha ngokwezicwangciso ezimisiweyo. According to the tables that have been set?

Rushman: Ukubangabana zimiselekile pha kwikhompyutha, mhlawumbi masithi...

Thandeka: Zicwangcisiwe and i-information eza kufakwa phaya fits in kwesasicwangciso.

Pamela: Yha yha, there's no... Ngokwezicwangciso ezimiselweyo nhe... Iinkcukacha ngokwezicwangciso ezimiselweyo. The first part Msindisi nhe... inkqubo ezi...

Msindisi: uxolo nje kancinci... OK mandiyibhale le...

Pamela: Inkqubo esetyenziswa ukuhlenga-hlengisa iinkcukacha ngokwezicwangciso ezimiselweyo. OK, fullstop so far...

Nomathemba: Laa inkqubo ayingo-i-n-k-q...

Pamela: Yes

Nomathemba: Ingathi uthe inqubo...

Pamela: Hayi uyibhale kakuhle..

Nomathemba: OK ndiyayibona

Pamela: Is it important that you put the size phaya...?

Rushman: 2.5 Megabytes

Pamela: Wazi neemegabytes uMoneli...

Everyone: (laughing)

Msindisi: Yenzelwe iinkcukacha onokuzigcina ukwazi ukuba xa ubhala kwesispreadsheet sakho ungadluli kulaa mthamo.

Pamela: OK kufuneka ibenga...

Rushman: Now that Msindisi usithi kwisigcini-nkcukacha esisisigxina, yila nantsika leyo...

Msindisi: Yi-harddrive

Pamela: Besithe ngundoqo kodwa not esisisigxina...

Rushman: Sisigcini-nkcukacha esingundoqo besitshilo really.

Pamela: Let's first correct that... le nkqubo yekhompyutha ifuna umthamo... ifuna okanye

umthamo shouldnt exceed?

Msindisi: Mawuqale ku-2.5 ukunyuka...

Pamela: Kufuneka uqale ku-2.5

Msindisi: I suppose, Lorenzo we are talking about the excell that it should have something like 2.5MB to store information. Can I read you from the ...

Lorenzo: Yes please

Msindisi: This program requires atleast 2.5MB from the harddrive.

Lorenzo: OH OK, it's a footprint, that's how much it needs to be able to run. It's like the printing space of the program. If you want to store more data then you need more space. It's not a limit but a minimum. It means that if you disk is too full or you dont have 2MB then it cannot open the program...

Rushman: Can you come again?

Lorenzo: Ummh, this is the space on the harddrive that the program needs in order to be able to run. It means if your disk is too full and you dont even have, how much is it? 2.5MB? then it's simply not going to open if it doesnt have enough space.

Rushman: Can it take more than 2.5?

Lorenzo: Yes, this is the minimum space. If you have less than this in your harddrive, you dont have enough space. It simply wont start.

Msindisi: Ifana nalaa mzekelo awenzayo wetafile. If le tafile igcwele awuzokwazi ukongeza enye into apha etafileni, awuzokwazi ukuyisebenzisa le tafile

Pamela: Ngaphandle kokuba wongeze le tafile?

Msindisi: ...ngaphandle kokuba kubekho ispace apha etafileni esinininzi. Ngaphandle kokuba kubekho ispace that 2.5 maybe... ayivakali? Sithi le tafile uyayisebenzisa for ukupheka elaa hlobo ayicacisa ngalo uLorenzo then le tafile inkulu mos then inezinto igcwele ufuna ukongeza ezinye izinto then there's a need into yokuba kubekho ispace atleast esingango-2.5...

Pamela: So kufuneka udilithe izinto...

Msindisi: For you to be able to use laa tafile kufuneka ube nesispace esi-enough.

Nomathemba: Ukuze ube nespace esi-enough kufuneka uphungule ezinye izinto?

Msindisi: yes... okanye wongeze ispace sakho

Thandeka: So laa 2.5 it's a minimum

Msindisi: yes yes, a sort... a minimum you should have kwiharddrive yakho

Thandeka: Minimum space or information?

Msindisi: Minimum space

Lorenzo: Minimum space

Pamela: OK, ... ummh this was uMonwabisi sending apologies. So le nkqubo yekhompnyutha ifuna omthamo ongangesigcini-nkcukacha...

APPENDIX 2: QUESTIONNAIRES

IMIBUZO NGOPHANDO

NdinguMsindisi Sam ndenza uphando lwemfundo ephakamileyo kwiCandelo leeLwimi zesiNtu kwiSikolo seeLwimi kwiYunivesithi iRhodes. Le mibuzo yinxalenye yophando malunga nokuphuhlisa nokusetyenziswa kwesigama se-ICT ngesiXhosa.

Enkosi!

Ukuphendula kwimibuzo ekukhethwayo kuyo, beka u-X phakathi ebhokisini ecaleni kwempendulo leyo uyikhethileyo.

A. IINKCUKACHA ZAKHO

1. Isini: Indoda okanye Umfazi 2. Igreyidi _____

B. ULWAZI NGEKHOMPYUTHA

3. Wawukhe wayisebenzisa ikhompyutha phambi kokwenza ezi zifundo? Ewe Hayi
4. Wawukhe wayibona *software* yekhompyutha ebhalwe ngolwimi lwakho (Umzekelo u-Linux, uFirefox, OpenOffice, ezineemenyu ezibhalwe ngolwimi lwakho). Ewe Hayi
5. Ucinga ntoni malunga nokusebenzisa iikhompyutha ngolwimi lwakho? Cacisa.

6. Loluphi ulwimi okhetha ukulusebenzisa xe uthetha ngeekhompyutha, sisiNgesi okanye sisiXhosa? _____
7. Loluphi ulwimi olukhethayo xa usebenza ekhompyutheni, sisiNgesi okanye sisiXhosa? _____
8. Loluphi ulwimi okhetha ukufundiswa iikhompyutha ngalo, sisiNgesi okanye sisiXhosa? _____
9. Ngawaphi amagama ekhompyutha okhetha ukuwasebenzisa, sisiNgesi okanye sisiXhosa? _____
10. Ngawaphi amagama ekhompyutha owaqonda ngcono xa usebenzisa ikhompyutha, sisiNgesi okanye sisiXhosa? _____
11. Ngawaphi amagama ekhompyutha ekulula ukuwakhumbula, sisiNgesi okanye sisiXhosa? _____
12. Nika izimvo malunga nezixhobo zokufundisa eziphuhliswe ngesiXhosa nesiNgesi. Cacisa.

13. Ezinye izimvo

Enkosi kakhulu ngoncedo lwakho!

QUESTIONNAIRE

I am Sam Msindisi doing a Master's research in the African Languages Studies Section in the School of Languages at Rhodes University. This questionnaire is part of an investigation of the development and implementation of ICT terminology in isiXhosa.

Thank You!

To answer multiple-choice questions, put a cross (X) inside a box next to the answer chosen.

A. PERSONAL INFORMATION

1. Gender: Male or Female 2. Grade _____

B. COMPUTER KNOWLEDGE

3. Have you ever used a computer before attending this course? Yes No

4. Have you ever seen computer software in your language (i.e. Linux, Firefox, OpenOffice, etc with the menus in your language)? Yes No

5. What do you think about using computers in your language? Explain.

6. Which language do you prefer when talking about computers, English or isiXhosa?

7. Which language do you prefer when using computers, English or isiXhosa?

8. Which language do you prefer when you are taught about computers, English or isiXhosa?

9. Which computer words do you prefer to use, English or isiXhosa?

10. Which computer words do you understand better when using computers, English or isiXhosa?

11. Which computer words do you remember more easily, English or isiXhosa?

12. Comment on the teaching material developed in isiXhosa and English. Explain.

13. Any other comments

Thank you for your input

P.O. Box 202

Berlin

5660

20 May 2009

Dear Sir

SUBJECT: PERMISSION TO USE YOUR SCHOOL AS A TEST SITE FOR MY RESEARCH

I am registered as a full time student at Rhodes University (student number g07s0002). I have been studying for a Master's degree in African Languages since March 2007. I would be most grateful if you would allow me to use your school as one of my research sites for the research report which I am required to write.

The aim of my research project is to investigate the development and implementation of ICT terminology. In your school, I would mainly like to investigate the adoption of this ICT terminology in grade 10. Should you agree to allow me to use your school as a research site, with your help or any other teacher responsible for computer lessons I would like to organise a computer literacy course taught in isiXhosa. Further data for analysis will then be collected from questionnaires and interviews with the students. They will be asked for permission to audio-record these interviews and some class proceedings. With your permission I would also like to request one of your computer lessons' teacher to conduct this course, entirely in isiXhosa. I will also ask permission for me to be involved in this course as an assistant for classroom observations.

The school and the teacher involved are assured of anonymity in the final research report and will be invited to proofread drafts of the report to ensure that details are accurately recorded and reported.

Should you have any enquiries or concerns about this request you can contact me at 083 312 6438 or email sam0833126438@gmail.com.

Yours sincerely

.....

Msindisi Sam

APPENDIX 4

Original Ngwane interview transcription (translations provided in text of thesis)

Inter: Mamelani ke, into eyenzekayo sithetha ngale course besiyenza apha, into endifuna ukuyiva kuqala nhe, kula nto yokuba besikhe sahlanguana before, qha ngoku andikhumbuli kakuhle ngoku, besithethile kuqala ngento yokuba ingaba kubalulekile ukusetyenziswa kwesiXhosa, iilwimi zethu ekufundiseni icomputer, besithethile ngaloo nto leyo, niyakhumbula ngokuya sasiqala icourse? Sasithethile ngaloo nto leyo. Naveza izimvo zenu, ngoku andisakhumbuli kakuhle ukuba izimvo zenu zazisithini na. Ndicela ukuba nivele ukuba nicinga ntoni makunga nokufundiswa kwee computers ngesiXhosa ezikolweni zethu, yintoni eniyicingayo, ingaba yinto elungileyo okanye yinto engalunganga leyo? Hayi ungachopha.

Stu1: Ndingcinga ukuba mna irongo ayilunganga, ukuba sizakufunda ngesiXhosa iyasimosha loo nto leyo, kufuneka sizifunde nge English ukuze sikwazi ukuba siyazi nje ngabanye abantu beyazi, ukuba siyenze ngesiXhosa yenza ukuba singayazi I English.

Inter: Oh k, ithi into yakho endiyivayo, into yokuba sifunde ezi computer ngesiXhosa izakusibetha loo nto asizokusazi isiNgesi. Itsho loo nto?

Stu1: Ewe.

Inter: Hayi, awurongwanga mntakwethu, ndimamele nje, anditsho ukuba urongo. Uthini omnye? Uthi ubhuti loo nto izakusibangela ukuba singasazi isiNgesi kanti thina sifuna ukwazi isiNgesi. Utsho yena ubhuti, uthini omnye?

Stu2: Sirongo isiXhosa apha ecomputheni, ngokuba xa kufuneka siphumile apha esikolweni sithethe xa sifunda ngecomputha sazi iEnglish.

Inter: Oh k, into ba nifunde icomputha ngesiXhosa loo nto iyakunibangela into yokuba ningakwazi ukuthetha isiNgesi? Oh k, eh eh.

Stu3: Ndithi nam kulungile utheth'icomputha nge English ngokuba naxa siphuma sihamba sesigqibile ufunda sisiyokufun'umsebenzi, asizofumana umlungu othetha isiXhosa sofumana umlungu othetha I English.

Inter: Oh k, lento yofunda kwenu icomputha ngesiXhosa izakunisokolisa ba ningafumani misebenzi? Oh k, zintle ezondaba ezo, masiqhubekekeni ke sithethe nge course le besiyenza, icourse le ba niyijongile ibhalwe ngesiNgesi, masiqale kuqala ezifundweni zethu. Apha esikolweni nje ngokuba nifunda nje kukho iisubjects ezifundiswa ngesiNgesi, zibhalwe ngesiNgesi, anikhe niyifumane mhlawumbi indima yokuba nengxaki xa nifunda eso siNgesi eso?

Stu4: Siye siyifumane ukuba singasazi isiNgesi esi, ufumanise ukuba nomntu ongenabazali uye afumane ubunzima kodwa apha ekuhambeni kwethuba kuye kuba lula. Nathi ke siye sibufumane ubunzima ndiyacinga ukuba nathi apha ekuhambeni kwethuba kuza kuye kuhambe kuhambe kube lula. Sisazi isiNgesi esi nje ngokuba sibathakala nje esiNgesini.

Inter: Ngubani igama lakho?

Stu4: Ndingu Philasande.

Inter: Wena?

Stu3: Ndingu Indiphile.

Inter: Wena bhuti?

Stu2: Ndingu Simphiwe.

Inter: Hey.., Ithi bhuti le nto uyithethayo apha ekuhambeni kwexesha kuzakuba lula bakhe kwakho umntu onincedayo onifundisayo, kodwa ngoku ndiyacinga, ingxaki nibanazo ngoku, ngesiNgesi?

Stu4: Ewe.

Inter: Nithini nogoku uyeke ngexesha elizayo, ndiyakuva ndithi ngoku masime ngexesha elizayo. Ndiyakuva le nto uyithethayo, kuzahamba kuhambe kube lula nje ngokuba kulula kwabanye abantu.

Stu4: Xa sisengxakini siye sicele nokuba nguMiss ukuba akanakukhe asizame akhe asiguqululele nokuba kusesiXhoseni, ngokuba mhlawumbi ufumane igama elinzima.

Inter: U- Miss athini, aliguqululele esiXhoseni?

Stu4: Alithi apha seiXhoseni ukwenzela ukuba siyazi intsingiselo yalo elogama elo.

Inter: Oh k. Ithi lento uyithethayo kum nhe, once ningalazi kakuhle eligama nicela uMiss, uMiss aniguqululele esiXhoseni ukwenzela ukuba nazi intsingiselo yelo gama. Loo nto iphela ininceda leyo?

Stu4: Iphela isinceda Mfundisi siyazi intsingiselo, nokuba sithetha nomntu mhlawumbi wangaphandle siyazi nentsingiselo yelo gama.

Inter: Ukwazi ukuba xa uthetha ngelaa gama lithile ube sele uyazi ngokuba uyayazi intsingiselo yalo?

Stu4: Ewe.

Inter: Utsho yena, bathini abanye?

Stu5: Mna xa ndixakwe ligama le English ndiya ndiye kwiDictionary.

Inter: Kwidictionary?

Stu5: Yes.

Inter: I dictionary iye ikuncede yona, ikunike intsingiselo le ixelwa ngubhuti?

Stu5: Ewe.

Inter: Ngesingesi ke yona idictionary?

Stu5: Ngesi Ngesi nangesiXhosa.

Inter: Idictionary yakho ibhalwe ngesiNgesi nangesiXhosa?

Stu5: Le ibhalwe nge English eyalapha ibhalwe ngesiXhosa.

Inter: Oh, zombini?

Stu5: Ewe.

Inter: Oh k, unale dictionary yesingesi nale yesixhosa? Masithi mhlawumbi ubhala itest, ufumanise ukuba eli gama linzima eli, uya kwidictionary yesiNgesi ujonge elaa gama, then ugqiba kwakho uphinde uye kweyesiXhosa?

Stu5: Ewe.

Inter: Oh, loo nto ithethe ukuba uzisebenzisa zombini eyesiNgesi neyesiXhosa?

Stu5: Ewe.

Inter: Oh right, ndiyayiva ke ngoku le nto, Oh k, ba kukho ingxaki siya kwidictionary yesiNgesi neyesiXhosa sozisebenzise zombini loo nto iyakunceda ekupheleni kosuku?

Stu5: Ewe.

Inter: Oh k, bhuti uthini wena? Ukhe ube nengxaki wena mhlawumbi xa ubhala itest okanye ufunda izinto ezibhalwe ngesiNgesi Mhlawumbi iinotes zakho?

Stu6: Yes. Ndicele utitshala okanye loo Miss ukuba andinceda andiguqululele esiXhoseni ndiyazi ukuba elaa gama lithetha ukuthini na. Ndiyazi ukuba ndiyali understanda.

Inter: Ekugqibeleni le nto yenzekayo uMiss naye xa ekuncedayo ngesiNgesi uye akuxelele ngesiXhosa ukuba uthini na laa nto? Yimani andinifaki mazwi emlonyeni, nobathathu niyaziva ukuba nithini? Ithi into yenu nobathathu, into yokufunda ngesiNgesi niyayifuna ukuba yenzeke, kuba nifuna ukuba nisazi isiNgesi, nizokwazi ukuba niqeshwe, siyevana, niyavuma ukuba benitshilo?

Students: Ewe.

Inter: Nifuna ukusazi isiNgesi nje ngabanye abantu ba besazi isiNgesi, nifuna ukuba zesiqeshwe kuba imisebenze ekhoyo phandle apha ifumaneka ngesiNgesi? Niyavuma ukuba nitshilo?

Students: Ewe.

Inter: Enkosi kakhulu, anditsho ukuba nironko ndifuna nizive, nithi ke ngoku xa sinengxaki namagama esiNgesi, uthi ubhuti lo, siye sizame ukuba sibuze kuMiss, intsingiselo, ndithande ela gama lentsingiselo, uthi xa edlulayo athi ke ngoku, sikwazi elagama xa silisebenzisayo, silisebenzise siyazi intsingiselo yalo. Loo nto itheth'ukuba ke ngoku xa ngoku siyifumene intsingiselo yeli gama uyakwazi ke ngoku ubuye ulisebenzise ngesiNgesi. Le nto uyithethayo ithi, ela gama liyingxaki kuwe once ucaciselwe ngesiXhosa liye libe lula, ukwazi ukulisebenzisa siyevana. Usisi yena wenza njani? Uthi xa enengxaki negama yena usebenzisa idictionary yesiXhosa neyesiNgesi zombini zimncede zimcacisele ukuba la magama athetha ukuthini, loo nto iyamnceda ukuba akwazi ekupheleni kosuku aphinde abuye ela gama alisebenzise ngokulazi. Wena bhuti ubutheni kanene? Nawe uthethe lento yokuba uye udibane nMiss ucele kuMiss ukuba akucacisele ngesiXhosa ukuba lithini igama, then uyi understate? Niyayiva eyona nto ibangela

ukuba niwa understante la magama, kufuneka kùbekho isiXhosa esikhoyo kuzokwazi ukuba ni understante isiNgesi. Iyavakala le nto ndiyithethayo, ithethwa nini ayithethwa ndim. Ukwenzela ukuba si understante isiNgesi, masibekhona isiXhosa, niyavuma ukuba nitshilo?

Students: Ewe.

Inter: That means ke nina into eniyifunayo yeyokuba isiNgesi masisetyenziswe? But ke sibanazo iingxaki esinazo, niyayivuma loo nto leyo?

Students: Yes.

Inter: Xa kukho isiXhosa atleast nizakukwazi uku understanta isiNgesi, itsho mos into yethu?

Students: Yes.

Inter: Enkosi kakhulu. Ndiyathanda le ndawo, masenzi enye indawo. Kule course beniyenza inamagama esiXhosa nesiNgesi, ingaba ekufundeni bekukhe kwakhona iingxaki eninazo, imhlawumbi ufunda eli cala lesi Xhosa uqonda ba eyi eli gama lesi Xhosa andilazi kakuhle mandilikrobe pha esingesini, xa usithi esiNgesini, ndiyalazi eli gama lithetha ukuthini eli.

Stu7: Ewe bendikhe ndanayo loo nto leyo qha ayandibhida la magama esiXhosa ndabona eliya lithi isichwethezi, ndabe ndilijonga kweli cala le English ndabe ndibona ba kubhalwe ikeyboard apha, ndali understanta ukuba isichwethezi yikeyboard.

Inter: Into ebangelaukuba mawu understante yintoni, ubuyazi ikeyboard ukuba yintoni kuqala?

Stu7: Bendiyazi ikeyboard ukuba yintoni na ngeligama lesi Ngesi.

Inter: Oh, ubuyazi ikeyboard ukuba yintoni na?

Stu7: Ewe bendiyazi.

Inter: but xa usithi gqi ngapha nali igama elithi isichwethezi ngoku? Phambi kokuba ufunde ngecomputer ikeyboard yona ubuyazi ukuba yintoni, masithi mhlawumbi awazi nto ngecomputer sibeke apha ezizinto sifolise, ubunoyolatha mhlawumbi ikeyboard okanye uyaze ngokuyixelelwa ukuba le nto yikeyboard le.

Stu7: Hayi Mfundisi andifuni kuxoka, ndiyazi kuba ndiyixelelwe ukuba le yikeyboard zabe zichazwa ngokuya zazisanda kufika iicomputer wabe uMiss esixelela ngee parts zecomputer.

Inter: Oh k, uthin'omnye ziNkosi, ingaba akhona amagama oqondayo ukuba hey ngokuya bendifunda la ncwadi leya bekukho amagama esiNgesi anzima ndawabona esiXhoseni acaca esiXhoseni okanye ndawabona esiNgesini acaca esiNgesini. Mhlawumbi likhona igama udibene nalo wabe uqonda eyi eli gama eli liyandibhida eli mandilikrobe esiXhoseni okanye ndilikrobe esiNgesini.

Stu8: Nam bendikhe ndabhidiswa ngu CPU, ndathi xa ndityhilayo pha esiXhoseni lo CPU ndabuza apha eklasini ukuba yintoni ingqondo yecomputer, ndabe ndiyibonile mna ba yintoni.

Inter: Then wakwazi ukuyazi ukuba ingqondo yecomputer yenza ntoni? Nditsh'uba sine CPU ngapha, sinengqondo yecomputer ngapha. Ba ndithetha nge CPU uzakukwazi ukuba iCPU yenza ntoni na kanene, okanye ukuba sinengqondo yecomputer uzakukwazi ukucinga inokuba ingqondo

yecomputer yenza ntoni na kanene, ungakwazi ukucinga xa ujonge iCPU okanye ingqondo yecomputer ukuba kanene yintoni imisebenzi yazo, yiCPU ngapha ibe yingqondo yecomputer ngapha?

Stu8: Mna ndizakujonga kwingqondo yecomputer.

Inter: Ngoba ndoda, inoba yenza ntoni le ngqondo yecomputer?

Stu8: Yile ifaka yonke into pha kulaa nto yecomputer.

Inter: Xa kuthiwa kuwe yingqondo yecomputer iyacaca kuwe ukuba yintoni na, iyacaca imisebenzi yayo ukuba yintoni na?

Stu8: Yes.

Inter: Uthini omnye, uthini wena bhuti?

Stu8: Mna khange ndibenangxaki kakhulu apha emagameni.

Inre: That's fine, kwiquestionares zenu masigqibezele ke ngoku, niphendule ngesiXhosa okanye ngesiNgesi?

Students: Siphendule ngesiXhosa.

Inter: Niphendule ngesiXhosa nobathathu, kutheni nikhethe isiXhosa nje?

Student 2: Kungokuba sinako ukubhidakala apha esiNgesini, uyabona ngoku saphendula ngesiXhosa.

Inter: Anabhidakala esiXhoseni?

Stu2: Asabhidakala.

Inter: Wena sisi?

Stu1: Nam ndiye ndaqonda ukuba ndiyaxakwa ngapha ngasesiNgesini.

Inter: Ukrobile esiNgesini kuqala, akuba uqae wajonga isiXhosa? Nawe bhuti khange uqonde hayi mandityhile isiXhosa, uqale wakroba isiNgesi, then waqonda ukuba ihh hayi ndiyabhadakala esiNgesini mandihambe ndiye esiXhoseni?

Stu4: Mna Mfundisi ndiye ndaqonda ukuba isiNgesi sizakundisokolisa kuba ndizakucotha kuso, kubhetele kwa le ndizakukhawulezisa kuyo le isisiXhosa.

Inter: Uyakwazi ukukhawulezisa esiXhoseni, esiXhoseni ukhawuleza uyazi?

Stu4: EsiXhoseni ndiyakwazi ukukhawulezisa, ndiyabhidakala apha esiNgesini, esiXhoseni ndikhawuleza ndiyazi kunasesiNgesini.

Inter: Mandibulele kakhulu ngexesha lenu, enkosi kakhulu, good luck for your studies, exams and everything. Thanx for ixesha lenu ngoku beniattenda le course nenza zonke izinto ezenziwa kule course, I think sigqibile ngoku, enkosi kakhulu nhe?

Original CM Vellem Interview transcription

Msindisi: Ok, asizokuthetha isiNgesi but if uyafuna ukusebenzisa isiNgesi that's fine ungasithetha isiNgesi. Ukuqala kwethu ukudibana siye sathetha malunga ne neComputer ngesiXhosa nethi isNgesi ne.

Student1: Ewe bhti.

Msindisi: Ukuqala kwethu siye sathetha malunga nokubaluleka kokusetyenziswa kwelwimi zesintu niyazazi mos iilwimi zesintu?

All : Ewe.

Msindisi: Without Afrikaans and English. Xhosa, Zulu, Sotho and so forth and so forth. Then you had views nani neembono zenu zokuba yinto eright okanye engekho right ukuba sisebenzise iilwimi zethu. We spoke about that bendibawela ukuba siphinde sithethe malunga na loo nto leyo, any person ungaphakamisa nesandla ndzakolatha you say something.Ok, Ok, mandiqale apha kuwe lady.

Student2” Mna bendicinga ukubana sizisebenzise both ya issetyenziswe kakhulu iEnglish finaly xa uintavyuwishwayo awusoze uthethe isiXhosa and izakubetha kakhulu kwiCV, isiXhosa sona yi tounge mother”s language so asikwazi nje ukusilahla.

Msindisi: IsiXhosa ? Ok, utsho ke usisi, uthini omnye?

Student1: Mna bendicinga ukubana ndimsekonda ukuba masizisebenzise both kuba naphina na phin na inqabile kwindawo osebenza kuyo kusetyenziswe isiXhosa always yiEnglish English namagama amaninzi yiEnglish isiXhosa usibona pha na phaya.

Msinisi: Nje ukulandela kulaa nto ebeqiba ukuyithetha, nithi kengoku masizisebenzise zombini kuba isiXhosa iyi mother tounge ilulwimi lwethu , seskosizathu esibangela ukuba sizisebenzise zombini kengoku? Ndiyabuza nje. Sesosizathu esibangela ukuba sizisebenzise zombini ke ngoku?

Student3 Mna bhti ndicinga kubana zibaluleke zoyi 2 kodwa ebaluleke kakhulu yiEnglish, isiXhosa sona sisincede kwezondawo singawaziyo amagama eEnglish nakwiEnglish sinedakale ngesiXhosa.

Msindisi: Ok, ithi into yakho isiXhosa sizakusinceda xa xinengxaki ne siBgesi?

Student3: Ewe.

Msindisi: Tha”s fine, that”s fine. that”s ok. Heke sisi ingathi uzakuthetha. Sizisebenzise zombini ezilwimi, okanye sisebenzise lubelunye? Abanye bathi masizisebenzise zombini kuba isiHosa iyi mother tounge yethu athi usisi yena masizisebenzise zombini ebalulekileyo sisiNgesi but isiXhosa sizakusinceda simane sijonga amagama anzima esiNgesi.

Msindisi: Ok, apha esikolweni ne ilearning areas esizenzayo ezinye zazo okanye zonke sizifundiswa ngesiNgesi mos?

Student1: Ngaphandle kwesiXhosa.

Msindisi: Ngaphandle kweelwimi eziya, but ilearning areas ezifana ne LO sizifundiswa ngesiNgesi. Ingaba siye sibenazo iingxaki in terms of English eklasini> Makhe sive phaa.

Student4 Ewe sibanazo iingxaki siyakwazi ezinye iziinto singaziunderstandi simcele utitshala ukuba asicacisele simxelele ukuba asiunderstandi lendlela aththa ngayo, utitshala uyakwazi ukusicacisela ngesiXhosa ukuba hayi lento ithetha ukuthi ngesiXhosa so siyiunderstande.

Msindisi: Ok, ukhona umntu ofuna ukongeza?

Student1 Ewe, Like iFF bayakwazi ukusicacisela iinotes abazakusinika zona or basinike iinotes bazicacise then kengoku most of the time when it comesto ukubabasicaciselebasebenzisa iEnglish ixesha elininzi.

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