ALTERNATE SYSTEMS OF EDUCATION (DISTANCE AND VIRTUAL): SOUTH AFRICAN TRENDS

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THESIS

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DECLARATION

I declare that the thesis hereby submitted to the University of Durban Westville for the degree of Doctor of Education, has not been previously submitted by me for a degree at any other University. I further declare that this thesis is my own work in design and execution and that all material contained therein has been duly acknowledged.

Signed: _____

Dated: 10-12-2001

DEDICATION

This study is dedicated to my late brother in law, Shunmugam Munsami. May your soul rest in peace.

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ABSTRACT

It has been well documented (Education and Training White Paper I,II and III) that one of the key challenges facing South African post apartheid education is the need to transform the educational sector that was systematically destroyed by many years of apartheid education. Whilst dealing with the process of transformation, South African education is also expected to deal with many other pressures that beset, at present, educational landscapes world wide. These pressures relate directly to the increased demand for access to higher education with a corresponding reduction in government funding for tertiary education. The massification of higher education has placed great pressure on traditional face to face higher education institutions to provide access to larger numbers of students. Student profiles have also changed considerably in post apartheid South Africa. In the past apartheid policies restricted access to the majority of students consequently there are many adult students who are now beginning to enroll at tertiary institutions to upgrade their expertise and qualifications. South African tertiary institutions see it as their imperative to find innovative ways to make their places of learning more flexible and accommodate students wanting life long learning.

Based on the above challenges facing the South African educational landscape, this study investigated the popularity of distance and virtual education as a viable alternate system of learning amongst higher education students in South Africa. The study found that distance education is a very popular choice amongst students who are above 35 years of age. Another finding, was that distance education is popular amongst students pursuing a qualification (diplomas, honours, masters and doctoral degrees) in a variety of professions such as, Computers, Nursing Science, Public Administration, Business Administration, Police Services, Teacher Education, Human Resource Management and Financial Management.

While revealing that distance education is a popular choice amongst tertiary students, the study also found that distance education institutions (UNISA and SACOL)

provide a very low level of learner support to students. The majority of the students indicate that they are very unhappy about the quality and type of study materials that they receive. They also point out that the format of the study materials is always in the form of correspondence based print materials. These materials are too theoretical, confusing and difficult to understand. In terms of staff support, students felt that staff were not sympathetic to their problems and were always unavailable for consultation. The study also found that the type of feedback students received from staff was not in depth and constructive. In this regard, however, both SACOL and UNISA staff indicate that they do not have adequate time to provide learner support as they have very large classes to contend with, in some instances over 400 students per class.

The study reveals that students are unhappy with the fact that their institutions persist with print materials as their primary mode of education delivery. Students overwhelmingly show a preference for multi mediated technologies in their course delivery. On line (Internet) based teaching and learning is high on their priority. It was surprising to find that the majority of students were computer literate. Students indicate that they were self taught in computers as they gained access to it at their place of work. This highlights the point that the work place, is now demanding a new type of worker, namely the knowledge worker. It is for this reason that higher education institutions ought to begin to invest in technology enhanced teaching and learning. In the literature review (chapter two), the study provides a number of advantages of harnessing online education. Perhaps, the most significant advantage of employing computer technology in distance education is that of cost reduction with a commensurate increase in productivity. The literature review also highlights various other potential benefits (personalised education, time and place independence, increased access, etc) to be gained from using online distance education learning systems such as the Internet and Web based applications, etc.

In conclusion, the study provides a number of recommendations on how distance education provision could be enhanced in South Africa. Specific recommendations are offered to distance education institutions on strategies that could be employed to

increase the quality of learner support and the advantages of employing technology enhanced delivery modes. Recommendations are also offered to the Department of Education (DoE) in terms of revising its policy as outlined in the National Plan on Higher Education (NPHE) with specific reference to distance education provision in South Africa.

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CHAPTER ONE:

BACKGROUND TO THE STUDY

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1.1. INTRODUCTION

Dynamic and constant changes in technology and knowledge require that education evolve from being "terminal" into a life-long and on-going activity. Accelerating technological change requires continuing education and training for a worker to remain competitive in the labor market. Without continuous or life long learning, workers will find their human capital rapidly being eroded. They will be unable to hold steady jobs and their prospects for promotion will also be stifled. This will also lead to a corresponding drop in their earnings and subsequently their status in the labor market. Therefore, information delivery and education are essential services that need to be made available on demand, just like any other utility.

Traditional means of education and training are inadequate to meet the needs of large populations for lifelong learning, even in developed countries. In poorer countries, education for all, at least at the primary level, looks like an unrealistic dream if conventional and outdated modes and strategies of education and training are pursued. Even where available, the quality of education leaves much to be desired and is often declining as costs rise faster than income. The rate of increase in the cost of education in the global educational landscape has consistently outpaced the rate of inflation. The emerging trend throughout the educational landscapes of the world shows a decrease in government spending on tertiary education. This spells disaster for university, college and technikon administrators who seek to provide the best quality education at an affordable price.

While the relative price of conventional education is rising, the digital revolution has been decreasing the cost of storing, manipulating, and transmitting information by 50 percent every 18 months, with no end in sight (Knight: 1996). This technological wave is now driving major changes in the

way education is produced and delivered. At the heart of this change is the reconceptualization of the employment of media such as images, sound, books, and computer networks into new formats like digital multimedia. This is making the world's knowledge base accessible anywhere on the planet through satellites, coaxial cable, fiber optic cable, and even conventional copper wire with new techniques to pump large amounts of information down the "last mile". Even the book "is being rapidly transformed into an electronic learning tool that utilizes sound, images, and motion in addition to a printed text" (Task Force on Distance Education: 1992).

Online educational "communities" already provide on-demand customized education to subscribers. In the twenty-first century, people will study what they want, whom they want, when they want, where they want, and in the language they prefer, electronically. Electronic Mediated Distance Education (EMDE) will not be a matter of science fiction, but the lifeblood of the worldwide knowledge-based economy. The marketplace for many educational services will be global, with great increases in the quality of education available to the individual at lower real costs per capita than conventional education today. "Computer, television, cable, satellite, laser, fiber-optic, and microchip technologies will combine to create a vast interactive communication and information network that can potentially give every person on earth access to every other person" (Barber:1992).

While technology today makes it possible for students in an African village to access the same "global brain" of the world's information resources as those in New York, India, Paris, Tokyo, or Britain, the "hardware", and perhaps more importantly, the "software" of social, political, economic and organizational arrangements to permit this are lagging well behind the technological potential.

The latest trends in education show that higher education institutions have begun to cater for a wide variety of geographically dispersed students. There is a growing interdependence among institutions. Many well-known regional, national and international higher education institutions are turning globally in terms of offering courses in several countries. A new culture of global education is being born. We will soon see a number of institutions specializing in international education and training.

Several institutions specializing in distance education have earned national and international prominence in the academic field. Britain's Open University (OUUK), with headquarters in Milton Keynes outside London, has gained worldwide attention and many countries have developed their own open universities on this model. Founded in 1969, the British OU is now the largest British University, employing a full-time staff of over 3000. Although television is used extensively, about 90% of the material used by the British OU are print-based. Face-to-face encounters with tutors in a large number of regional centres supplement print and televised materials. Through its Project LINK with the Russian space agency, British OU is active in Russia today, but it currently relies largely on print materials and videotapes with supplementary contact sessions.

In the United States, National Technological University (NTU) and the Mind Extension University (MEU) rely heavily on satellite television to distribute the courses of a group of participating conventional universities. NTU was founded in 1984 and it offers a wide range of advanced science and engineering courses using live, satellite-based narrow-cast instructional television, sometimes backed up by E-mail. Some 45 technical universities in North America unlink to NTU's transponder using compressed digital television and there are down-links in these same universities together with

approximately 500 sites in high-tech companies and governmental agencies. Both degree courses and continuing education seminars are offered. NTU seeks to be fully global by the year 2002. MEU employs a similar concept based on satellite and cable television, focusing mainly on technical and business courses, some of which permit interaction with the instructor and other students by telephone and/or E-mail. Of particular interest is the Educational Technology Leadership masters' degree programme established in 1988 at George Washington University using MEU to meet a growing need among education professionals to understand, manage, and use electronic educational technologies. The student body for this programme is international.

In Europe, the European Association of Computer Enterprises (EUROPACE) operates much as does NTU in the United States. EUROPACE is an organization of institutions and companies active in the field of education and training which use multimedia and satellites for the dissemination of education and training across Europe. Established in 1989, it is headquartered in Leiden, the Netherlands and has a network of more than 700 registered receive sites. The programmes range from vocational training to post graduate education, from informal adult education to programmes for secondary schools.

China's Central Radio and Television University (CRTVU) is an institution of higher education directly under the State Education Commission. It runs multimedia distance higher education courses using radio, television, printed, and audiovisual teaching materials. It was inaugurated in February 1979, and now heads a modern distance education system made up of CRTVU, 43 Provincial, Autonomous Regional, and Municipal TV Universities (PRTVUs), 654 branch schools at prefecture and city level, 1500 work stations at the

county level, and more than 10,000 teaching classes that cover China's rural and urban areas. While initially using China Central Television's microwave network, the whole Chinese distance education system centered on CRTVU now makes use of a Chinese satellite capable of reaching all of China plus neighbouring countries in Eastern, Central, and Southeast Asia. With 146,000 entering students, 300,400 students matriculated, and 120,000 graduates in 1992, CRTVU is probably the world's largest university.

Current distance education literature supports the thesis, that, modern digital and telecommunication technologies can deliver information and impart knowledge equal to and, if used efficiently, even better than traditional means. Research on delivery modes and their correlation to student achievement outcomes has shown that students learn better via tele-training mode than face-to-face instruction (Chute, Balthazar and Poston:1989; Task Force on Distance Education:1992). Course design and overall quality of instruction are also usually better in Electronic Distance Education (EDE) courses than in traditional classroom instruction. The new electronic technologies such as CD-ROM interactive disks, computer bulletin boards, and multimedia hyper-text available over the global Internet using the World Wide Web can provide students with far greater involvement in the process of learning and allow them the exercise of far greater control over that process than is possible in many traditional learning environments. Integrated sound, motion, image, and text create a rich new learning environment awash with possibility and a clear potential to increase student involvement in the learning process. The interactive capabilities of both program and delivery systems allow for feedback, dialogue, and on-going assessment that are impossible in all but the most localized and direct applications of resident instruction" (Task Force on Distance Education:1992).

1.2. RATIONALE FOR THE STUDY:

The opening and widening of the infobahn of the 21st century has resulted in an unprecedented growth of globalization and massification within all educational landscapes of the world. Globalization and massification demands an educational system free of traditional and conventional epistemologies usually characterised by closed knowledge systems controlled and driven by a canonical norms of traditional disciplines (NCHE, 1996:5). Educational systems will have to undergo major paradigm shifts in so far accommodating the various changes in the political, social and economic environments. Perhaps, the greatest changes and challenges will have to be faced by the educational communities. Thus the crucial question is whether these changes will be led by the educational community themselves or will it be forced upon them by the realities of societies in crises. This new economic and social phenomenon known as globalization will place heavy burdens on educational communities to either adapt or collapse. Educational systems will have to shy away from their traditional modes of educational access and delivery to a more open knowledge systems that is in dynamic interaction with external social interests, consumers and client demands. To a large extent educational systems will be inundated with the process of a massification (NCHE,1996:5) where there will be increased participation within the systems as regards learner enrolments(children, youth and adults); diverse learner compositions in terms of race, class and gender; diversification of programmes, curricula and qualifications; the introduction of multiple entry and exit points and the fostering of new relationships between learning/study and the work place.

Together with the challenges of globalization and massification, many countries are still grappling with the unsurmountable problems of equity and access as regards educational opportunity. Although the majority of both developed and developing countries are spending the largest slice of their budget on education, they are still unable to ensure an equal and equitable distribution of educational resources. Many educational systems are thus

turning their attention to alternate systems of education which are usually driven by modern technologies. South African inherited an educational landscape that was highly fragmented along the lines of race and class. The apartheid higher education landscape was skewed towards the white minority who enjoyed the privledeges of increased funding in terms of human, physical and technical resources.

This resulted in restricted access and poor quality educational opportunity for the majority, namely the black community. Post apartheid has begun to see an exponential rate of massification within the educational sector. The glut for educational opportunity especially amongst the disadvantaged communities has been so overwhelming that the present government has great difficulty in addressing the needs of redress and equity. Post apartheid South Africa is thus faced with a huge challenge in terms of providing higher education for the masses who were denied this opportunity in the past. It is therefore imperative that South Africa begins to look at ways and means of developing alternate systems of education to satisfy the millions who have been sidelined and denied access to tertiary education under apartheid. The traditional formal schooling system is unable to cater and address the challenges posed by massification and globalization. The historic inadequacy of formal education, especially for the disadvantaged, has ensured that a majority of the adult population, both in and out of formal employment, had no schooling or inadequate schooling (White Paper I, 1995: 31). The South African educational system will therefore have the added responsibility of not only closing the educational void of children and youth but also that of the millions of illiterate adults. Thus the South African educational landscape will have to address the challenges of globalization, massification, redress, equity and adult basic literacy (ABE). This mammoth task will require educational authorities to seek innovative alternate forms of education. In this regard there is overwhelming evidence that modern emerging technologies employed in distance education and virtual reality will go a long way towards bridging the educational gap between the advantaged and disadvantaged communities of

South Africa. The Technology Enhanced Learning Investigation (TELI) discussion document was released by the National Department of Education in 1996. This discussion document proposed various recommendations on how technology could be implemented within the South African educational system. However very little has followed upon the release of this discussion document in terms of policy formulation and implementation.

There is widespread debate as to the effectiveness and efficiency of alternate systems of education. This is attributed largely to traditional delivery systems still being employed in alternate systems of education such as distance education. However, the technological revolution precipitated by globalization has diffused various types of technologies that has enhanced educational delivery at a distance. The infobahn is characterised mainly by third and fourth generation technologies such as teleconferencing, videoconferencing, radio broadcasts, satellite transmissions, electronic mail delivery, e-mail, internet, virtual reality, computer interface delivery mechanisms, etc. These technologies make distance education more effective, efficient and innovative. Success stories of distance education have been recorded throughout the world, especially, those distance education systems where technology was ceremoniously employed. At this juncture it is important to understand exactly what is distance education and virtual reality.

What is distance education?

Distance education is not a new field or topic. Distance education has been capturing the interests of educators and educational authorities throughout the world as a result of the proliferation of modern technological advancements that introduced a myriad of educational delivery systems. Distance education thus has a long and distinguished history, growing out of and evolving from early correspondence courses, extended education, open education and distance learning, using primarily, print based materials. From these humble beginnings, distance education has now moved into the realm of a worldwide

movement using modern electronic delivery systems such as broadcast radio, broadcast television, computer conferencing, telephonic conferencing, satellite conferencing, video conferencing, electronic mail, interactive video, hypermedia, cyberspace, virtual reality , multimedia computer technology, etc. Grimes (1987) defines modern distance education as taking instruction to the student through technology rather than the student to the instruction. Bates (1995) argues that distance education is any formal approach to learning in which the majority of the instruction occurs while the educator and learner are at a distance from each other. There are numerous definitions of distance education. It is also important to note that these definitions are ever evolving due to the emergence of new technologies. However, the rationale for distance education will always remain the same in terms of promoting access and equality of educational opportunity.

Technology enhanced distance teaching and learning

It is a common misconception that face-to-face classroom instruction can be videotaped and distributed to produce multimedia-based courses. The fact of the matter is that it takes considerable time and effort as well as expertise to design and develop quality multimedia. Once developed, however, the course materials may be used again and again. Thus, in the long run, despite the initial investment in time and money, technology driven distance teaching and learning is very cost-effective. In order to make them more effective, multi media driven courses, should be designed for maximum teacher-student and student-student interaction. To be more attractive to the adult population, course content should be relevant and challenging, transmitted visuals should be of high quality, and the cost should be less than face-to-face instruction. The use of a variety of media within and among courses should be considered during course design and curriculum planning stage. Certain concepts from traditional classroom learning that are absent in conventional distance learning modes can be accommodated with computer communications (Maule 1993).

Currently, a variety of media are used in distance teaching. They include instructional television, audio-graphics, compressed video, computer conferencing, and audio/video conferencing. The new technologies entering the technology arena are all digital in nature (e.g. hypermedia, computer networks, integrated data systems, digital television).

In future "virtual" classrooms and worldwide lecture halls will be the norm in distance education. Paulsen (1987:213) describes a virtual school as an information system. "This entails the gathering, processing, storing, transmitting, and presenting of information. These activities may be performed manually by people or automatically by computers." A virtual school will not exist as a physical entity with all the accompanying paraphernalia but it can perform all the functions and assume the responsibilities of a regular school.

Computer-mediated instruction improves teacher-student interaction and thus enhances the learning process. Due to its objective nature, students feel free to express their views and opinions on any subject matter. Students using computer networks to communicate with their peers contribute to both learning and teaching processes.

One of the biggest advantages of electronic networks is the rapid dissemination of information. Spreading and sharing of new thoughts and ideas get new results via networks -- the wider reach and unbiased inputs obtained through network-based interactive communication enhances the whole spectrum of educational experience. Networking has the added benefit of information sharing among educators and researchers. Users from all over the world are able to communicate and share ideas.

It will also bring together knowledge and research from all corners of the globe to a common platform. This will eventually create global standards in scientific fields within the educational landscape.

The Internet links universities, research institutions, libraries, small and large businesses and corporations, and millions of individuals around the world. The most powerful technologies, intended for gathering information worldwide over the Internet are: E-mail, Mosaic, and videoconferencing (Galitsky, A. et al., 1994). The rate of growth of e-mail, outside the United States, was 183 percent (Internet Society, 1994).

Users of Internet can instantly exchange text, graphics, sound, video or data with anyone, anytime, and anywhere, and this has been made quite simple by "front-end" interfaces such as Mosaic, a software developed by the National Center for Supercomputer Applications at the University of Illinois and available free over the Internet. Using Mosaic, and the World Wide Web developed at CERN in Geneva, Switzerland, Internet users can easily scan worldwide multimedia computer sites and retrieve necessary information. Resources will be at researchers' fingertips within a matter of minutes. Full-color, full-motion video can be retrieved with Mosaic with great ease. This makes asynchronous, "just-in-time" individualized education, which can be retrieved around the globe, a real possibility.

Cyberspace offers limitless possibilities for education in general and EDE in particular. The collaborative work environments created using multimedia technology will increase student interaction giving new possibilities to distance learning.

Asynchronous communication made possible by computer conferencing, electronic mail, and voice mail allows students to control the time, place, and

pace of study and also to interact with other students (Miller 1992). In the coming years, EMDE will undergo revolutionary changes when students will gain access to large databases and dial-up and on-demand information services.

Most of the developing countries are unable to provide even basic education to all segments of their population. The industrialized nations cannot contain the ever-increasing costs of education, and now face the increased demands for life-long continuing education of the knowledge-based economy. Distance Education will be the logical solution to the imminent crisis in education, the world over. EMDE can ride the technological wave of the digital revolution that could make the dream of education for all a reality.

Virtual Reality (VR)

Virtual Reality has many names and many definitions. Synonyms for VR include cyberspace, virtual environment, virtual world, etc. Keegan (1986) defines virtual reality as three dimensional computer generated, multi-dimensional inclusive environments which can be accepted by the participant learner as being cognitively valid. Helmic (1997) argues that virtual reality uses the computer and a variety of accessories to create simulations of the human experience. Its purpose is thus to improve communication in all forms between humans, machines and other beings.

According to Hedberg (1994), virtual reality as a technology in education offers the possibility of allowing learners to participate in communities of practice, and hence move their status as a novice into the realm of the expert. Simulating a world in which the learner moves towards full participation should prove to be a powerful environment for understanding, and also help with the transfer of concepts to new contexts. Thus the introduction of VR into educational systems are in essence a priority that can ill be afforded.

Although the initial costs in setting up and developing VR are enormous, the long term benefits far out weighs the issue of cost (Alexander, 1994: 215)

1.3. NEED FOR THIS STUDY

According to Mbeki (2000:1) "the [South African] higher education system has strengths and immense potential to contribute to the economic and social development needs of South Africa, the Southern African region and the African continent. However, the present system also has a number of fundamental problems and serious weaknesses as a result of its apartheid past and developments during the past decade. These problems and weaknesses severely compromise its ability to effectively and efficiently achieve important national goals and serve various social and educational purposes for the 21st century".

Indeed higher education must help erode the inherited socially structural inequities and provide opportunities for social advancement through equity of access and opportunity. It must produce, through research, teaching and learning and community service programmes, the knowledge and person power for national reconstruction and economic and social development to enable South Africa to engage proactively with and participate in a highly competitive global economy. Given the apartheid legacy and the social and developmental challenges, the higher education transformation agenda has to be radical and comprehensive. It also needs to be pursued with particular urgency.

This study is thus an attempt at identifying, evaluating and analysing South African trends in the employment of technology driven alternate systems of education, namely distance education. There can be no doubt about the effectiveness of distance education in its' role of contributing meaningfully to

the governments' agenda of reconfiguring the higher education system so as to meet the demands of the 21st century as envisaged by the educational authorities of the South African government.

This study will provide an in depth analysis as to how technology enhanced alternate systems of education could enhance the promotion of open learning which in turn could open up access to the thousands of disadvantaged students wishing to pursue a higher education qualification. Many countries throughout the world have begun to recognize the value of distance education as an alternate system of education in bridging the equity and access gap that has been created by lack of resources. Indeed distance education is imperative if we are to consider making our citizens active participants in the globalization process that has taken the world by storm. Alternate systems of education will have to be sought so that training, retraining and in service training programmes are offered on an ongoing basis. All learners (children, youth and adults) must be able to enter and exit our educational system in a flexible manner so as to ensure life long learning. The study will provide in-depth analysis and synthesis as to how technology enhanced alternate systems of education could assist in bridging the gap between the educationally advantaged and educationally disadvantaged communities of the world. It will also give valuable insight into how alternate systems of education could be employed in improving educational access and equality of opportunity. Thus this study will be significant in so far as providing international perspectives and trends on how alternate systems of education are being adopted and forged within the context of higher education.

The South African higher education system is busy grappling with the problems of size and shape and it is hoped that this research study will provide valuable inputs and data on how alternate systems of education namely, distance and virtual could assist in addressing size and shape of higher education. There is no question about the fact that higher education is beginning to undergo huge transformation agendas throughout the landscapes

of the world. The knowledge society brought about by the information revolution has begun to demand a new paradigm wherein knowledge production and application has to be reconceptualised. In this regard alternate systems of education could provide valuable paradigm shifts in supporting higher education in our country.

In essence the study will be of great benefit to the South African educational authorities who are presently grappling with the processes of globalization and massification. Many recommendations and findings of this study will offer serious and researched advice to educational authorities on how to cope with educational challenges of the 21st century.

1.4. OBJECTIVES / PURPOSE OF THE STUDY:

The primary intent of this research study is to:

1.4.1. Examine the role of technology in the delivery and provision of distance education and online learning in South Africa.

1.4.3. Assess the popularity of distance education amongst higher education students

1.4.4. Examine the quality and type of support being offered by higher education distance providers to students

1.5. KEY QUESTIONS TO BE ANSWERED :

1.5.1. How popular is distance education amongst tertiary education students in South Africa?

1.5.2. What type of learner support is being offered by distance and online learning institutions to their students?

1.5.3. What levels of technology are being employed in distance education delivery modes in South Africa?

1.6. RESEARCH APPROACH AND METHODS:

This research is an empirical study, that is based on both qualitative and quantitative research. This study attempts to identify the popularity of distance education, type of support offered to distance learners and the role of technology in distance education provision in South Africa.

1.6.1. Literature reviews:

Literature review from books, journals and conference proceedings were conducted as widely as possible. Amongst others, the following authors and editors made up the primary literature source:

- Michael G. Moore (Director of the American Centre for Distance education and Editor in Chief of the American Journal of Distance Education;
- David Sewart ;
- Niel Butcher (Projects Manager: Distance Education – South African Institute of Distance Education);
- Jennie Glennie: Director SAIDE
- Desmond Keegan
- Glen R. Jones: Founder of Jones Digital Network
- Tony Mays (South African persepctive on distance education)

The following Journals were consulted as a primary source of information:

- American Journal of Distance Education
- Australian Journal of Distance Education
- Educational Media International
- The Higher Education Chronicle
- South African Journal of Education

The following Distance Education Web Sites were used:

- http://www.Irdc.edc.gov.ab.ca
- http://www.apple.comdragon.acadiau.ca
- http://www.askeric.org
- http://www.saide.org.co.za
- http://www.etc.bc.ca
- http://www.uwex.edu.
- http://www.ed.gov
- http://www.distance-educator.com
- http://www.cudenver.eduslis.ualberta.ca

The following Listserves were subscribed to:

- listserve@nic.umass.edu
- liserve@usq.edu.au
- liserve@sjuvm.bitnet

1.6.2. Research Type:

The survey research method will be employed. The following two instruments will be used, namely:

- Questionnaires (Open and closed ended)
- Interviews

1.6.3. Questionnaires:

Questionnaires consisting of both open and closed ended questions were constructed. There were two different questionnaires administered for:

- Distance education students
- Distance education staff

1.6.4. Interviews:

Structured open ended interviews were conducted with:

- Mrs Jennie Glennie, the Director of the South African Institute of Distance Education (SAIDE)
- Niel Butcher from SAIDE

1.6.5. Sample population:

The sample population will consist of students studying at the following distance education institutions, namely:

- University of South Africa (UNISA) and
- South African College of Open Learning (SACOL)

1.6.6. Sample Size:

- Students - 1000 from UNISA and 150 from SACOL
- Staff - 300 from UNISA and 50 from SACOL

1.6.7. Presentation of data:

Data is to be presented in the form of tables, graphs, scatter grams, charts, etc in chapter four of this research study. All data collected were coded and decoded using the SPSS package.

1.7. LIMITATIONS OF THE STUDY:

Due to the constraints of time, distance and cost, the sample population is not very wide. However, the researcher will aim to target the population in such a way that it is as representative as possible of all students studying via distance in South Africa. No doubt, it would have been most desirable to include all the institutions that provide distance education in South Africa. Secondly, while

this research is being conducted, various new technologies are busy proliferating within the educational landscape. It might thus occur that one or two new technologies may not be discussed in this research and may be omitted. Literature from a South African perspective on distance education are very few and thus an in-depth meta - analysis could not be carried out.

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CHAPTER TWO:
LITERATURE REVIEW

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2.1. INTRODUCTION

Distance education is not a new phenomenon. It has been in existence for the past one hundred and thirty years. According to Peters (1989), distance education has its roots firmly embedded in correspondence study. The early form of distance education was predominantly via correspondence studies. Peters (1989) thus argues that the growth of correspondence study into distance education can be largely attributed to the industrial revolution. There is no doubt that the industrial revolution gave rise to a more speedy, efficient and reliable transport mode, namely air, road, rail and water. Correspondence studies by its very nature depended on a fast, express delivery system where the dissemination of study material was ensured. The growth of a strong, efficient and reliable postal service thus began to make correspondence study more attractive and popular amongst learners.

The historical context from which distance education emerged is important and useful in understanding the evolution of distance education from its text/print based correspondence course format to one that is now being underpinned by high levels of technology application.

Early examples of distance education are generally attributed to the late 19th century, when formal correspondence courses were developed. According to Jones (1997), the first distance education learner to receive a full university credit was in the 18th century when a home bound student on a remote agricultural estate, made informal arrangements with the university lecturer to receive full course notes and text books by mail and completed examinations in writing. It was alleged that the lecturer actually pocketed an "incentive fee" from the student and university officials were never aware that the student on the class roll / register was a phantom.

Distance education has thus had a very long and distinguished history. Its evolution and metamorphosis over the past century has been most fascinating and interesting. From very humble beginnings of correspondence study, distance education has now developed into a significant discipline in its own right within most educational landscapes of the world. According to Jones (1977), the future of distance education appears to be assured due to the privatization of life in many societies and the incapacity of full time educational institutions to cope with the demand for educational massification.

The popularity of distance education has had wide appeal in both the developing and developed countries. In developing countries distance education provides the possibility of supplementing or even perhaps replacing conventional teaching methods. According to Sewart (1984), the supply of trained and competent teachers is often severely restricted in developing countries. Sewart (1984) thus argues that distance education materials and resources can be produced by a small group of skilled teachers who would be able to set a high standard and quality of work. Ultimately this can result in bypassing the need for training a generation of new teachers. In this way distance education will significantly reduce the time scale for educational massification.

According to Wedemeyer (1981), the best known example of how distance education bridged the educational massification gap can be seen from the Indian perspective. He quotes extensively from an UNESCO Report (1980), which cited a strong partnership between UNESCO and the Indian Government that was established to promote and facilitate distance education amongst secondary school learners. The UNESCO Report (1983) concluded that a large number of "drop outs" from the conventional educational system were able to access educational opportunity via distance learning and teaching. These so called "drop outs" were

more often than not, forced to abandon conventional school mainly for economic reasons so as to seek employment. The UNESCO report also pointed out that there was a very large percentage of secondary school pupils who were unable to enroll and register at state schools because of a shortage of classrooms and teachers. These pupils were termed "left outs"

Distance education has also become highly popular in developed countries. Sewart (1984) state that reasons for employing distance education in developed countries is more complex. He goes on to argue that in developing countries the cost factor within the educational system has been the chief reason for applying distance education. The cost of training and employing teachers, the introduction of new courses and the lateral expansion of knowledge has outstripped the supply of new teachers. The fact that face to face institutions are unable to cope with accepting new students has been a significant factor in popularizing distance education in developed countries.

2.1.1. The evolution of distance education

Understanding the history of distance education is valuable in that it shows there was more than one historical path to distance education and that the evolution of distance education has not been easy. According to Simerly (1989), many of the same problems facing implementation and acceptance of educational innovations today have been faced by distance education throughout its history.

The history of distance education could be tracked back to the early 1700s in the form of correspondence education, but technology-based distance education might be best linked to the introduction of audiovisual devices into the schools, universities and colleges in the early 1900s. The first catalog of instruction films

appeared in 1910 (Reiser:1987) and in 1913, Thomas Edison proclaimed that, due to the invention of film, "Our school system will be completely changed in the next ten years" (Saettler, 1968: 68). This dramatic change didn't occur, but instructional media were introduced into many extension programs by 1920 in the form of slides and motion pictures just as they were in the classroom or lecture hall.

In tracing the history of distance education, the introduction of television as an instructional medium appears as an important entry point for theorists and practitioners outside of the correspondence education tradition, and marks parallel paths for correspondence study and instructional media.

Although instructional radio failed in the 1930s, instructional television was viewed with new hope. In 1932, seven years before television was introduced at the New York World's Fair, the State University of Iowa began experimenting with transmitting instructional courses. World War II slowed the introduction of television, but military training efforts had demonstrated the potential for using audio-visual media in teaching (Wright:1991). The apparent success of audio-visual generated a renewed interest in using it in the schools and in the decade following the war there were intensive research programs (Reiser:1987). Most of these studies were directed at understanding and generating theory on how instructional media affected classroom learning.

The 1940s saw great interest in television by educators but little action (Porter, 1958) and by 1948 only five U.S. educational institutions were involved in television with Iowa State being the first on the air. Early studies by educators tended to show that student achievement from classroom television was as successful as from traditional face-to-face instruction. A study by Barber (1957)

showed only borderline differences in achievement, and Lapore and Wilson (1958) offered research showing that learning by television compared favorably with conventional instruction.

By the late 1950s, 17 programs used television in their instructional materials. The use of educational television tended to grow slowly but by 1961, 53 stations were affiliated with the National Educational Television Network (NET) with the primary goal of sharing films and coordinating scheduling (Perry,1975). Although instructional television would never realize what many thought was its potential, it was having limited success and had, unlike instructional radio, established a foothold in the minds of educators.

In 1956 the Correspondence Study Division of the NUEA conducted a study of the use of television to support correspondence instruction (Wright:1991). The survey report recommended research to measure the effectiveness of television as an educational tool and, with a grant from the Ford Foundation, Childs (1982) studied television instruction in combination with correspondence study. In one of the earliest education verses media studies, Childs (1982) concluded that television is not an instructional method, but an instrument for transmitting instruction. He also found no appreciable difference in the achievement level of students taught in regular classrooms by means of television or by a combination of correspondence study and television (Almeda: 1988).

In the early 1960s, the innovative Midwest Program on Airborne Television Instruction (MPATI) launched its "flying classroom" from an airfield near Purdue University in Lafayette, Indiana, to broadcast instructional programs to school systems and the general public in Indiana and five surrounding states (Smith, 1961). At its peak, MPATI would transmit educational television programs to

nearly 2,000 public schools and universities reaching almost 400,000 students in 6500 classrooms in Indiana and five surrounding states (Gordon:1965). This experiment in learning was the culmination of an educational vision for some educators and the result of a $7 million grant from the Ford Foundation (Carnegie Commission:1979), a small part of the $170 million spent by the foundation.

Although the airborne teaching experiment came down in 1968, the MPATI project succeeded in several ways, including stimulating enough interest in educational television (ETV) in its region that new ETV stations were started. Many schools began using their own closed circuit television (CCTV) systems, and others began experimenting with Instructional Fixed Television Service (ITFS) microwave systems.

The number of educational television stations grew more rapidly in the 1960s and, by 1972, 233 educational stations existed (Carnegie Commission, 1979). Ohio University, University of Texas and the University of Maryland were among the earliest universities to create networks to reach for both on-campus and off-campus student populations (Brientenfield:1968), and many universities were considering how to bring distance learning to select student populations. By the mid 1960s, much of the interest in funding instructional television had abated, and the Ford Foundation shifted its support to public television. Much of the blame was placed on the mediocre quality of the instructional programming which was often little more than a teacher delivering a lecture (Reiser:1987). The 1967 Carnegie Commission on Higher Education (1979: 80-81), concluded that "the role played in formal education by instructional television has been on the whole a small one... With minor exceptions, the total disappearance of instructional television would leave the educational system fundamentally unchanged". Reasons given for instructional television not being adopted included teacher resistance to

television in the classroom, the expense of the television systems, and the inability of television alone to meet the various conditions for student learning (Reiser:1987).

In the late 1960s and early 1970s, microwave technology developed, costs went down, and universities began to set up microwave networks to take advantage of the Instructional Television Fixed Service (ITFS) authorized by the Federal Communications Commission. The Carnegie Commission on Higher Education predicted that, by the year 2000, more than 80 percent of off-campus and 10 to 20 percent of on-campus instruction would take place through telecommunications (Carnegie Commission:1979). Systems utilizing ITFS technology were able to reach regional campuses and other universities, but it remained a closed circuit concept (Wood and Wylie:1977) reaching only the sites linked to the system and not the general public. It did appear that, for the first time, distant students were considered part of the extended classroom, and television existed to access those not able to come to campus (Dean:1982).

2.1.2. Educational Experiments and Change in Higher Education

According to Watkins (1991), alternatives to traditional higher education throughout the world only emerged in the 1960s and 1970s. Trends such as escalating college costs, a renewed interest in nontraditional education by a more mobile population, and success of Britain's Open University paved the way for numerous experiments in higher education (Garrison:1987). Programs such as the University Without Walls, external degree programs, and imitations of the British Open University appeared to be very encouraging and appealing.

The instructional technology movement was also beginning to define its purpose during the late 1960s and moving further away from equating

instructional technology with audio-visual devices (Reiser:1987). In 1970, the Department of Audiovisual Instructional changed its name to the Association for Educational Communication and Technology, and defined educational technology as "a field involved in the facilitation of human learning through the systematic identification, development, organization, and utilization of a full range of learning resources (AECT, 1972:36-37).

The same period saw an increased attention to instructional technology and "systems" approaches to the design of instruction based on theories of cognitive psychology and individualized instruction (Reiser:1987).

The history of distance education shows a field that appears to be in a constant state of evolution, that is supported by theory, but in need of research which can fill many unanswered questions. The historical view of distance education shows a stream of new ideas and technologies balanced against a steady resistance to change, and it often places technology in the light of promising more than it has delivered. History shows non-traditional education trying to blend with traditional education while striving to meet the challenge of constantly changing learning theories and evolving technologies.

The term "distance education" is a relatively new one. The theoretical basis/assumptions of the concept "distance education" emerged from what was originally termed "correspondence study". Correspondence study emerged as an alternate system of education catering mainly for adults who wished to further their educational training. According to Keegan (1981) correspondence study really took off after the First and Second World Wars. Many of the adult males were listed in the army during this period and once the wars were over these soldiers and army personnel began to continue with their studies via

correspondence education.

Sewart (1984) strongly believes that the Industrial Revolution of the 18th century was the key factor in the popularization of distance education. Wedemeyer (1981) also states that the evolution of distance education was underpinned by innovation and new development in technology and thus the evolution of distance education can be seen to have passed four different phases each of which was as the result of developments in technology. Indeed, there is no doubt about the fact that four distinct phases in the evolution of distance education can be mapped out.

While concurring with distance education specialists such as Keegan (1981), Wedemeyer (1981), Sewart (1988); Moore (1990) reminds us that we must not place too much emphasis on the role of technology in the evolution of distance education. They state categorically that distance education to date is still very much reliant on the tried and tested mode of deliver, namely print based correspondence modes. Indeed while it may be true that the back bone of distance education delivery very much rests on print based correspondence studies, it is also naive to lose sight of the role of technology in the evolution of distance education.

According to Holmberg (1981) the first forms of distance education was offered as early as 1728 when an advert appeared in the Boston Gazette of 20th March. The advert indicated that Master Caleb Philips was dispatching lessons on Shorthand via mail to interested persons at a nominal fee. Chander (1991) also found documented evidence which shows that distance education was offered as early as 1833 when an advert appeared in a Swedish Newspaper advertising for the teaching of composition writing via the medium of the post. Allbright (1988),

Holmberg (1981), Sewart (1988) argue that the turning point in the commercialization of distance education came about in 1840 when Mr Isaac Pittman offered a Shorthand Course via correspondence education in the United Kingdom. The popularity of this course was so great that in its second year of offering, more than 300 hundred students had registered/enrolled for the course.

Distance education began to increase its popularity in many countries thereafter. Japan established its first fully-fledged distance education institution in 1886. It was called the Tokyo Special Training School (TSTS). This school provided courses via correspondence in the form of "mailed texts" to adults who were employed in the Japanese Army and industries. The TSTS was so popular that in 1890, it began to offer "evening classes" to students who wished to further their education and training. The University of Chicago was the first formal institution to provide distance education in the United States. This took place in 1892.

Many of today's distance education institutions have been modelled along the lines of the United Kingdom's highly innovative British Open University (BOU) which was founded in 1969. According to Jones (1997:36), "the BOU quickly became an international distance education model by making college and university learning available to the general public". The BOU opened its doors to distance learning and defied the principle of "education for the elite" (Keegan, 1981:212). One of the greatest contributions of the BOU was that it helped to set the precedent for the use of radio, video and television to deliver distance education courses.

Indeed, the stage was set for the increased growth in the establishment of distance education institutions. Educational landscapes throughout the world

began to recognize the important contribution of distance education in terms of increasing access to education, especially tertiary education. The following table provides a list of distance education institutions in order of their founding and country of origin:

COUNTRY	NAME OF INSTITUTION	YEAR
South Africa	University of South Africa	1951
Spain	Universidad Nacional de Educaion a Distancia	1972
Israel	Everyman's University	1974
Pakistan	Allama Iqbal Open University	1974
Costa Rica	Universidad Estatal a Distancia	1977
Venezuela	Universidad Nacional Abierta	1977
Thailand	Sukothai Thammathirat Open University	1978
Turkey	Anadoulu University	1981
China	Central Radio and Television University	1982
India	Indira Ghandi National Open University	1985
Taiwan	National Open University	1987
Hong Kong	Open Learning Institute	1989

Table 1: Distance education institutions in order of their founding and country of origin:

At present the Central radio and Television University of China as an enrolment of one and half million students and this makes it the largest distance education institution in the world. The University of South Africa presently has a student enrolment of one hundred and forty six thousand.

2.1.3. Developments in distance education:

2.1.3.1. Phase one: First Generation Distance Education

Phase one is characterized by two different types of distance education models, namely one way communication and two-way communication based distance education.

2.1.1.1. Model One: One way communication

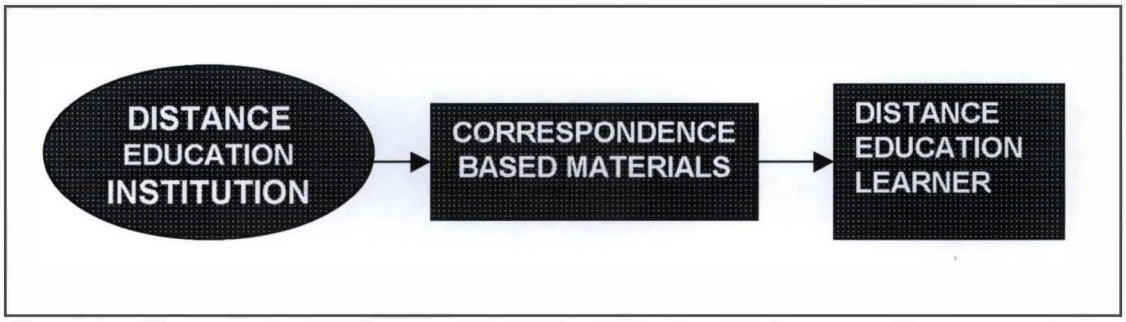

Figure 1: One way communication

In this phase, distance education was practiced in the form of one way communication between the distance education institution and distance education learner through print-based correspondence materials. Such communication took place through the postal correspondence delivery system. Thus the term "correspondence study" was coined during this phase. The Industrial Revolution, which resulted in improved modes of transport (road, rail, air and water), was one of the major influences of this phase. This phase, according to Sahoo (1994) was underpinned by the assumption that learning simply takes place through the reading of correspondence materials which were usually in the form of self instructional materials, reference books, text books, etc. Deshbandhu ((1994) states that the major limitations of this phase was the fact that once all the correspondence materials were produced and dispatched to students then the distance education lecturer/teacher felt that their work was complete.

According to Keegan (1987), there are many distance education institutions that are still locked in this traditional phase of distance education. Indeed there is nothing wrong with correspondence based print materials, however these materials must be appropriate, current and up to date. Print based distance learning materials must also be based on sound principles that relate to learner needs, efficient and timeous delivery and most of all the materials must be

interactive and guide the learner using a step by step approach. The print based materials must not simply fulfill the task of information and knowledge dissemination., they must go beyond that. Correspondence materials via the postal service mode, must illicit feedback from students and learners. These materials must be supported by holding regular face to face contact sessions. These contact sessions could be in the form of individual or group based tutorials sessions.

2.1.3.1.2. Model Two: Two-way communication.

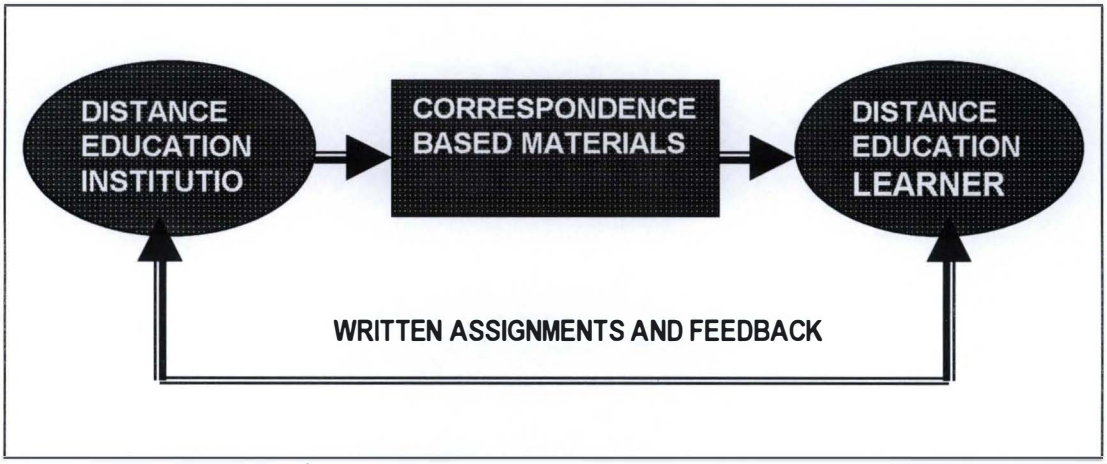

Figure 2: Two Way Communication

Towards the end of Phase One, there was a major breakthrough in the evolution of distance education. This breakthrough came mainly due to the contribution and recognition of "Communications Theory". The role of communications within the teaching and learning framework as a whole began to take on new meaning in so far as the design of teaching strategies and methods were concerned. Communications began to also develop as a discipline in its own right.

2.1.3.2. Phase Two: Second Generation Distance Education

This phase is also referred to as the second-generation evolution of distance education.

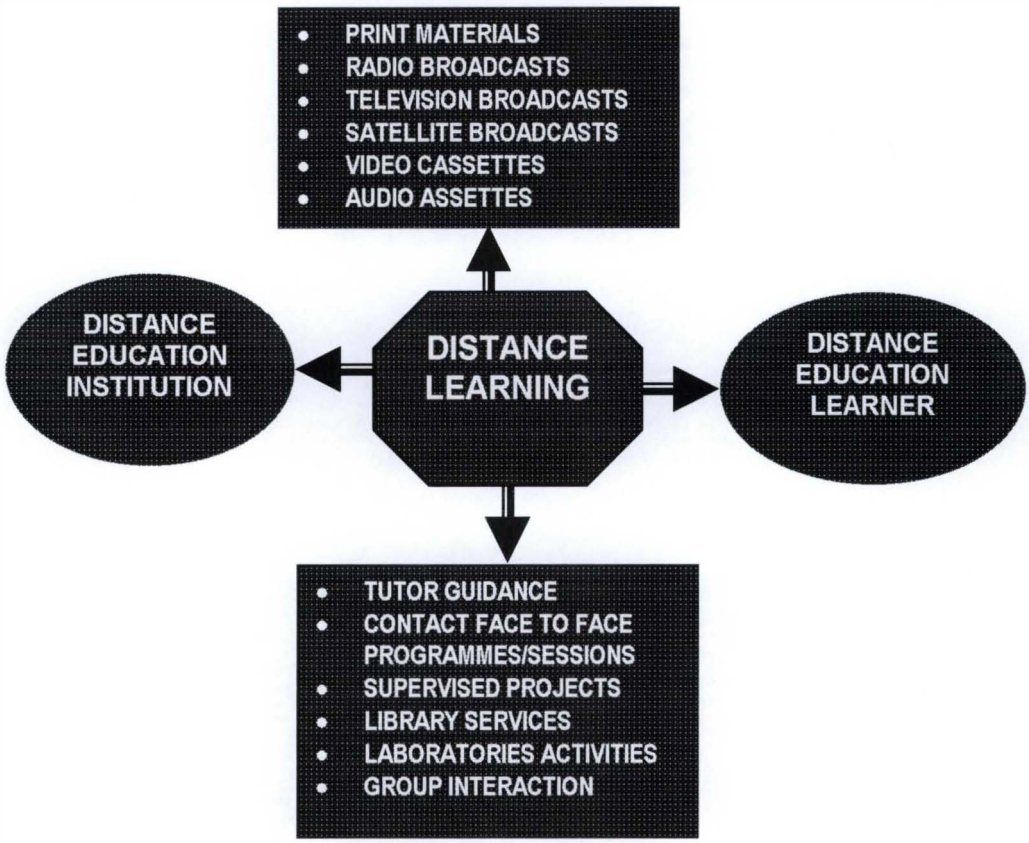

Figure 3: Second Generation distance education

The print-based model of correspondence education supported by distance instruction through written messages has survived the test of time and continues to be utilized intensively. However, as distance education has become more institutionalized, other media have been applied. A "second generation" of distance education through the 60s and 70s was characterized by heavy reliance on open broadcast by either radio or television, supported by correspondence

instruction and print materials. This phase in the evolution of distance education dates to the 60s and 70s where there was heavy reliance on open broadcasts via the radio and television. The open-air broadcasts were supported by print and correspondence based materials. The British Open University (BOU) was the forerunner in the adoption of radio and television broadcasts in distance education. The BOU popularized the radio and television delivery of distance education in the world. Other countries such as Australia, Japan and the United States began to shape and develop their distance educational systems along the lines adopted by the BOU.

2.1.3.3. Phase Three: Third Generation Distance Education

The "third generation" of distance education has been characterized by teleconferencing systems. These began with audio conferencing but progressed to more sophisticated audio-graphic conferencing systems that supported the telephone audio conference with visual and text material (Barker & Goodwin:1992). Another parallel development has been video conferencing. Until recently this was a somewhat expensive alternative to the audio conference, but due to developments in digital computer-based desktop video, it is now becoming economically accessible to an ever larger section of the educational community (Parker & Olgren:1984; Tremblay: 1992).

2.1.3.4. Phase Four: Fourth Generation Distance Education

We are now entering a fourth phase of development of distance education based on the integrated use of new developments in telecommunications and computing and characterized by the integrated use of remote study materials supported by computer-based multimedia teleconferencing (Steinberg:1992). Integrated multimedia computer technology will provide the platform, which will

most resemble real-time, interactive instruction. Computer Desktop Publishing together with the Internet have revolutionized the way distance education is being articulated currently. Both the technologies mentioned above have created a new kind of environment where real time imaging and audio is possible. This gave rise to the conceptualization of concepts such as virtual, cyberschools, cyber-education, etc. The fourth generation distance education has been largely the by product of multi media applications in the delivery of distance education. With the continuous reduction of costs in computer technology, more and more institutions are beginning to invest in multi media technology.

2.3.1.5. Phase Five: Mixed Mode distance education

This phase is characterized by a combination of delivery methods, namely face to face contact tuition and tuition via distance. Many higher education institutions are beginning to introduce mixed mode course delivery in distance education. The reasons for mixed mode teaching are too numerous to mention. However, increased flexibility, increased access, increased productivity and the promotion of life learning have been the most significant advantages arising out of mixed mode instruction.

2.2. WHAT IS DISTANCE EDUCATION?

2.2.1. Introduction

It is perhaps an understatement to declare that there exist as many definitions of distance education as there are definitions of teaching and learning. The lack of a universally accepted definition has also impacted negatively on the growth of distance education into a discipline in its own right. The non-existence of a universally accepted definition thus makes the need to clarify the various

terminologies within the distance education framework. Indeed no progress can be made in terms of understanding and analyzing the theory and practice of distance education without first reaching agreement on the meanings of the various concepts that are being around within the landscape of distance education. The researcher therefore wishes to provide an in-depth analysis of the various terminologies and concepts that are being used within the framework of explaining what distance education is all about.

According to Chander (1991), the term distance education has been used generically and interchangeably to refer to a host of teaching and learning strategies commonly referred to as Correspondence studies, Home studies, External studies, Independent studies and Open learning. The consequence of using these terms has had telling influences on the growth and recognition of distance education as a major role player within the education system of the world. It is hoped that the following analyses of these terms will begin to refocus and clarify some of the misconceptions and false perceptions that are held within the educational fraternity.

2.2.2. Correspondence Education / Studies:

The term correspondence study is perhaps the most commonly used term that has been used to refer to distance education. There has been grave concern for this substitution and interchangeable use of the term correspondence study to denote distance education. Scholars such as Keegan (1991) and Sewart (1988) believe that the term Correspondence study is rather "off putting and sublime" in the context of describing distance education. They go further to remind us that , correspondence study definitely has a place in distance education, however, one needs to be guarded against the perception that both concepts can be substituted for each other.

According to Sewart (1988) distance education is made up of various subgroups and thus the term Correspondence education refers to that subgroup of distance education delivery that is based entirely on printed materials which are dispatched via the post. Student contact rests on the study of these print materials in developing their knowledge and skills. Keegan (1991) is also of the belief that correspondence study is one type of distance education delivery where face to face contact is replaced entirely by the dispatch of printed text books, workguides and reference material which is predominantly in the printed mode. Perry (1975) states very clearly that Correspondence study is not a suitable word for describing distance education. He goes on to add that didactically, Correspondence study does not have the potential to encompass distance education of the 1990s and beyond. The delivery of education via radio broadcasts, television broadcasts satellite broadcasts, videoconferencing, teleconferencing, computer based multimedia delivery modes or any other forms of audio-visual based delivery systems of distance education has shown to generate huge benefits in terms of enhancing the quality and access of education and training. Thus one cannot use the term Correspondence studies generically to refer to distance education. Distance education is a diverse system of delivery that makes use of a host of technologically driven media. Correspondence education is just one of the delivery modes that distance education employs.

There is no doubt that Correspondence study was one of the first forms of distance education delivery systems that has a history dating back to the 18th century. In the same vain it ought to be noted that every distance education programme depends in some way or the other on Correspondence studies where print based materials are sent to students from time to time. In some distance education programmes, correspondence study formats are still the norm. However the last three to four decades have shown marked changes in the original form of

correspondence studies. The changes are characterized by supplements of audiocassettes and videocassettes together with printed materials. Nowadays, correspondence studies also include face to face contact during certain parts of the study programme.

Tutorial sessions are also included in Correspondence studies, unlike in the past correspondence studies were solely based on print materials.

The researcher wishes to point out that, by its very nature, Correspondence Study, implies the sole use of postal services. Using this argument, it stands to reason that distance education via newspapers and other formats such as radio, television, etc cannot be labeled correspondence studies. When distance education is comprised solely on print, then the term "correspondence studies" is adequate to describe courses via other forms such as magazines and newspapers.

2.2.3. Home Study:

The term "Home Study" is indigenous to the educational landscape of the United States of America (USA). It is confined to the "further education sector" with reference to technical and vocational education. Thus "Home Study" has little claim to be a generic term as it is mainly used in the USA. Sewart (1988) argues that the "Home Study" student may not in fact only study at home. They may in part study at vocational centers and institutions where they fulfill the requirement of experiential learning in the form of practical application and in-service training. Moore (1973) states further that, Home Study materials usually consists of do-it-yourself (DIY) kits.

2.2.4. Independent Study:

Charles Wedemeyer coined the term "Independent Study" in 1961. Independent Study as a concept is widely used in the USA within the higher education spectrum. Wedemeyer (1981) believes that the concept "Independent Study" in the American context is generic to a range of teaching and learning activities that sometimes go by separate names such as Correspondence study, Open education, Radio and Television teaching and Individualized learning.

Wedemeyer(1981) thus defines "Independent studies as" ***"Independent Study consists of various forms of teaching and learning arrangements in which teachers and learners carry out their essential tasks and responsibilities apart from one another, communicating in a variety of ways, for the purpose of freeing internal learners from inappropriate class placing or patterns or providing external learners opportunity to continue learning in their own environments, and developing in all learners the capacity to carry on self directed learning, the ultimate maturity required of the educated person. (1977:211)***

Markowitz (1983) argues that the major weakness of the term "Independent study" is that it propagates the principle of independence from the educational institution and thus this should not be the case in distance education.

Sewart (1988) states that the term "Independent Study" should be rejected totally as a generic term referring to distance education. He provides the following three reasons for his rejection of the term "Independent study":

- The normal understanding of the term "independent study" must imply a different relationship to an educational institution and thus it cannot be equated to distance education and vice versa

- The ideal in distance education is never "independence" and as such a right mixture of "interaction and independence" ought to be attained. It is therefore logical that distance education and Independent study cannot be the same.

- Independent study in the USA is one where the student sets up an individual programme with the staff on a contract basis. The contract may include periods of normal lectures and face to face contact and study at a distance.

2.2.5. External Studies:

According to Mark (1990) the term "External Studies" is most widely used in Australia. The geographical location and sparse density of population in certain parts of Australia has resulted in many educational institutions providing tuition at a distance. The external students are part of the full time students and thus are not separate from the institution. For example a lecturer might have hundred students taking his/her course, 80 students may well be full time students at the face to face contact level. The other 20 students may be living in remote areas of Australia and as such have enrolled as external students.

2.2.6. Open Learning:

There exists a lot of confusion regarding the synonymous us of the terms "open learning and distance education". Distance education may share a lot of characteristics of open learning but they may not represent open learning in totality since each has its own epistemology, theory and philosophy. According to Sahoo (1994:57) "Open learning is understood as broad term which covers several alternate ways of delivering learning". In open learning, the learner has free access to alternative learning resources such as materials, strategies, methods, equipment's, activities and so on. The learner is regarded as an independent personality and as such they may not depend on the teacher/lecturer in terms of the choice of modules and programmes. In this way the decision making powers in open learning are vested solely on the learner rather than the institution or teacher/lecturer.

Moore (1997) argues that in open learning the autonomy in the setting of learning objectives, choice of methods of study and the undertaking of self evaluation are all vested with the learner. Bould (1988) provides the following principles, which differentiate open learning from distance education:

- Opting to undertake additional non teacher/lecturer directed tasks and work such as learning through self instructional kits, do-it-yourself manuals and kits
- Engage in self assessment and evaluation
- Learning and studying outside the confines of the educational institutions such as in the workplaces, home, etc
- Determine the criteria to apply to their work
- Do not seek assistance from tutors/teachers and lecturers

- Work independently and not collaboratively with peers/ teachers/lecturers
- Decide when their learning is complete

The above is not an exhaustive list but merely some of the principles of open learning.

2.3. DEFINITION OF DISTANCE EDUCATION:

2.3.1. Types of definition in Education:

Schramm (1997), a renowned American philosopher introduced the following schemata of definitions in education. He argued that there are two categories of definitions in education, namely General and Scientific.

- Scientific definitions are based on special knowledge, which is used to construct a network of theory that is adequate to all available facts encompassed in the definition.
- General definitions are statements that a given term is to be understood in a certain way for the space of some discussions or for several discussions. He also claims that there are three sub categories of general definitions, namely:
  - Stipulative definitions - state that a given term is to be taken as equivalent to some other given term with a particular context
  - Descriptive definition – answers the question "What does the term mean?" it always explains the defined terms by giving an account of its prior usage.

- Programmatic definition – is a definition with a purpose or a programme. It seeks to include additional items within a term or to exclude from a term, elements which people had previously thought were included.

From the above categorization, based on the recommendations of Schramm (1997), it becomes abundantly clear that the definitions around distance education is immersed in the stipulative mode. Time and time again scholars within the distance education framework continue to use terminologies interchangeably and synonymously. The need to find a scientific definition of distance education, is thus immediate.

2.3.2. Differences between Distance education and Distance learning

There is considerable debate as to the meaning of distance education. Scholars throughout the 1960s and 1970s have argued that there is a very thin line between making any distinctions within the field of distance education. It was only in the late 1980s that distance education specialists such as Sewart (1988) began to postulate a major shift in the thinking of distance education as having two branches, namely distance teaching and distance learning.

2.3.2.1. Distance Teaching:

Moore (1973) believes that a clear distinction between distance teaching and distance learning must be made. He goes onto argue that distance teaching refers:

> ***to all those teaching methods in which, because of the physical separation of learners and teachers, the interactive (stimulation, explanation, questioning, guidance) as well as the preactive phase of teaching (selecting objectives, planning curriculum and***

instructional strategies), is conducted through print, mechanical or electronic devices.

The term "distance teaching" has worldwide popularity since the inception of the Open Learning University of the United Kingdom. "Distance teaching is inadequate as a term to describe distance education" (Kaye,1992:312). Distance teaching only addresses half the process of distance education, namely the teaching aspect. Distance teaching as a term thus drives home the point of teacher centeredness where the role of the distance education institution becomes paramount at the expense of the role of the student in acquiring knowledge, skills and expertise.

2.3.2.2. Distance Education

The term "distance education" is a very elusive concept. There exists no universally accepted definition as yet. The absence of a universal definition as resulted in various terms and concepts being bandied around within the field of distance education. The researcher therefore wishes to delineate and redefine the concept "distance education". The discussion that follows will provide an in-depth analysis so that a through understanding of "distance education" can be grasped. Sewart (1988) feels that the term "distance education" is a jargonised one and as such one needs to undertake a systems approach in understanding the role, practice and theory of distance education. He goes on to argue that distance education is made up of two components, namely distance teaching and distance learning. The relationship between these two concepts and distance education can be illustrated as follows:

2.4. SOME POPULAR DEFINITIONS OF DISTANCE EDUCATION:

"Distance education is beset with a remarkable paradox - it has asserted its existence, but it cannot define itself." (Shale, 1988:25).

The way distance education is best defined or differentiated from other educational approaches has been the subject of many debates. From the perspective of many educational technologists, distance education is "inexorably linked to the technology" (Garrison:1987) and seems to be viewed as different from other forms of education, a factor which may contribute to course development and acceptance problems.

Focusing on the distance factor and on technology takes the emphasis off the "dialectical relationship between teacher and student" which Shale feels is the foundational principle in the educational process (Shale, 1988:25). To Shale, "distance" (and the technology, which accompanies it) is an incidental consideration and not a "defining criterion" for education. A broadening of the definition of distance education is urged by Scott (1997a) who acknowledges correspondence study as the historical foundation of distance education but suggest that there is really two forms of distance education. One is the traditional correspondence- based distance education which is independent study oriented and the second is telecommunications-based distance education which offers the teaching and learning experience simultaneously.

The Garrison and Shale (1987) definition of distance education offers a minimum set of criteria and allows more flexibility. They suggest that distance education:

- implies that the majority of educational communication between teacher and student occurs non-contiguously.

- involves two-way communication between teacher and student for the purpose of facilitating and supporting the educational process.
- uses technology to mediate the necessary two-way communication

2.4.1. Dohmen (1967)

One of the first formal definitions of distance education was put forward by Dohmen who was the director of the German Distance Education Institute. He defined distance education as:

> ***" A systematically organized form of self study in which student counseling, the presentation of learning material and the securing and supervising of student's success is carried out by a team of teachers, each of whom has responsibilities. It is made possible at a distance by means of media, which can cover long distances. The opposite of distance education is 'direct education" or "face to face education": a type of education that takes place with direct contact between lecturers and students"***
>
> ***(Dohmen, 1967:9)***

The three key elements or principles of Dohmen's definition could be summarized as follows:

- The use of media
- The organization of self study by an institution
- Differences in direct contact between lecturers and students
- Supervision of students are carried out by a team and not one individual lecturer
- Distance teaching is a systematic and organized form of teaching and learning

2.4.2. Peters (1989)

According to Peters ***"Distance teaching/education is a method of imparting knowledge, skills and attitudes which is rationalized by the application of division of labour and organizational principles as well as by the extensive use of technical media, especially for the purpose of reproducing high quality teaching material which makes it possible to instruct great numbers of students at the same time wherever they live. It is an industrialized form of teaching and learning.*** ***(Peters, 1973:206)***

Central to Peter's definition are some of the following principles:

- The use of technical media
- Mass education of students at a distance
- The industrialization of the teaching process
- The division of labour in the teaching process

2.4.3. Moore (1973)

The following definition appeared in 1973 and was later repeated without any modifications in 1977:

Distance teaching may be defined as the family of instructional methods in which teaching behaviors are executed apart from the learning behaviors, including those that in a contiguous situation would be performed in the learner's presence, so that communication between the teacher and the learner must be facilitated by print, electronic, mechanical or other devices.

(Moore, 1973:664; 1997:8)

2.4.4. Holmberg (1997)

According to Holmberg, *" The term distance education covers the various forms of study at all levels which are not under the continuous, immediate supervision of tutors present with their students in lecture rooms or on the same premises, but which, nevertheless, benefit from the planning, guidance and tuition of a tutorial organization.* ***(Holmberg, 1977:9)***

In Holmberg's definition, the following points are highlighted:

- The separation between teacher and learner
- There is planning and organization of teaching and learning

2.4.5. UNESCO (1979)

In 1979 UNESCO defined distance education as...

" Education conducted through the postal services, radio, television, telephone or newspaper, without face to face contact between teacher and learner. Teaching is done by specially prepared materials transmitted to individuals or learning groups. Learners' progress is monitored through written or taped exercises, sent to the teacher, who corrects them and returns them to learners with criticism and advice" ***(UNESCO, 1979:21)***

2.4.6. Gough (1981)

According to Gough, *"Distance education is a means of providing learning experiences for students through the use of self-instructional materials and access to educational resources, the use of which is largely determined by the student and which allow the student, for the most part, to choose the time, place and circumstances of learning".* **(Gough, 1981:10)**

2.4.7. Keegan (1983)

According to Keegan the term distance education refers to:

" that field of educational endeavor in which the learner is quasi-permanently separated from the teacher throughout the length of the learning process; the learner is quasi-permanently separated from the learning group throughout the learning process; a technological medium replaces the interpersonal communication of conventional oral, group based education; the teaching/learning process is institutionalized (thus distinguishing it from Teach-yourself programmes); two-way communication is possible for both student and teacher(thus distinguishing it from other forms of educational technology). It represents an industrialization of the educational process".

(Keegan, 1983:503)

2.4.8. Definitions of distance education as accepted / adopted by some distance education institutions / organisations:

2.4.8.1. Curtin University of Technology (Australia)

Distance Education is defined as a planned teaching/learning experience that uses a wide spectrum of technologies to reach learners at a distance and is designed to encourage learner interaction and certification of learning.

2.4.8.2. The California Distance Learning Project (CDLP).

Distance Learning (DL) is an instructional delivery system, which connects learners with educational resources. DL provides educational access to learners not enrolled in educational institutions and can augment the learning opportunities of current students. The implementation of DL is a process, which uses available

resources and will evolve to incorporate emerging technologies.

2.4.8.3. The Distance Learning Resource Network (DLRN)

Distance Education is instructional delivery that does not constrain the student to be physically present in the same location as the instructor. Historically, Distance Education meant correspondence study. Today, audio, video, and computer technologies are more common delivery modes.

2.4.8.4. The Distance Education and Training Council (DETIC)

Distance education (or correspondence/home study) is the enrollment and study with an educational institution which provides lesson materials prepared in a sequential and logical order for study by students on their own. When each lesson is completed the student makes available, by fax, mail, or computer, the assigned work for correction, grading, comment, and subject matter guidance by qualified instructors. Corrected assignments are returned to the student, an exchange that provides a personalized student-teacher relationship.

2.4.8.5. Penn State University: Department of Distance Education

Distance education is not simply the addition of technology to instruction; instead, it uses technology to make possible new approaches to the teaching/learning process.

2.4.8.6. Instructional Telecommunications Council (ITC)

Distance Education is the process of extending learning, or delivering instructional resource-sharing opportunities, to locations away from a classroom, building or site, to another classroom, building or site, by using video, audio,

computer, multimedia communications, or some combination of these with other traditional delivery methods.

2.4.8.7. University of Maryland: Institute for Distance Education

The term distance education represents a variety of educational models that have in common the physical separation of the faculty member and some or all of the students.

2.4.8.8. University of Idaho

At its most basic level, distance education takes place when a teacher and student(s) are separated by physical distance, and technology (i.e., voice, video, data, and print), often in concert with face-to-face communication, is used to bridge the instructional gap.

2.5. SYNTHESIS OF DEFINITIONS

The list of definitions proposed by individuals and institutions are endless. The above list is just a few that have been selected and quoted because of their popularity and wide appeal to scholars around the world in the field of distance education. At this juncture, having presented a few definitions, it becomes imperative that an analysis be undertaken so that a synthesis of the various definitions could be made.

From the definitions that are quoted above, the following principles appear to emerge as common/central to the term "distance education"

2.5.1. The separation of teacher and learner

It is no surprise to point out that every definition of distance education highlights the separation of the student from the learner or vice versa. All authors on distance education also indicate the most common characteristics that distinguish distance education from conventional face-to face and between oral and group based education. An important point to note is that, the level of separation between the teacher and learner may vary.

Not all distance education relies on complete separation of the student from the teacher. Early forms of Correspondence studies were guilty of total separation. Correspondence distance education of the present era includes and maintains a balance between separation and direct contact between teacher and student. More often than not the direct interaction between teacher and student takes the form of tutorial group based interaction. The University of South Africa (UNISA) is a good example of correspondence education backed up by tutorials where students are called in at the various regional centres and are met face to face to discuss problem areas and areas of concern in terms of their study units and modules.

The late 1980s and 1990s have witnessed the proliferation of new and advanced technologies that bridge the gap between separation of student and teacher. Technology enhanced distance teaching and learning mediums such as Desktop Video Conferencing, Multimedia Conferencing, Hypermedia Conferencing, Telephony, Satellite Conferencing and Digital Video Conferencing have rendered the notion of separation between teacher and student obsolete. These mediums are rather sophisticated and can generate "real time" interaction between the teacher and student.

2.5.2. The separation between the learner and learning group

Up until the late 1970s, definitions of distance education placed great emphasis on the teaching and learning of individual students viz. individualized education. Indeed this type of teaching and learning advanced by distance education was right for the times especially if we are to consider that distance education was heavily reliant on print based correspondence studies. By its very nature, correspondence studies was unable to have a wide appeal to group based learners as multiple communications were restricted at the time.

However, the 1980s brought a marked shift in the thinking behind distance education. Definitions on distance education after the 1980s began to identify and recognize the role of Video Conferencing; Teleconferencing and Computer Conferencing in-group based learning. Distance education specialists began to down play the notion that distance education was solely based on individualized learning. Modern technologies began to give way to group based learning possibilities and thus distance education was able to fulfill group based learning initiatives.

Keegan (1991) argues that conventional education was based on face to face interaction where groups of pupils or students gathered at a specific time and place structured by a timetable. However in distance education there was no compulsion on the part of students to engage in-group based learning. Group based learners were doing so voluntarily or in certain instances group based learning never takes place. Thus the flexibility of distance education made it popular amongst students.

It must be stressed that in distance education, there are numerous opportunities where group based learning may occur. The group based learning via chat lines

using the Internet, Email, Satellite Conferencing, Audio-visual broadcasts (Television and Video) or Hypermedia broadcasts using Digital Computer innovations have all proved that learning via distance can very well result in a group based teaching and learning. Within this scenario, the physical distance between learners and institution has now been voided largely due to the impact of new and ever improving information communications technologies. Technologies such as those listed above (video conferencing, desk top conferencing, two way satellite conferencing, etc) have resulted in cyber-schools, cyber-universities i.e. institutions of learning that exist in virtual reality. Virtual education is beginning to take root through out the educational landscapes of the world.

There is a strong argument for redefining distance education and thus the researcher proposes the following definition:

There is no distance education...., there is no correspondence education...., there is no independent learning/education, there is only one education. Education that is universal, education that must cater for life long learning to equip all of mankind to live in harmony and peace and prosper just as equally as others in the world.

Educational delivery can take the format of various modes, and it is these modes of delivery that are important and significant to define and analyse. Distance education is not inferior education, neither is it informal education. It is education that is part and parcel of various modes that learners wish to pursue due to a host of factors such as location, shortage of institutions in their communities, lack of staff, etc.

2.6. TECHNOLOGICAL INFLUENCES ON THE MODES OF DISTANCE EDUCATION DELIVERY:

The various technologies available for telecommunications-based distance education can be schematized as in the figure.8 below. In the synchronous communication mode, we are witnessing a development from predominantly audio communication by telephone, or amplified telephone in the case of audio conferences, to multimedia interactive real-time communication, either between individuals or groups. The result is that virtually all of the activities that can be undertaken in a conventional classroom situation can also be undertaken over distance, in a form of "virtual reality" (Hiltz:1990). In the asynchronous communication mode, the predominant medium of the past (print) is being supplemented by voice messaging facilities and other graphic communication potential so that once more we are working towards an integrated multimedia environment for educational communication. According to Hiltz and Turoff (1978), Vallee (1982), Kearsley (1985), Grief (1988), and Wilkinson and Sherman (1991), we are rapidly becoming a networked society that will adapt to utilizing telecommunications-based communication as easily as face-to-face communication is utilized in society today.

The modes of educational delivery can be broadly categorized into two types, namely:

- Synchronous
- Asynchronous

The terms synchronous communication and asynchronous communication explain the essential differences by defining the extent to which a learning course / programme / module is bound by place / or time.

2.6.1. Synchronous communication:

Synchronous communication is communication in which all parties (learner, student, tutor, facilitator, lecturer) participate at the same time. Synchronous communication in distance education emphasizes a simultaneous group or individual learning experience. Facilitators/Tutors or lecturers communicate in "real time", usually via face to face(similar to convential education settings), interactive two way audio or video conferencing, satellite conferencing, online interactive learning using multi media. Synchronous conferencing requires that the student/learner must attend at a specified time and in a specified location.

Synchronous communication may also be thought of as an extended classroom or lecture hall which could translate into your private bedroom, diningroom, computer workstation, etc. Media used for synchronous communication delivery include interactive audio and video, audiographics, Groupware applications such as online "chatrooms" in which students can communicate via the computer at the same time but from different places.

2.6.2. Asynchronous communication

Asynchronous communication is communication in which the learner/student and tutor/facilitator/lecturer participate at different times and places. Asynchronous communication offers a varied choice of where, when and above all, when the student/learner will access learning. With asynchronous communication, the learner/student can choose to learn anytime and at any place and location. Correspondence courses, email learning, Listserves, video based learning, radio broadcasts and television broadcasts, web based learning belong to this category. Asynchronous communication by its very nature emphasizes

individualised learning where individual students take courses and programmes when and where they like or choose.

2.6.3. Potential benefits of both synchronous and asynchronous distance education delivery

The telecommunications option for education is often perceived as being expensive compared to either face-to-face education or the more conventional distance education methods based on print and correspondence by mail. However, this is not a completely accurate perception. Cost calculations that include the communication costs as well as the costs of tutor time in generating feedback messages to students show that telecommunications-based instruction can be more cost efficient than print-based instruction (Romiszowski & Iskandar:1992). The experience of AT&T in utilizing audiographic teleconferencing has demonstrated cost reductions of over 50% in the real costs of training if these are calculated to include the cost of transport and accommodations of participants from remote sites (Chute:1988). Furthermore, the costs of telecommunication are falling whereas the costs of educational space, staffing and transport are rising, so that over time the economical equation will favor the increased use of telecommunications-based education. One should also remember that over the long view it will not be necessary for educational systems to invest in the basic infrastructure for telecommunications as this is a requirement for society and business in general (Zuboff:1988; Johansen:1988).

Given the technological scenario for the future that has just been painted, it is fair to ask whether such future systems are capable of delivering an appropriate level of quality of education. Research on distance education by and large has shown that, when appropriately planned, distance education can be as effective as

conventional classroom based education. While there are some exceptions in terms of certain types of content or certain groups of students, the move towards integrated multimedia networking may be expected to extend the range of effective distance education applications (Collis:1991; Steinberg:1992; Kaye:1992).

One potential benefit of such integrated networks in distance education is that they may be "user driven." Groups of students may form naturally because of common interests at a given point in time, largely independent of decisions made by any single educational institution. A program of study might be composed of modules of materials pulled in from various institutions as required by the particular individual or group. Potentially, such a development offers the promise of overcoming a major weakness of conventional educational provision, namely the long reaction time required by institutions to adapt curricula and content to the changing needs of society. To extend the currently popular hypertext/hypermedia jargon, we might look forward to the hyper-school or hyper-university, a network of the world's educational institutions that may be browsed at will by a student interested in planning and following through an individual program of study.

2.7. TYPES OF SYNCHRONOUS AND ASYNCHRONOUS DISTANCE EDUCATION DELIVERY

The following types will be discussed:

- Print / Correspondence based distance education
- Radio
- Audio Cassettes
- Television
- Video Cassette

- On Line Learning (Email, World Wide Web, Bulletin Boards, Newsgroups, Internet Relay Chat, Virtual education)

2.7.1. Print / Correspondence Based Distance Education

Print is one of the most enduring and useful technologies that is used to support education and training programmes. Distance education courses were first offered in a manner where printed materials were posted to learners. Although various additional technologies are now available for the distribution of curriculum materials, print continues to play a significant role in all distance education programmes.

2.7.1.1. Formats of Print Materials

According to Willis (1993), there are various formats of print that are available, including:

- ***Textbooks.*** As in traditionally delivered courses, textbooks are the basis and primary source of content for the majority of distance-delivered courses. While textbooks should always be critically reviewed before adoption, this is especially critical when the learner and the instructor are not in daily contact.
- ***Study guides.*** Typically, distance educators use study guides to reinforce points made during class and through the use of other delivery systems. They will often include exercises, related readings and additional resources available to the student.
- ***Workbooks.*** In a distance education context workbooks are often used to provide course content in an interactive manner.
- A typical format might contain an overview, the content to be covered,

one or more exercises or case studies to elaborate the points being made, and a quiz or test (with answer key) for self-assessment. In addition, there is typically some form of feedback, remediation, or "branching" loop to recycle students through the instruction as needed.

- ***Course syllabus.*** A comprehensive and well-planned course syllabus is the foundation of many distance-delivered courses. It provides course goals and objectives, performance expectations, descriptions of assignments, related readings (often by session), grading criteria, and a day-by-day overview of the material to be covered. The syllabus must be as complete as possible in order to guide the students through the course in the absence of daily contact with the instructor.
- ***Case studies***. If written imaginatively, case studies are an extremely effective instructional tool. In fact, case studies are often designed around the limitations of print and intended to spark the students' imaginations as they place themselves in the particular case under consideration. Many case studies present a content-based scenario. They raise questions, pose alternative solutions, and then branch students to different sections of the text. There, the consequences of the selected alternative are described.

2.7.1.2. Advantages

One of the primary strengths of print is that it is accessible to most learners. There are two points to make about print being accessible. The first is that there is physical access to the technology. The second is the ease with which learners can access information from the technology. For the former, print is both more widely available and more standardized than all other technologies (Holmberg :1986). One does not require a special technology to convert the learning materials into a form that can be read by learners. This is an advantage as print can

be used in any setting without additional infrastructure, like electricity or receiving equipment, being in place. For the latter print tends to be less threatening and easier to use that most other technologies. Thus, provided a learner has the necessary literacy skills, print is a very transparent medium that does not require additional learner expertise.

Hiemstra (1982) points out a further advantage, by stating that the use of print can assist learners to pace their engagement with printed materials. They can choose to read at times convenient to them, skip familiar of redundant areas and focus on specific sections requiring additional attention.

As printed materials are text-based, the educational advantages and strengths of using text are simultaneously strengths of print (Pittman:1987).

2.7.1.3. Disadvantages

According to Pittman (1987), many of print's weaknesses are the flip-side of its strengths. For example, in contrast to the arguments outlined above, print only remains accessible if adequate and well functioning systems for its distribution are in place. The efficiency of a country's national postal service is therefore an important consideration when considering distributing print to learners at a distance. For example, in South Africa there are various logistical and infrastructural hindrances that contribute to the distribution of printed materials. Rural areas are the worst affected.. Some creative strategies for overcoming this problem have been explored and include using newspaper supplements or inserts, rather than the postal service.

A second weakness of printed materials is that they tend to encourage a linear or sequential presentation (Penland:1977). It is possible to adopt strategies that

allow for more flexible engagement with printed materials. Such strategies might include using flashback techniques, summaries or parallel developments that are presented sequentially but are suitably signaled and cross referenced. Nevertheless, such practices are not in common use. Therefore, while print has the advantage of being paced by the individual learner, it is difficult to use it to motivate learners, offer encouragement or to extend levels of engagement. What is particularly apparent, as with all educational technologies, is that successful educational use of print, requires the use of a combination of other technologies to support it.

According to Pittman (1987:59), "Print can also be fairly expensive to update and release new versions or additions of materials already produced. Re-design, printing and paper costs need to be considered, as well as the fact that the old versions are then tend to be redundant". Besides the design and layout of materials, the type of paper and quality of printers affect the appearance and cost of printed material. As for all technologies, the primary and first cost incurred in producing printing materials is the cost of development. Secondary to this are costs of printing and distribution. The problems of updating printed materials and its cost have been relieved to a certain extent by the changes in the development and production of printed materials.

Another weakness of print lies in its limited (or potentially nonexistent) ability to assist learners who have not understood parts of the text. (Bates,1995:120). Related to this, is the difficulty is to use print to provide feedback to questions that have a variety of acceptable responses.

2.7.2. Radio Broadcasts:

According to Willis (1983), radio uses an electromagnetic wave (or, in the case of some community stations, microwave) to carry an audio signal superimposed upon it from a transmitter to one or more receivers. For terrestrial transmission, antennae are dispersed in the ground and operate by line-of-sight frequency modulated (FM) towers spread over the country, or by bouncing the signal back and forth from the ionosphere (short wave or amplitude modulated (AM)). As a consequence of recent technological developments, however, transmission no longer requires a terrestrial network of antennae. There are many satellites (either in a geostationary orbit, or revolving around the earth) that could potentially transmit digital radio signals over a large area.

Like television, different radio equipment would be necessary to receive analogue or digital radio transmissions. Radios are relatively cheap and can operate using the mains power supply or batteries. As such, they are considered to be the most accessible of all technologies (Bates: 1995) This is particularly true in South Africa as they are used extensively in rural areas, even where there is no grid electricity. Simple radios that can be charged by solar power, or even powered by clockwork have been developed. Radio communication takes place in real time. It can be either one-way or two-way transmission. However, most radio broadcasts are uni-directional or one-way, as radio can only be used for two-way communication, when two sets of receivers and transmitters are used.

In South Africa, the SABC is the primary source of terrestrial radio transmissions, which are distributed by Sentech (SAIDE:1998). In addition, however, many local radio stations with limited range are now in operation.

The range of each transmitter is determined by its signal strength and the topological features of the area surrounding it. Sentech transmitters now cover most of the country, "potentially reaching up to 94% of the population" (SAIDE,1998:23).

According to Willis (1983), another audio signal, the FM SST (or Frequency Modulation Supplementary Signal Transmission) which has a frequency much higher than that of the normal human ear, can be superimposed over a normal commercial audio FM signal. This signal is extracted from the normal signal using a special receiver that converts it into normal audio which the human ear then picks up. The FM SST channel, which 'piggybacks' on a commercial channel, has potential for educational uses. This technology could effectively double the number of FM stations without increasing overhead costs of signal distribution.

2.7.2.1.Cost Implications

The cost of commercial transmissions can be as high as R500 per hour (SAIDE:1998), but the main cost is embedded in the design of lessons. A radio lesson requires the efforts of a design team to adapt curriculum material to the medium and to design accompanying support material. In addition, an extensive testing programme is needed to determine the efficacy of resources. Fully interactive two-way transmissions depend on the size of transmitters, as well as the downsite costs (for example, receiver and sender antennae, and radio receivers).

2.7.2.2. Advantages of Radio Broadcasts for distance education delivery

Some of the strengths of radio have already been implied in the above description:

- Radio can reach large audiences simultaneously;

- Radios are widely available and relatively cheap;
- They are easy to use and most people are familiar with them; and
- They can operate on a variety of power sources (mains, battery, solar power or clockwork).

In addition to these, radio has a number of strengths that are related to its potential educational use. The development of educational radio has seen radio used for a wide spectrum of learning groups. Bates (1998) argues that "radio has been used for schools broadcasts, adult basic education (including literacy), early childhood development, informal general education and social action programming".(Bates, 1995:139; SAIDE:1998). Radio's potential to motivate listeners and possibly result in attitudinal change has been recognized. (SAIDE - SABC Workshop:1998). Radio can be effectively used for panel discussions, phone in question and answer sessions, etc.

Reflecting on the British Open University's (OU) use of radio highlights both additional strengths and potential applications for radio. Possibly the most obvious, though not necessary the most effective, use of radio for education is to transmit lectures by experts or professors. It is interesting to note that at the peak of the OU's use of radio, approximately 20 percent of its radio programmes used this lecture format. (Meed:1974; Bates et al. 1981. in Bates, 1995:140.) Radio broadcasts were frequently used for:

- discussions of course material or issues covered in the printed materials;
- alternative viewpoints to that contained in the printed material (e.g. guest speakers;
- source material for analysis (e.g. children's speech patterns); 'performance', including poets reading their own poetry, dramatization of literature, musical performance;

- providing aural experiences: music, language learning, analysis of sounds;
- collecting the views or experiences of specialists, experts or witnesses. (Bates,1999:140.)

It is also interesting to note that although audiocassettes became more popular in the nineteen eighties, the OU increasingly relied on radio broadcasts to relate:

> ***"course material to current affairs and up-dating a course over its eight-year life, providing corrections or course news..., and overviews or summaries of units or blocks"(Bates, 1984:140).***

2.7.2.4. Some Weaknesses

Educational radio needs extremely well-designed lessons and accompanying study material; if this aspect is neglected, its efficiency is very low. One of the main weaknesses of radio is that it is unidirectional. Used in isolation, it does not allow for interaction. To attempt to overcome this problem, educational radio broadcasts must be well designed and well integrated with non-broadcast support strategies. In theory two way communication is possible with two-way transmission or by using telephone phone-ins. However, two-way transmission is far less common and levels of interaction remain low when the phone-in format is adopted (Bates, 1995:140.). Interactive radio instruction (IRI) methodology has attempted to create interactivity between radio teacher and learner and, in some cases, between learner and learner and learners and classroom teacher. (SAIDE:1998). This format has tended to encourage rote response with learners calling out responses during silences. This is not efficient use of broadcasting technology as it results in a significant amount of dead or silent time.

Another weakness of radio is, that, it has to be used synchronously. Learners have to gather around a radio at a specified time, which frequently is not

convenient. Related to this are the associated logistical problems in efforts to synchronize class schedules with transmission times.

Because radio broadcasts are usually broadcast during mainstream schedules, educational radio resources have to compete with other programmes to attract audiences. This has meant that, educational radio tends to be given poor time slots and is, at times simply seen as a means of distributing audio resources. For example, some educational radio programmes are broadcast late at night or in the early hours of the morning. Users of the programmes are expected to record the broadcast onto audiocassette. The BBC's primary school educational radio service is one such example of this use of radio transmission (SAIDE, 1998).

The most accessible technology in terms of cost and comprehension, radio has been used in education ever since it became available. It has been used for school broadcasts, in-service teacher support and training, and adult literacy and basic education campaigns. And in combination with tutorials, print materials, local listening groups, and face-to-face meetings, radio has been used in many countries to teach a wide range of subjects at the school and college level. Several large distance teaching universities in Britain, Indonesia, Spain, and Thailand use radio in many of their distance education courses. Now that audio-cassette recorders are so widely available, the ephemeral nature of radio broadcasts and the fixed transmission times can be easily compensated for. And where students have access to telephones, phone-in discussion programmes can overcome the one-way nature of radio broadcasting.

2.7.3. Audiocassettes

Audiocassettes are less glamorous than technologies such as the Internet or even television but, as an educational technology, potentially have a more positive

impact on learning processes than radio (Willis:1983). Audiocassette recorders give teachers and students the power to record audio resources for asynchronous use. Teachers and students can also purchase complete sets of programmes, which would have added advantages of being well organized and clearly labelled. Use of recorded audio resources allows students greater control over the duration of the listening-learning process, as well as its frequency or quantity.

Recording radio broadcasts is not a simple process. The type of equipment available in the home or school (separate radio and tape recorders are less effective for recording than combined radio-tape players), the skills and coordination required to record, and storage and cataloguing of recordings impact on this process. Provision of cheap, efficient, and coordinated distribution of audio resources by the public broadcaster is one way of simplifying the process and encouraging asynchronous use of audio resources.

Audiocassette recordings of radio resources do, however, differ in style and educational effectiveness from audio resources intended for individual use as part of a course. Students have, for example, reported that course-based supplementary audio materials were more helpful than radio-based learning materials intended for broadcast use(Bates,1984:204).

2.7.3.1. Advantages

Audiocassette resources and associated technologies provide students with stop-start and review facilities, and teachers can exploit the opportunity provided by "the hidden nature of the next part of the tape to be played". (Bates, 1984:205) Replay and pause facilities have been found to be effective for analysis or revision-type learning activities.

In combination with print materials, audiocassettes allow for simultaneous audio and visual stimulation, while students are able to move between media at their own pace. This flexibility is important in resource-based learning and learner-centred education. Use of audiocassettes also allows students and teachers the opportunity to leave their hands and eyes free. Bates lists the following advantages of using audiocassettes as learning materials:

The educational value of audiocassette resources is dependent on the extent to which they encourage interactivity. For example, a 'tape teacher' or sound special effect can encourage (cue) students to practise pronunciation, translation, grammar, or to turn the page of a printed text. This supports communication and language skill development. Audiocassette resources, if instructionally designed to do so, can encourage students to summarize in written form what they have heard, thereby reinforcing mastery of verbal and written literacy skills.

Audiocassette resources have also been used with secondary school students, to present the different points of view of a range of people. They can be used to familiarize students with an argument or even a story or play. It is a useful way of showing students how course materials are linked to events occurring in the wider society. If audiocassettes also include a commentary about an event or experience, they can be useful in motivating students, and allowing them some opportunity to experience emotionally an unfamiliar event.

Audio resources are effective for supporting communication skills and for explanation of concepts. Stimulation to encourage exploration and development of other sensory experiences and awareness. This form of stimulation can potentially create any environment in a listener's mind, because it relies on the power of imagination and the creativity of scriptwriters, listeners, and caregivers.

2.7.4. Television broadcasts in distance education delivery

Television programmes, especially if they are broadcast over public networks and expected to meet production standards similar to those of news, documentary, and entertainment programmes can result in good quality distance education delivery. However, narrow cast programs can be produced on smaller budgets, but simply placing a lecturer in front of a TV camera and transmitting the results is generally considered an ineffective use of the medium for education. According to Willis (1983), television comes into its own in a multiple-media distance education course that is used to demonstrate scientific or laboratory experiments, to broadcast field trips, case studies, or performances, and to help visualize dynamic processes and sequences of events. In cultures where TV viewing is passive and recreational, however, it can be difficult for students to change their viewing habits and see TV as an educational medium. And unless students have access to recording equipment, at home or at local study centers, the ephemeral nature of the broadcast must be taken into account in determining its educational objectives and its place in a distance course.

Independent study of course materials and resources in the courseware that makes up the physical, mediated content of the course Interaction with other course participants (tutors, instructors, other learners, resource people).

It is through a package of courseware, specifically designed for independent study, that the teaching in a distance education course is immediate whereby text, audio, audiovisual, or electronic media are used.

Technology such as videoconferencing, audiographic conferencing, or the Web can be used to both transmit content and support interactions, but in most cases

different technologies are used for these purposes. In distance education the use of national broadcasting networks has generally been justified only for a mass education programme or as a "shop window" for a programme's courses, to attract new students. The exceptions have been educational use of state-controlled broadcasting networks (when the ministry of education receives access to a certain amount of air time each week) or networks operated by educational or religious organizations. Narrow casting of instructional TV programmes to registered students, through private access cable, satellite channels, or instructional television fixed service (ITFS), is used in some countries, notably the United States (SAIDE:1998). In South Africa there are very few private television broadcast providers. The arrival in the near future of digital broadcasting networks using satellite systems will vastly increase the number of channels for narrow casting, and some of these could conceivably be used in distance education programmes.

Where potential students have access to networked terminals or personal computers—whether at work, at local study centres, or at home, the technologies for delivering electronic, or digital, media are being used more and more in distance education. Digital systems transmit all information as bits (Binary digits) and can send different types of information (text, numerical data, sound, images) down the same channel at the same time. Digital systems use transmission channels far more efficiently than do analogue systems such as traditional telephones or television broadcast networks. They also reproduce the information more accurately and can be copied or amplified with little or no distortion. Telecommunications networks increasingly are being replaced with digital systems such as digital broadcasting and integrated services digital network (ISDN) which offers a superb quality of audio and images.

Teachers of distant learners must accomplish the same general goals as those working in conventional environments, but separation from the learners means some of the teacher's challenges take on special forms. For example, the learner is frequently insecure in the absence of the teacher and apprehensive regarding his/her progress in the absence of close feedback and perhaps absence of peer learners. The student becomes more insecure if the direction of the course is not very well structured, and if it is not very clear where he or she is in relation to its completion. The phenomenon of "drop-out" is much more common in distance than conventional education, i.e., it is easier for a student to exercise the option of withdrawing from the relatively impersonal relationship of a distance course than it is from a conventional curriculum. In response to such concerns, the distance teacher has to take various measures to ensure the course is very well structured, with clear objectives and well considered allocation of students' time. The communications media must be used in attractive, rewarding, and therefore motivating ways.

2.7.5. Video Cassettes in Distance Education Delivery Modes

Video material can be recorded on electromagnetic tape, and replayed using videocassette machines. Videocassettes store video in an analogue format. Video discs perform the same function as videocassettes but operate in a similar manner to CD-ROM discs. A laser beam detects tiny pits that have been burnt into the plastic coating of a disc. Images can be accessed randomly rather than linearly. Videodisc players cost about the same as videocassette recorders, but are not commonly used in developing countries such as South Africa.

Willis (1983) argues that, educational research has tended to conflate the relationship between video and learning with videocassette and television

technology. Hence much of what is described as television research is actually about video stimulation delivered on videocassette. It is essential therefore that issues of technology not be conflated with issues of media. Videocassette technology can be used to record television broadcasts, thus allowing asynchronous use of broadcast. Students or teachers can choose when to screen a video, and which sections of it to use. It can be paused, or rewound and reviewed, if desired. This can be educationally useful if, for example, sections of a video (particularly those depicting movement or procedures) need to be shown repeatedly. The ability to watch and re-watch video can be exploited by students using video as part of a self-paced, resource-based learning environment, in which they use resources in their own time. All of these features facilitate the integration of use of other media and stimulation with the viewing process. In a structured learning environment, videos can also be stored for re-use every time a course is run, allowing for effective amortization of costs over time and student numbers. Design of video resources intended for synchronous broadcast use is thus qualitatively different from design of resources intended for videocassette distribution.

2.7.5.1. Advantages

- relatively widespread availability of technology.
- ability to record as well as replay and pause.
- low cost of recording.
- pull technology - users can choose time and place of viewing.
- motion and processes can be shown.
- viewers can see places or activities which they would not normally experience. For example, the inside of a cockpit, surface of the moon or underwater sea life.

2.7.5.2. Disadvantages

- tapes can get damaged,
- linear format means that locating a specific part of a cassette has to be done manually by physically rewinding or fast forwarding a tape.
- Learner or viewer cannot pace the presentation. This makes video unsuitable for large amounts of text.
- unidirectional - requires support technologies for communication

2.7.6. Online Distance Education Delivery

2.7.6.1. The World Wide Web (WWW)

2.7.6.1.1. What is the WWW?

The Internet is the world's largest, most powerful computer network connecting persona computers, sophisticated mainframes, and high speed supercomputers around the globe. Current estimates suggest that over four million computers are part of the Internet (Kochmer: 1999)

Because a myriad of computers and programmes are part of the Internet, incompatibility problems can result because information is created using different computers and software. In 1989, a group of scientists at the European Laboratory for Particle Physics (CERN) in Geneva, Switzerland began developing an Internet tool that would link information produced by all of the CERN researchers. The tool provided a way to link textual information on different computers and created by different scientists. The object was to overcome issues

of incompatibility and utilize a new way of linking made possible by computers, called "hypertext". Rather than presenting information in a linear or hierarchical fashion, hypertext permits information to be linked in a web-like structure. Nodes of information can be linked to other nodes of information in multiple ways. As a result, users can dynamically criss-cross the information web using pieces in the order most convenient to them. The CERN project resulted in an innovative front-end to the Internet, now referred to as the World-Wide Web (WWW).

The WWW provides users with a uniform and convenient means of accessing the vast resources of the Internet. In 1993, the National Center for Supercomputing Applications (NCSA) at the University of Illinois pushed the CERN scientists' idea further by creating a software tool called Mosaic. Mosaic is an easy to use graphical user interface that permits text, graphics, sound and video to be hyperlinked. Mosaic was the first of the Internet tools that are now referred to as " Web browsers". Other well-known browsers include Netscape (the first commercial browser developed by some of the programmers involved with the Mosaic project) and Microsoft's Internet Explorer.

Web browsers permit users to connect to the Internet and facilitate accessing information located on another remote computer. The Web browser links to the remote computer just long enough so that the information you need can be sent to your computer for you to view. Documents created to be viewed by a browser are formatted using Hypertext Markup Language (HTML). HTML solves incompatibility problems by using standardized tags which indicate such things as whether a piece of text should be plain, bold, italic, or linked to another piece of text. Pages of information on a computer formatted with HTML and accessible to someone with a Web browser, are referred to as "home pages" or "Web pages".

2.7.6.1.2. Why use WWW in distance learning ?

The WWW and Web browsers have made the Internet a more user-friendly environment. The ability to integrate graphics, text, and sound into a single tool means that novice users do not have to struggle with a steep learning curve. In addition, organizations and individuals can create home pages independently and link to other home pages on their own computers or to pages created by others on different computer systems.

For educators, the WWW provides an exciting new opportunity for distance teaching and learning. The WWW can be used by the distance educator to build a classroom home page. The home page can cover information about the class including the syllabus, exercises, literature references, and instructor's biography. The instructor can also provide links to information on the WWW that would be useful to students in the class (e.g., research data on agricultural markets, global climate change, or space missions). Other links can access library catalogues or each student's individual home page. In addition, the home page can link students to a discussion list or listserve that set up for student communication. It is also a relatively simple matter to use the homepage to create forms that students can fill out and that will end up being sent to you as an e-mail message.

2.7.6.1.3. Developing a Home Page for Distant Students

Distance educators who are ready to develop a web presence, should avoid the following pitfalls:

- ***Rushing in without a master plan.*** Don't get so caught up in learning HTML and developing the home page that the purpose for developing ones presence on the WWW is lost.

- Spend less time struggling with HTML, developing amusing graphics or playing with possible background and more time considering the purpose and content of the home page. Before you start your home page:

- ***Think about your reason for developing a Web presence.*** Will your home page be a stand alone course or will you be using it in conjunction with other technologies such as video or audio? Sound instructional design principles apply to home pages just as with any other materials prepared for a course.

- ***Become familiar with new software tools for developing home pages.*** Computer software tools such as HotMetal and HotDog mean that anyone familiar with using word processing software can develop a good looking and functional home page. Reviews of other such computer software tools are available on the WWW and many of them can be downloaded for a free trial.

- ***Utilize information that already has been developed for your course.*** If you already have your notes and syllabi in word processed form, make use of tools such as HotDog (Microsoft Office Application that easily converts information into HTML) to format them for distribution on the WWW.

- ***Look at what is already available.*** Hundreds of home pages have already been developed for courses. Some of these home pages allow students to complete an entire course from the WWW and others are developed in conjunction with lectures delivered on-campus or by video or audio. A great place to check out what others have done is The World Lecture Hall . The World Lecture

Hall contains links to pages created by faculty worldwide who are using the Web to deliver class materials.

- ***Laying out home pages poorly and inconsistently.*** To avoid ugly and confusing home pages, consider the following:

  - *Consulting sites on the WWW which provide information on home page layout and style.* Two popular sites are the Web Style Manual and Guide to Web Style

  - *Utilizing a consistent format for each of your pages.* Based on suggestions made by the above mentioned style manuals, develop a consistent format for each web page. While colored or patterned backgrounds can be used on homepages, plain grey or white backgrounds make text easier to read.

  - *Keeping page lengths short.* Your main index should lead to a number of shorter pages. In cases where page information is long, index internally, so that the student can jump to specific information as needed.

  - *Maximizing links to internal information and minimizing links to external information.* The purpose of your home page is to provide information on a specific subject area. Only provide external links to home pages that provide useful related information for your students.

  - *Using unnecessarily large graphics or including sound/video clips.* Consider that while graphics can add appeal to a home page, a large number of Internet users are still accessing the Internet using a 14.4K modem. Graphic images which are 20K

to 40K are acceptable for people with 14.4K modems. Pages which take too long to download frustrate students and may force them to beat a hasty retreat. If your home page requires extensive use of graphics to demonstrate points, warn your students. If you plan to use sound or video clips, you will need to be sure that all of your distant students have access to computers that have sound and video cards installed in them.

- *Letting the home page become out-of-date.* The home page should be an ongoing part of course development. Make sure that you add or change information as necessary. Periodically verify whether other home pages to which you are linking still exist.

2.7.6.1.4. Some tips on what should be placed on the Home Page

The home page should help students to find necessary course information, learn the material, and get involved in thinking about the course material (Ackermann, 1996). Properly designed home pages will encourage thought, discussion and active participation by the distant students. The following elements can be included in your class home page (Ackermann, 1996):

- ***Course & Instructor Information***: Include such items as course topics to be covered, your office hours, textbook information, course objectives, and grading policies.

- ***Class Communication:*** Provide access to your e-mail, link to discussion groups that you have set up for student-to-student communication, and create forms that your students can use to report problems or provide biographical information about themselves.

- ***Assignments and Tests***: Distribute assignments and tests, provide for online completion or submission, and give solutions, hints, or samples of what you expect.

- ***Material covered in the classroom:*** Make lecture notes and handouts available either as web pages or as downloadable files.

- ***Demonstrations, Animation, Video, Audio:*** This is more complex than other suggestions and will require that your students have access to computers with sound and video cards.

- ***Reference Material:*** List materials in print and electronic form that supplement the textbook. To avoid copyright problems, electronic articles should either be written by you or in the public domain (e.g., government documents or are already available on the WWW with author's permission to distribute). In addition, provide links to other pages which cover information on the topic, similar courses that may also be available on WWW, the university library, etc.

2.7.7. The Electronic mail (Email)

E-mail is delivered by Internet software through a computer network to a computer address. Like postal mail, e-mail is used to contact and collaborate with others. This contact may occur across the hall or across the world. It is a very powerful tool for education, and generally under utilized. E-mail is categorized into two: private e-mail and e-mail distribution list. In distance education, private e-mail can be used to interact with students off the class discussion list. The instructors use private e-mails to relay important message to students, to prod students to post more often, comment on their work, encourage their efforts,

answer students questions and otherwise keep in touch. Students can also use private e-mails to submit their assignments. An e-mail distribution list is a restricted -access distribution list normally used as the classroom equivalent environment, distance learners can post and discuss their responses to the assignments and papers. Updates and revision questions in the course are also posted here.

2.7.8 Bulletin boards

Two common public bulletin boards on the Internet are USENET and LISTSERV. USENET is a collection of thousands of topically organised newsgroups, covering everything from supercomputer design to bungee cord jumping, and ranging in distribution from the whole world to single institutions. LISTSERV also provides discussion forums on a variety of topics broken out by topic and an area of special interest. A listserv is an electronic mailing list utilised for email driven discussions. Each listserv has a topic or subject around which the discussion centers.

2.7.9. Network Newsgroups

Newsgroups are Internet features that allow people with similar interest to carry on a group discussion that does not require everyone to be present at the same time. As a member of the group, a distance learner can post a message to the discussion in the same way they use e-mail. All other members can see the message and anyone who wishes can reply to it. The instructor will often post a message, a thread of conversation will begin and subsequently replies will be organised around those threads. When distance learners view the messages, they will be able to identify, follow and add to the conversation. The conversation will serve as a good resource for review before exams and while doing assessments.

Using the newsgroups is similar to e-mail. Learners post new massages, reply to the group, or reply to individuals. If they reply to individuals, an e-mail message will be sent directly to that person instead of the group. To do so, however, one has to know their e-mail address. They can attach images and documents just as they would in e-mail.

In general, bulletin boards can be used by students and instructors to post important messages for all others students to see. They can discuss the material from their classes or post useful links they find in the Internet. Students can also access handouts for a course, policies, syllabus, instructors comments, lessons, reading and assignments. Bulletin boards allow for easy access to opinions of peers and encourage student-to-student interaction.

2.7.10. Internet Relay chat

The second category of the delivery systems in distance education is Synchronous Instruction. Synchronous instruction requires the simultaneous participation of all students and instructors. The advantage of synchronous instruction is that interaction is done in "real time." A Form of synchronous delivery is chat forums (like Internet Relay chat, Cool Talk from Netscape and Microsoft Net meeting). This software is also called global chat.

Each day or week at designated times, distance education students and their instructors can "meet virtually" on the Internet. Basically Internet chat allows people to type messages to each other in real time. Distance education instructors can use chat sessions to recap the important points in the lectures and to answer students questions. Another example of chat software is, Cool Talk from Netscape. Cool Talk allows both the online chat with written word and with figure

but also the ability to talk to each other without making a long distance phone call.

2.7.11. Cyberschools and Universities:

According to Hiltz (1990), ***the virtual classroom is one of those things that is best experienced, like a sunset swim in ocean waves, in order to fully understand it...think of all the different kinds of learning tools and spaces and ritualized forms of interactions that take place within a traditional classroom, and within an entire college campus, university or school. All of these things exist within a virtual classroom, too, except that all of the activities and interactions are mediated by computer software, rather than by face to face interaction.***

The days when the television set or tape recorder was the "highest-tech" teaching tool to grace the classrooms and lecture halls of schools, colleges and universities are over. The application of information technology has given new meaning to the way teaching and learning is fostered in education. There has been a dramatic paradigm shift within the educational landscape and as such virtual education has been introduced with a big bang. Educational authorities throughout the world have begun to realize the potential of virtual reality in transforming the educational landscape so as to open up access to all citizens of its society. Distance barriers, age, full time employment and so on have all been removed with the application of virtual reality.

The term virtual is used in computer science to refer to something whose existence is simulated with software, rather than actually existing in some physical form. The virtual school or virtual campus is education dispensed from an

electronic platform instead of a classroom or lecture podium. The introduction of virtual classrooms and campuses has been taking place since the early 1980s both in the private sector and in the public sector.

The virtual campus is a metaphor for the electronic teaching, learning, and research environment created by the convergence of powerful new information and instructional technologies. Today there is a pressing call for technology to provide expanded higher education opportunities to a very wide spectrum of present and potential clientele.

A paradigmatic shift, from a professor-centered to a student-centered system of learning, has particular implications for the profession of teaching. One implication is a recommitment to creating an ideal learning environment for students, employing new technologies to address variances from the ideal. A second major implication for faculty is a shift from traditional to new roles and classroom responsibilities. The transition from lecturer to facilitator will not happen overnight and must be accompanied by institutional and professional commitment to incorporate research findings into professional development activities. Beyond merely providing technical training in the latest (and soon obsolete) technology, professional development activities will need to focus on crucial classroom variables that will ultimately determine the level of productive interaction and intellectual engagement apropos to the individual and group. (Barr and Tagg:1995).

2.7.11.1. How is teaching and learning different under virtual education?

Systemic reform has brought about a number of changes to tertiary education, none more significant than what students learn and how they learn it. With time

and distance effectively removed as constraints, colleges and universities are serving a more heterogeneous clientele with diverse educational backgrounds and needs. As Plater (1994) suggests, "these new century students confront us with the possibility that a post-secondary educational system designed to manage enrollment growth by weeding out unprepared or uncommitted students may no longer be appropriate or economically defensible" (Plater,1994:9).

Perhaps the most telling difference between learning in the traditional and virtual modes is the kind and extent of interaction. In the traditional classroom, the potential for learner-instructor and learner-learner is very high, but instructors have largely ignored this mandate for change and continue to employ the lecture mode as the predominant method of instruction. In the virtual classroom, on the other hand, technology supports collaborative learning, heterogeneous groupings, problem-solving and higher order thinking skills--educational processes that a lecture format cannot facilitate.

Today's higher education establishment is an aggregate of three functions, namely, teaching, service, and research. Critics of higher education today contend that especially since the Second World War staff have placed emphasis on the research function to the detriment of teaching and service at a time when our culture demands the preparation of workers for a competitive and volatile economy. Voices from within the academy have proposed a re-conceptualization of scholarship, one that expands the practice of present-day research to include integration, application, and teaching (Boyer 1990).

New forms of scholarship may necessitate a new epistemology. The scholarships of integration, application, and teaching entail "action" research that may fall outside the boundaries of prevailing institutional epistemology. College

and universities must become learning organizations that foster originality and innovation.

Calls from external constituencies for academic institutions to demonstrate greater accountability and systemic improvement have prompted many colleges and universities to adopt the principles of Total Quality Management (TQM). Less a set of specific tools than an underlying philosophy, TQM has been distilled by Chaffee and Sherr (1992) into three simple ideas: defining quality in terms of customer needs, bettering work performance, and improving administration. If TQM is the underlying philosophy, Information Resource Management is the facilitator of broad access to information.

In the academic sphere, TQM faces stiff faculty resistance. Many faculty see TQM as "another management fad from the evil empire of business" (Chaffee and Sherr 1992, p. 93). If academic TQM is to emerge as an agent of organizational reform, it is likely to come about more through faculty initiative than external pressure.

2.7.11.2. Governance in virtual education be managed?

As large sums of money are contemplated and eventually allocated for educational technology development, college and university boards face a number of daunting tasks (Kay;1992). First, boards must closely monitor regulatory legislation and actively participate in public policy debate. Distance education providers must stay abreast of federal and state regulations, which often adversely affect the inter-state delivery of programmes and services. Second, boards must establish a telecommunications policy and a strategic plan for its implementation. Third, boards must shepherd resources by defining genuine instructional needs and identifying appropriate technological solutions to fulfill them.

2.7.12. Advantages of online distance education

2.7.12.1. Cost Reduction

Meta-analyses conducted by Perraton (1994) found the application of computer technology in teaching, learning and training yielded the following cost-effective benefits:

- Computer-Aided Instruction (CAI)) and Computer-Based Instruction (CBT) Orlansky and String (1979) -30 percent reduction in time to achieve criterion performance using computer-based instruction in military training
- Fletcher (summary of 47 studies) (1991) -30 percent time savings, 30-40 percent cost savings, and improved achievement using multimedia instruction
- Levin (summary of 8 programs) (1989) -CAI proved more cost-effective than reducing class size or extending length of school day -but less effective than peer tutoring
- Hall (summary of 8 case studies) 1995 -CBT in business reduced training time 40 to 80 percent compared with traditional text-based training -CBT in business reduced training costs 40 to 85 percent compared with traditional training
- Roberts (1991)-IBM cut its annual training budget (over $1 billion) by $30 million by using CBT Intelligent Tutoring Systems (ITS) U.S Air Force-ITS traditionally deliver high student learning outcomes, but at a high price; the Air Force aims to cut development costs by 95 percent and development time by up to 80 percent - the result would be an overall reduction in training costs
- Distance Learning Open University, United Kingdom (1989) -cost per graduate lower than conventional university's.
- Deakin University, Australia (1989) -cost per student 97 percent that of on-campus student

- Indira Gandhi National Open University, India (1991) -cost per student between 8 and 40 percent of cost at conventional university
- Open University teacher training, Indonesia (1988) -cost per student about 60 percent of cost at conventional university
- Everyman University, Israel (1978) -cost per graduate estimated at one-half cost at conventional university

Using telecommunications to offer distance learning for over three decades, the Open University (OU) in Great Britain is one of the first very large-scale experiments in distance learning at the higher-education level. The OU boasts average per-student costs of around one-half those of conventional campuses. Let us briefly examine the success of the OU to show why distance learning can help reduce costs.

Achieving cost reductions at OU involved the employment and application of technologies that allowed many students to be taught at once. Class sizes at the Open University usually exceeded 200. The larger the class size, the greater the student-teacher ratio, which in turn lowered labour costs and spread high development and initial technology costs. Bates (1984:231) states "that break-even points--class sizes for which the cost of distance education and traditional delivery are roughly equal--will vary depending on, among other things, the size of technology investment and the course being taught".

Although the teaching methods of the OU are well known and documented, it is worth however emphasizing an important aspect that is often misunderstood. The OU has developed widely admired methods for the use of teams in the design and production of teaching resources, mainly paper-based materials, and although it still carries in many people's minds the image of the "University of the Air," it

is the UK-wide network of part-time tutors who provide the main teaching that is experienced by OU students (Saba:1988). Tutorial support is provided by travelling to frequent arranged face-to-face meetings either by, telephone contact or feedback on written assignments. In a real sense, the formal aspects of studying for an OU degree differ little from those experienced by students on a conventional campus. The cost per student, however, is about one-half that of conventional campus universities. The OU is now exploring how best to build on its success through the emerging advanced learning technology (ALT), in particular the use of CMC (computer-mediated communication) for collaborative learning and the delivery of its course materials through CD-ROM. (Mays, 2000)

Secondly, a substantial amount of labour must be displaced by technology. Typically, labour is over 95 percent the cost of the class; so, modest trades of faculty for machines will not substantially change overall prices. Consequently, distance learning works best in relatively "standard" courses--math and the sciences--for which knowledge is relatively routine, can be embedded in the technology, and can have much teaching delegated to it. Alternatively, to expand the range of courses that can be taught at a distance, the use of technology should be carefully designed so that expensive labour at least can be replaced by cheaper help. For example, the Open University makes liberal use of tutors (replacing many full professors), either in person or on the phone.

Third, technology should substitute for labour as simply as possible. As the example of the Open University suggests, most low-cost distance learning does not fundamentally change the learning experience for the student, or the teacher. A computer application that promised to play a substantial role in teaching but that also demanded broad changes in staff skills and activities could actually increase labour costs, even while guaranteeing savings in teacher time.

The bottom line, then, is that today's distance-learning technology is largely limited to imparting relatively routine skills and knowledge, taught en masse, through relatively traditional methods. Most of the best examples actually come from military and corporate training, rather than from higher education (Morgan:1991). According to Schuemer (1993), large companies such as Ford Motor Company contract for distance instruction to help their employees learn how to use tools such as spreadsheets and word processors, as well as specialized equipment. He goes on to quote the example of Hewlett-Packard who have estimated that between 1993 and 1999, the company saved millions of dollars each year using distance learning to train employees more effectively and more efficiently than with conventional methods. These examples explain why well over one-half of distance learning now goes on not in academic settings but in businesses--a market that is expanding so rapidly that whole TV networks are now dedicated to corporate distance learning.

The Internet is increasingly being viewed as a medium that can bring distance learning and its cost benefits into the higher-education sector. In the next subsection, we look at the cost and other advantages the Internet in particular can provide as a distance-learning tool for higher-education institutions.

2.7.12.2. Increased Access

With a view to cost increasing access, almost all higher-education institutions in Europe and the United States are considering distance-learning programmes. It is believed that the Internet will be the most cost-effective way to deliver a new generation of distance-learning courses. In 1996, the U.S. Distance Learning Association (http://www.usdla.org/ home.html) listed many universities with homepages outlining their WWW and Internet-based courseware.

At the same time, the World Lecture Hall, a Web site managed by the University of Texas, has become a "virtual repository," organizing links to hundreds of other sites that are making Web-based class materials available to anyone who is interested.

Emerging Internet courses include a wealth of material about the class (lectures, exams, assignments) and references to relevant online literature (books, programs, tools such as the periodic table), all accessible at the click of a mouse on a hypertext link. Each of these sources can be constructed as multimedia documents, including pictures, digitized audio versions of lectures, presentation overheads--even simulations, which can be run to give a much more dynamic impression of processes and structures. Full high-bandwidth interactivity which supports multi-person, multimedia dialogues in real-time has provided substantially richer learning experiences for students than conventional face to face contact learning.

Increased access brought about by computer technologies have resulted in the following:

- online lecture notes
- lecture "overheads"
- digitized audio of actual lectures, which can be played, rewound, replayed
- homework assignments and answers, updated weekly
- electronic archives of past final exams and answers
- pointers to online resource material.

Students are able to access these different resources with the simple click of a mouse. Further examples of how the Internet increases access can be seen from

the following:

- ***Calendar of class sessions.*** Often presented as a table, including date of the class and daily topic. The topic description is often hypertext; clicking on it allows access to the material for the class (lectures, overheads, etc.).
- ***Virtual office hours.*** Some professors include buttons that allow students to send e-mail to them or to other students in the class.
- ***"Chat" rooms.*** In some classes, students can login and engage in text-based discussions with other students from the class who also happen to be on at the same time. Staff can also often pre-arrange virtual office hours: times at which they will be logged-on as well.
- ***Video and movie clips***. Video clips (usually less than a minute in duration, given current time and space constraints) are sometimes included in Web courseware to demonstrate complex physical processes, for example.
- ***"Live" computer programs.*** In an increasing number of Web-based courses, students can run simulations, in addition to viewing static lecture materials. The simulations run on remote machines, but display on the user's machine, and often permit the student to interact with the simulation and control its execution-for instance, using forms to input simulation parameters.

2.7.12.3. Increased productivity

Web-based distance learning can enhance productivity in higher education in several ways. One instance is by providing a more powerful and flexible medium, the Web enables course designers / developers to construct higher-quality courseware for a wider range of classes than ever before. With richer courseware, classes can be taught almost exclusively through technology; and in courses in

which information technology previously had no part, it may play at least a supporting role.

Although few realize it, the Internet is not only a better medium for learning and interaction but a cheaper way to deliver instruction - something providers of corporate training have already figured out. For example, corporate providers are quickly trading their old on-demand video systems for more-flexible and less-expensive high-capacity intranets, which use Internet-style communication on private networks to deliver full-motion video to hundreds of viewers at once, at the click of a mouse.

High-bandwidth with low-cost connections to the WWW is available in several forms. Many homes today access the Internet cheaply through ISDN phone connections, providing about 5 to 10 times the effective bandwidth of ordinary phone lines. More interestingly, modems provide very high-speed Internet connections, at roughly the cost of the standard telephone service.

2.7.12.4. Personalized Education

Imagine the best desktop computer slung over your shoulder like a slim handbag, connected to the billions of resources available on the Internet, supporting instant multimedia communications anywhere on the planet. This is the reality that is being afforded by technology enhanced distance education. The development and emergence of various technologies such as Video Desktop Conferencing, Internet based applications, Web Based Teaching and Personal Access Devices (PADs) have personalized education to such an extent, that individuals are now in a position to study what they want, where they want and how they want.

Education from the reception grades right up to the doctoral level is based on the model of the classroom / lecture hall format. At the reception grade levels, classes are organized and grouped according to the age of the learner and not by the type of learning that the learner requires. In post-secondary education, age becomes less of a factor but education is still fundamentally time-based and depends on standard curricula for groups of students (Schuemer:1993). The model is that of a group of people starting at the same time, studying the same materials at the same pace, and ending at the same time.

Dunning (1987) also concurs with Schuemer (1993) by stating that the above model of education was adopted because it was the most efficient. However he goes on to argue that the time place model is heavily dependent on the teacher, and the teacher in turn is responsible for assembling, and often presenting, the materials to be learned. For the most part, customization and personalization are not practical.

Distance education is topic based rather than class-based. This model has been already explored by such alternative educational models as programmed learning and constructive learning. The idea is that learning is not paced so much by the teacher as it is by the student's own capacity to acquire the material. Additionally, the topic selection for an individual's education will be based on that student's need, not the pre-selected curriculum for a particular class. Any given student may at any time be taking any given topic, and progressing at a pace through that material appropriate to his or her learning ability.

Gibbons (1999: 231) argues that, "as long as the class remains the dominant paradigm of education, the potential for improved efficiencies inherent in the new technology will remain unrealized. Only when the capacity for new technology to

customize and personalize education are employed will the efficiencies begin to show".

2.7.12.5. Time and Place Independence

Online learning is in essence distance learning, and distance learning in turn is characterized by time and place independence. Technology enhanced distance learning has made time and place independence a cornerstone in its philosophy. This is so because education via distance has become portable and this in turn has been made possible by the various computer technologies such as PADs, lap top computers, cell phones and the like.

Time independence is often characterized in terms of a student's working hours. When characterizing time independence, for example, writers often point to a student's ability to study in the evening, or over weekends. In a rural environment, where one's time for study is dependent on the crops and the weather, time independence is often characterized in terms of being able to work on rainy days, or after the crop is in for the winter.

Time independence in online learning is all of this and more (Saba:1988). Burge (1993:127) states that, "the best way to characterize the change is to say that time in online learning ceases to be an objective standard which applies to many people at once, and instead becomes an individualized standard, against which personal learning and achievement are indexed". Indeed, this can be seen "when we look at how time is employed as a (relatively constant) variable in traditional learning, and employ it as a (relatively flexible) variable in online learning" (Zuboff, 1988:57).

Zuboff (1988) reminds us that, the following time-variables may now be adapted to individual needs, namely: daily start and end time, hours of work, break time, time per lesson, time per activity, time per test, days of the week, month or year worked, hours per week, month or year worked, start date of a course or other educational activity, end date for course or activity, number of courses in a week, month, or year, etc. It must be also be pointed out that place independence does not mean only studying at home, although it does not prevent this. Place independence means that students are not tied to any particular location as they conduct their learning activities. Traditional and even contemporary distance learning is not especially place - independent.

Traditional education is, of course, not place independent at all. This is the case because, first, students must be assembled into a class at some particular location, and second, because they must be located where the learning resources (the teacher, the library, etc.) are situated. Thus in traditional education, students assemble at a certain place - a school, college or university - each morning and stay there until the day's learning activities are complete.

In distance learning, the materials are brought to the student. Thus the teacher is presented to the class either via audio or video conferencing, or mediated via print or electronic instructional materials. Yet even this form of learning is not especially place independent. Although it is true that print materials may be read anywhere, except perhaps in the shower, students otherwise must be located by a computer, telephone, teleconferencing facility or "TV classroom" in order for instruction to occur. While less place dependent than the traditional classroom, students nonetheless have the full mobility that place independence implies (Saba:1988).

2.7.12.6. Learning Communities

Humans to a large degree are social animals, and consequently, the most important of our needs are served by communities. This is why, we tend to cluster in cities, towns and villages. It is why, when you look at children playing in the schoolyard, they are not dispersed, but clustered. It is why bars, clubs and recreational facilities attract us. This is also evident in learning. Resier (1987) argues that, education is not merely the acquisition of new information and skills, but a social activity, where knowledge and skills are demonstrated, criticized, or merged.

Useem (1999) maintains that distance education promotes two major types of community, namely:

- the topic or interest based community, and
- the physical or peer based community.

Useem (1999) believes that interest based communities are collections of people who, although they may be geographically dispersed, share a common location on the Internet. For example, Gardeners hang out at gardenweb. Computer geeks hang out at Wired. Distance educators have found a home at the Distance Educator.com. Across the Internet, thousands of topic-specific communities have begun to emerge.

The existence of online communities has drawn a lot of commentary over the last year or so. This is in part due to their proliferation, and in part because the dynamics of an online topic based communities are singular. From time to time we read about the close and intense relationships developed by members of online communities, about the openness of communication in an online environment, about the degree to which people commit themselves to their online homes.

Online educators especially, build interest based communities whether they intend to do this or not, because the mechanics necessary for the creation of an online topic based community are present in the structure of almost any online course. In order to create a topic based community, one only needs a topic, a group of geographically dispersed people interested in that topic, and a means of shared communication, such as a bulletin board or online chat.

In an educational context, what this means is that a great deal of the learning - and learning materials - will be those constructed by the students themselves. This can be seen not only in the use of discussion lists in online courses, but also in the creation of topic-based web pages. Students online also tend to be very vocal in their criticism of the interface, of the instructor's tone, of the usefulness of resource materials, and of the colour of the background.

The era in which lifelong friendships are formed between people on opposite sides of the planet are already in place and this has been brought about by electronic communication technologies. Online learning will inevitably tap into this trend, and because of the deep nature of the learning experience, will accelerate it.

A peer based learning community is a group of people attending a particular school or learning centre. People become members of the community because of a shared location, workplace, cultural background, religion, or language and because of shared experiences in online learning. While people in a topic-based community, for example, will discuss this or that monograph or expert in the topic, people in a peer based learning community will discuss this or that institution, interface software, or community events.

Peer based learning communities are vital to learning because they provide a safe environment in which to learn. A person does not feel cast adrift on the sea of the Internet when working in a community of people facing similar needs and challenges. Though each may be pursuing a different educational goal, their overall objective and means of travel is the same, and thus they offer mutual support, encouragement, and reassurance.

2.8. UNDERSTANDING AND IDENTIFYING THE PROFILE OF DISTANT EDUCATION STUDENTS

The primary role of the student is to learn. Under the best circumstances, this challenging task requires motivation, planning, and the ability to analyze and apply the information being taught. In a distance education setting, the process of student learning is more complex for several reasons (Schuemer, 1993):

- Many distance-education students are older, have jobs, and families. They must coordinate the different areas of their lives which influence each other — their families, jobs, spare time, and studies.

- Distant students have a variety of reasons for taking courses. Some students are interested in obtaining a degree to qualify for a better job. Many take courses to broaden their education and are not really interested in completing a degree.

- In distance education, the learner is usually isolated. The motivational factors arising from the contact or competition with other students is absent. The student also lacks the immediate support of a teacher who is present and able to motivate and, if necessary, give attention to actual needs and difficulties that crop up during study.

- Distant students and their teachers often have little in common in

terms of background and day-to-day experiences and therefore, it takes longer for student-teacher rapport to develop. Without face-to-face contact distant students may feel ill at ease with their teacher as an "individual" and uncomfortable with their learning situation.

- In distance education settings, technology is typically the conduit through which information and communication flow. Until the teacher and students become comfortable with the technical delivery system, communication will be inhibited.

Students enrolled for the first time at distance education institutions will no doubt have some difficulty determining what the demands of a course of academic study actually are. As beginner students, they may not have the support of an immediate peer group or ready access to the instructor, or familiarity with the technology being used for delivery of the distance-education course. In general, they may be unsure of themselves and their learning especially, if they hail from an educational institution that was characterized by traditional face to face contact education. Morgan (1991) suggests that distant students who are not confident about their learning tend to concentrate on memorizing facts and details in order to complete assignments and write exams. As a result, they end up with a poor understanding of course material. Morgan (1991) goes on to add that the teaching strategies of most traditional educational institutions are based on memorization of facts. He reminds us that students enrolling at distance education institutions for the first time and specifically those students who hail from traditional face to face contact institutions, must be given special care in terms of details as a "surface approach" to learning and summarizes it as follows:

- ***Surface approach:***
  - Focus on the "signs" (e.g., the text or instruction itself).
  - Focus on discrete elements.
  - Memorize information and procedures for tests.
  - Unreflectively associate concepts and facts.
  - Fail to distinguish principles from evidence, new information from old.
  - Treat assignments as something imposed by the instructor.
  - External emphasis focusing on the demands of assignments and exams leading to a knowledge that is cut-off from everyday reality.

Distant students need to become more selective and focused in their learning in order to master new information. The focus of their learning needs to shift them from a "surface approach" to a "deep approach". Morgan (1991) summarizes this approach as follows:

- ***Deep Approach:***
  - Focus on what is "signified" (e.g., the instructor's arguments).
  - Relate and distinguish new ideas and previous knowledge.
  - Relate concepts to everyday experience.
  - Relate and distinguish evidence and argument.
  - Organize and structure content.

- Internal emphasis focusing on how instructional material relates to everyday reality.

The shift from "surface" to "deep" learning is not automatic. Brundage, Keane, and Mackneson (1993) suggest that adult students and their instructors must face and overcome a number of challenges before learning takes place. These challenges could be outlined as follows:

- ***"Becoming and staying responsible for themselves"***. High motivation is required to complete distant courses because the day-to-day contact with teachers and other students is typically lacking. Instructors can help motivate distant students by providing consistent and timely feedback, encouraging discussion among students, being well prepared for class, and by encouraging and reinforcing effective student study habits.

- ***"Owning one's strengths, desires, skills, needs"***. Students need to recognize their strengths and limitations. They also need to understand their learning goals and objectives. The instructor can help distant students to explore their strengths/limitations and their learning goals/objectives by assuming a facilitative role in the learning process. Providing opportunities for students to share their personal learning goals and objectives for a course helps to make learning more meaningful and increases motivation.

- ***"Maintaining and increasing self-esteem"***. Distant students may be afraid of their ability to do well in a course. They are balancing many responsibilities including employment and raising children. Often their involvement in distance education is unknown to those they work with and ignored by family members. Student performance is enhanced if learners set aside time for their instructional activities and if they receive family support in their academic endeavours. The instructor can maintain

student self-esteem by providing timely feedback. It is critical for teachers to respond to students' questions, assignments, and concerns in a personalized and pleasant manner, using appropriate technology such as fax, phone, or computer. Informative comments that elaborate on the individual student's performance and suggest areas for improvement are especially helpful.

- ***"Relating to others"***. Students often learn most effectively when they have the opportunity to interact with other students. Interaction among students typically leads to group problem solving. When students are unable to meet, appropriate interactive technology such as E-mail should be provided to encourage small group and individual communication. Assignments in which students work together and then report back or present to the class as a whole, encourage student-to-student interaction. Ensure clear directions and realistic goals for group assignments (Burge, 1993).

- ***"Clarifying what is learned"***. Distant students need to reflect on what they are learning. They need to examine the existing knowledge frameworks in their heads and how these are being added to or changed by incoming information. Examinations, papers, and class presentations provide opportunities for student and teacher to evaluate learning. However, less formal methods of evaluation will also help the students and teacher to understand learning. For example, periodically during the course the instructor can ask students to write brief reflections on what they have learned and then provide an opportunity for them to share their insights with other class members.

- ***"Redefining what legitimate knowledge is"***. Brundage, Keane, and Mackneson (1993) suggest that adult learners may find it difficult to

accept that their own experience and reflections are legitimate knowledge. If the instructor takes a facilitative rather than authoritative role, students will see their own experience as valuable and important to their further learning. Burge (1993) suggests having learners use first-person language to help them claim ownership of personal values, experiences, and insights.

- ***"Dealing with content"***. Student learning is enhanced when content is related to examples. Instructors tend to teach using examples that were used when they received their training. For distance learning to be effective, however, instructors must discover examples that are relevant to their distant students. Encourage students to find or develop examplars that are relevant to them or their community.

Teaching and learning at a distance is demanding. However, learning will be more meaningful and "deeper" for distant students, if the students and their instructor share responsibility for developing learning goals and objectives and if they interact actively with all the stakeholders.

2.9. GUIDELINES FOR THE SELECTION OF MEDIA IN DISTANCE EDUCATION DELIVERY

The first question that appears in the minds of distance education planners relates to the dilemma of selecting the most appropriate media teaching or training organization as it considers setting up its first distance education programme. Moore (1996) argues that each medium has qualities that are appropriate for particular types of messages, and some learners tend to prefer some media rather than others. The art of effective instructional design in distance education depends largely on making the right selection among media for each particular content and

each type of learner within various constraints, particularly those of cost. Significant considerations include access to expertise in designing good-quality programmes for available media and the availability of support services to the learners who use them, usually through the provision of support personnel in the learners' localities.

- ***Consider the learners.*** How many will there be in each class? At how many sites? How well motivated are they? Recorded media can be delivered to any number of students, although other considerations may not make this practicable. Two-way video interaction will be more effective with a small number of sites and a smaller number of students or trainees; one-way video, two-way audio with a larger number of sites and students; and audio with still larger groups. Learners' locations also will become of some significance, since participating in real-time communication at inconvenient hours (e.g., because of different time zones) demands high levels of motivation.

  Motivation is probably the single most important variable determining learning at a distance or in other educational environments. Previous education is also extremely important. Can it be assumed that your audience has a high level of previous education and will, therefore, have the ability as well as the motivation to study at a distance? The best materials and instruction may not work if there is little motivation to learn; conversely, weaker materials may be effective if the motivation is high. The instructors may not be able to do much about this situation; however, administrators or managers can boost motivation by specific strategies. Whereas in business, rewards might be in the form of salary increments, in schools and colleges rewards are usually in the form of grades, and motivation may be less of a

problem (although not necessarily so, of course). Increasing motivation and therefore enhancing learning outcomes can help institutions and organizations recoup much of their investment in education or training.

- ***Consider the content***. How much of this content can be recorded, and what needs to be provided in real time? If we can identify that part of the subject which is likely to remain stable and unchanged for a considerable period of time, it may be recorded on relatively expensive (to design and produce) media, such as videotape or CD-ROM, or published in a good-quality text. (Attractive text should be preferred where economically justified by numbers of students or trainees and by the "shelf-life" of the content.) Those parts of the subject that are most likely to change frequently may be recorded on relatively inexpensive media (i.e., desk-top publications and audiotape), while the most volatile subjects will have to be delivered via real-time media, i.e., the teleconference media. Content needs to be analyzed to identify which parts can effectively be communicated by text, which require the spoken word and other audio attributes, which can better be illustrated visually, and which need interaction.

  If it can be assumed that recorded materials alone will be sufficient, there is no need for interactive media. However, it is seldom the case that most learners in a class will achieve learning goals as well independently as by participating in discussions, project activities, and similar interactive experiences. Frequently, the basic information can be communicated by print, expert commentary and authentic sounds by audiotape, and demonstrations and motivational excerpts by videotape. Interaction provides opportunity for students to practise

using ideas and information and to obtain motivational feedback from an instructor.

If the learners are relatively sophisticated and the subject matter relatively conceptual, lower-cost interactive media (e.g., audio- and computer conferencing) will suffice; videoconferencing is more expensive and useful where verbal explanations are not adequate or where visual demonstration is essential—but frequently its use is not justified pedagogically.

- ***Consider local learner support, pedagogical, technical.*** A major element in successful distance learning is the positioning by the institution or organization of local support personnel. These people need not be specialists in the content, but rather act as intermediaries between students or trainees and the central teaching organization. Each student should know whom to contact locally to resolve problems of content, learning process, and administration of the learning programme. Continuity of experience is desirable. Familiarity with the teaching organization, so that problems can be referred to central experts, is essential. Local support may include the ability to set up and trouble-shoot teleconference technology. Local support personnel need to be recruited with care, trained appropriately, monitored and supervised, and well rewarded.

- ***Consider design and production.*** As one considers designing and delivering ones programme, one must ask if one has the expertise in-house to design effective teaching materials to be delivered by the various media and, if not, whether one has access to external design and production resources (in which case a system for careful

monitoring of the external agency is needed). Very few commercial or conventional educational organizations have personnel who know how to teach in print, by recorded media, and by teleconference. It would be wise to consider appointing specific in-house staff who could specialize in these skills, designing and producing the materials themselves as much as possible, but also negotiating for whatever further expertise is needed through outside production agencies.

- ***Consider instruction.*** Does one have the expertise or does one need to train staff to provide interaction with students or trainees? How will such interaction be accomplished? By correspondence? In real-time audio conferences? In computer conferences? In video conferences?

- ***Consider costs and availability.*** Is it necessary to install hardware for the reception and use of our instructional programmes, or is hardware already in place? Is there money for the cost of real-time teleconferencing? More importantly, is there sufficient money to pay for good-quality design, production, and learner-support?

Other things being equal, a lower-cost mixture of media obviously is to be preferred over a higher-cost solution (Moore:93). If human resources are limited in number or in experience with distance education design/delivery of instruction, and if money is limited, it is better to focus the resources on obtaining good-quality instructional design and good quality instruction and learner support, while using relatively inexpensive media. If learner motivation is not high, it may be necessary to use "motivating media," i.e., recorded and interactive video; however, doing this with the necessary quality will be more costly.

2.10. RECOGNIZING THE THREE TYPES OF INTERACTION IN DISTANCE EDUCATION

2.10.1. Learner-Content Interaction

The first type of interaction is interaction between the learner and the content or subject of study. This is a defining characteristic of education. Without it there cannot be education, since it is the process of intellectually interacting with content that results in changes in the learner's understanding, the learner's perspective, or the cognitive structures of the learner's mind. It is this type of interaction that I believe is at least partly involved in what Holmberg (1986) calls the "internal didactic conversation" when learners "talk to themselves" about the information and ideas they encounter in a text, television programme, lecture, or elsewhere.

The oldest form of distance teaching that aimed to facilitate interaction with content was the didactic text. In medieval times nearly all texts were aimed at instructing, not merely informing, and certainly not at entertaining. In the nineteenth century the use of print for teaching was advanced by the invention of home study guides that accompanied a text, providing explanations of it and directions for its study. In more recent times learners have interacted with content broadcast on radio and television programmes, and with electronic recordings on audiotape, videotape, and computer software. Interactive videodisc is the most advanced form of didactic interaction invented so far.

Some learning programs are solely content-interactive in nature. They are one-way communications with a subject expert (sometimes assisted by an instructional designer), intended to help distant learners in their study of the subject. No other professional teaching expertise is provided, and learning is largely self-directed. According to the findings of adult education research, the majority of the adult

population undertakes self-directed study (Tough:1971; Penland:1977; Hiemstra:1982).

2.10.2. Learner-Instructor Interaction

The second type of interaction regarded as essential by many educators, and as highly desirable by many learners, is interaction between the learner and the expert who prepared the subject material, or some other expert acting as instructor. In this interaction, distance instructors attempt to achieve aims held in common with all other educators. First having planned or been given a curriculum, a programme of content to be taught, they seek to stimulate or at least maintain the student's interest in what is to be taught, to motivate the student to learn, to enhance and maintain the learner's interest, including self-direction and self-motivation. Then instructors make presentations or cause them to be made. These may be presentations of information, demonstrations of skill, or modelling of certain attitudes and values. Next instructors try to organize students' application of what is being learned, either the practice of skills that have been demonstrated, or manipulation of information and ideas that have been presented. Instructors organize evaluation to ascertain if learners are making progress, and to help decide whether to change strategies. Finally, instructors provide counsel, support, and encouragement to each learner, though the extent and nature of this support varies according to educational level of the learners, the teacher's personality and philosophy, and other factors.

The frequency and intensity of the teacher's influence on learners when there is learner-teacher interaction is much greater than when there is only learner-content interaction. In preparing instruction for learner-content interaction the educator can design written and recorded material that aims to motivate, make presentations, facilitate application, evaluate, and even provide a degree of student

affective support. However, the lack of feedback from individual learner to educator makes these teaching procedures highly generalized, not individual, leaving the ultimate responsibility for maintaining motivation, for interacting with the presentation, for analysing the success of application, and for diagnosing the difficulty on the learners themselves, requiring a high degree of learner autonomy.

Where interaction between learner and teacher is possible through correspondence or teleconference, the learner comes under the influence of a professional instructor and is able to draw on the experience of the professional to interact with the content in the manner that is most effective for that particular individual learner. The long recognized advantage of correspondence instruction is its individual nature. When the correspondence instructor sits with a set of student papers, there is no class; instead, the instructor enters into a dialogue with each individual, perhaps attending to the motivational aspect with one student and to the explanation of a misunderstanding with another. While the students and their instructor are attending to a common piece of presentation (usually in a set text, but quite likely on audio- or videotape), each student's response to the presentation is different, and so the response to each student is different. To some a misunderstanding is explained, to others, elaborations or simplifications are given. Yet for others, analogies are drawn or supplementary readings suggested.

The instructor is especially valuable in responding to the learners' application of new knowledge. Whatever self-directed learners can do alone for self-motivation and interaction with content presented, they are vulnerable at the point of application. They do not know enough about the subject to be sure that they are:

- applying it correctly,
- applying it as intensively or extensively as possible or desirable, or

- aware of all the potential areas of application. It is for reality testing and feedback that interaction with an instructor is likely to be most valuable.

2.10.3. Learner-Learner Interaction

It is the third form of interaction, a new dimension of distance education, that will be a challenge to our thinking and practice in the 1990s. This is inter-learner interaction, between one learner and other learners, alone or in group settings, with or without the real-time presence of an instructor.

Through the history of education the class or educational group has more often than not been organized for reasons that have nothing to do with learners' needs. Currently many classes are organized because the class is the only organizational form known to most teachers and because in the short term, though not usually the long term. it is the cheapest way of delivering the teaching acts of stimulation, presentation, application, evaluation, and student support (Moore:96).

However, learner-learner interaction among members of a class or other group is sometimes an extremely valuable resource for learning, and is sometimes even essential. Phillips, Santoro, and Kuehn (1988) describe the importance of interaction among members of an undergraduate class who had to learn skills of group interaction. With the rationale that skilled committee and other group work is essential for functioning in modern society, especially in business, Phillips et al. taught principles of, and trained students in, effective group functioning. This is an example of content that makes group interaction especially valuable. One could study the presentation of principles of group leadership and group membership alone, or in interaction with an instructor. However, at the point of application and evaluation, the availability of a group of fellow learners becomes invaluable for learner and instructor alike. Interestingly, the researchers found they could not

effectively facilitate interaction among members of a large undergraduate class in face-to-face classrooms, and turned to distance education techniques, using recorded video and computer interaction to achieve higher performance in group behaviours than they had been able to obtain in live groups. Thus, these educators gave their students the advantage of individual interaction with the instructor by electronic correspondence, and the benefits of peer group interaction by asynchronous e-mail and by synchronous computer "chatting."

Apart from teaching interaction itself, when else is inter-learner group interaction between students highly desirable? The answer to this question depends largely on the circumstances of the learners and their age, experience, and level of learner autonomy. For younger learners, the teaching task of stimulation and motivation will be assisted by peer-group interaction, though this is not particularly important for most adult and advanced learners, who tend to be self-motivated.

It is most useful for some types of presentations, such as up-to-the-minute reports from experts, and for purposes of application and evaluation. In my audio and interactive video classes, weekly presentations are shared by two or more students and last typically for an hour. This is followed by peer discussion and analysis in small groups and then feedback and further discussion. This process is successful because of the level of self-management that adult graduate students possess, and it not only acknowledges and encourages the development of their expertise but also tests it, and teaches important principles regarding the nature of knowledge and the role of the scholar as a maker of knowledge.

A significant characteristic of distance education, and a major contribution to the field of education, has been an awareness of the benefits of division of labour in teaching. With the rapid expansion of telecommunications in American education, the principle of specialization of teaching activity and use of

communication medium must be applied to distinguish more deliberately among the three types of interaction described above. Educators need to organize programmes to ensure maximum effectiveness of each type of interaction, and ensure they provide the type of interaction that is most suitable for the various teaching tasks of different subject areas, and for learners at different stages of development.

The main weakness of many distance education programmes is their commitment to only one type of medium. When there is only one medium it is probable that only one kind of interaction is permitted or done well. While correspondence gives superior learner-content interaction and good, though slow, learner-instructor interaction, it gives no learner-learner interaction. The teleconference group is excellent for learner-learner interaction, and for some types of instructor-learner interaction, but is frequently misused for instructor presentations that could be done better by print or recorded media. In the time saved by avoiding such presentations, a teleconference could stimulate and facilitate learner-learner interaction that has been difficult or impossible to achieve in distance education until now.

2.11. Conclusion

The power of distance education in terms of increasing access, flexibility, personalizing education, reducing costs, increasing productivity, etc cannot be over stated. The literature review proved very conclusively that distance education is a very popular and effective mode of education. Both school and tertiary students have a lot to benefit in terms of studying via distance. Developing countries who lack the necessary infrastructure in terms of providing face to face contact education can find a very good and comfortable home in adopting distance education. The literature review also showed that technology enhanced distance

education always lead to better quality teaching and learning. The role of technology in promoting learning communities (both peer learning communities and topic based communities) are sustained to a far greater degree in distance education. Information communication technologies, especially those generated by computers as redefined teaching and learning. The effects of globalization has further demanded a "new kind of worker", namely the knowledge worker. It is only through the adoption and diffusion of technology that such knowledge workers can be developed.

There is no doubt that educational landscapes throughout the world have long recognized the value and significance of distance education. Distance education must not be seen and perceived as an alternate education system. Distance education ought to be included in the mainstream of educational development. The move towards mixed mode education delivery, is taking the higher education platform by storm and thus tertiary institutions ought to be ready by way of plans and policies to implement mixed mode delivery systems.

Research has shown that there is no one single mode of distance education delivery that is more superior than another. The ideal would be to make use of a combination of delivery modes such as multi mediated technology (television, computers, Internet, etc). The selection of media in distance education delivery is a complex process. Distance education planners and designers would have to take careful cognizance of, the type of learners they wish to service, the number of learners they wish to accommodate and the available budget at their disposal. It must be pointed out that higher education is increasingly being commodified. The internationlization of higher education is unavoidable due to the proliferation of various information technologies. As such there will be strong competition amongst institutions to attract students. Higher education institutions will have to

thus reposition themselves to attract students since students will have a wide choice and selection of institutions.

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CHAPTER THREE

THEORETICAL FRAMEWORK

"It is unfortunatley true that the failure of correspondence study (distance education) to develop a theory related to the mainstream of educational thought and practice has severely handicapped the development and recognition of the field"

Wedemeyer, 1974: 43

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3.1. INTRODUCTION

The discipline and field of study of distance education as an alternate system of education, has been largely ignored due to the lack of a universally accepted theory around its practice and policy within the educational landscape. Most educational landscapes of the world have tended to push distance education to the periphery of its mainstream educational activities. Sewart, et. al. (1988) argue very strongly that most theories that underpin distance education have been highly disjointed and fragmented. Perraton (cited in Sewart, et. al, 1988) has also noted that theories on distance education have placed too much emphasis on the mechanical, practical and logistical components at the expense of theory and philosophy.

For far too long, distance education was analyzed and classified as being separate and second rate to mainstream conventional education. Distance education has thereby suffered in the main, due to a lack of identity and a sense of belonging within the conventional education system. It must be emphasized that distance education is a powerful alternate system of education and as such could enhance teaching and learning in multiple ways which will be discussed in the latter part of this chapter.

For the purposes of this study, the following three theories of distance education will be discussed, namely, the theory of....:

- Autonomy and Independence
- Industrialization
- Expanding Education, Dialogue And Methods
- Globalization

3.2. THEORIES OF DISTANCE EDUCATION

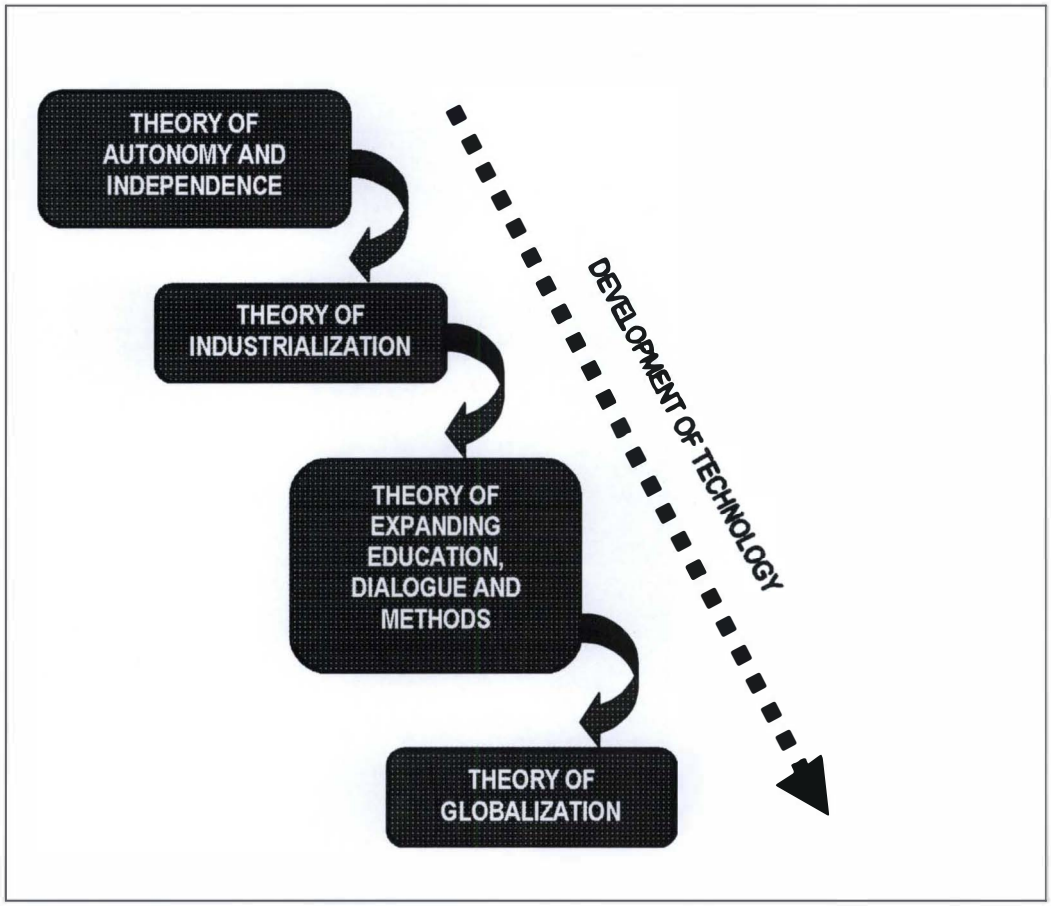

Figure 4: Theories of distance education

3.2.1. Theory of Autonomy and Distance:

Sewart, et. al. (1988) argue that there are various categories of theories on distance education. From the various meta-analyses conducted the researcher found that Moore (1973) was the pioneer of the Theory of Autonomy, Independence and Distance and thus chose to elaborate on this theory.

Moore (1973) argues that the progress in distance education has been severely hampered by the lack of attention to what he termed the " micro-factors". He goes onto list the following micro-factors:

- Description
- Definition

- Discrimination
- Identification
- Building a theoretical framework

Moore (1973) developed his theory of distance education based on two components, namely that of autonomy and distance. He was perhaps one of the first researchers to confidently make a distinction between distance teaching, and distance education within the field of mainstream education. At the time of his writing, many researchers were simply classifying distance education under modes and methods and this was proving to be useless in terms of developing a rational and logical theory of distance education. Within his theoretical structure of distance education, Moore (1973) identifies two clusters of educational offerings that are essential to develop a theory, namely that of:

- Programmes designed for learners in environments apart from their instructors – distance teaching
- Programmes designed for the encouragement of independent/ self directed learning learner autonomy

3.2.1.1. The concept of distance:

Moore (1973) identifies the issue of separation of learner and teacher as being the origin of the concept "distance" in education, and also as being crucial for determining the selection of research data from which theoretical frameworks in this field may be constructed. Central to Moore's concept of distance were the following tenets:

- Distance teaching programmes must be classified according to the distance between the learner and teacher

- Distance teaching programmes must be classified according to the provision of two way communication. He believes that two way communication in distance education can be measured. For example: distance education delivered by radio broadcasts does not involve two way communication at all while those delivered by telephone can be classified as high dialogue – two way communication.
- Programmes could also be measured in terms of their responsiveness to students' needs as individuals.

3.2.1.2. The concept of autonomy :

Moore (1973) argues that autonomy is the second dimension of distance learning. He goes onto to add that most distance education programmes downplay the autonomy of the learner and therefore there is an extremely high drop out rate in most institutions offering distance education courses. Wedemeyer (1983), concurs with Moore (1973) that learner autonomy in the following three aspects must be provided for in any distance education offering, namely that of :

- The setting of objectives
- Methods of study
- Evaluation
- Mode of delivery

The basis of learner autonomy as a necessary theoretical component of distance education is justified by Moore (1973) especially as he makes a strong case for the separation of the teacher and learner in education from a distance. He goes onto to substantiate this by making reference to the point that "distance, separatness, apartness" is not adequate to explain the gap between teacher and learner. He warns all distance education institutions to

recognize the significance of allowing adequate autonomy whereby the learners can study at their own pace, time and level. Moore (1973) also argues that if the learner is able to enjoy autonomy then he/she is able to accept a high degree of responsibility for his/her conduct in the learning programme. He also concludes by stating that the level of autonomy dictates the amount and type of control that the learner have over their learning.

There is no doubt that the theory of distance and autonomy as presented by Moore (1973) has great merit and logic. He uses terms and concepts of distance and autonomy very confidently in a logical and coherent way. He does not mix and jargonise concepts. His argument of why autonomy is important in distance teaching and learning is well noted and accepted. He is absolutely correct in pointing out that the issue of separation between the teacher and learner is not adequate to use as the only principle of a theory that underpins distance education. The issue of autonomy is also paramount in terms of classifying how learners will be able to dictate their own pace, time and locality of learning. The researcher wishes to point out that perhaps this theory was one of the first to show some leaning towards open flexible learning which is now taking educational landscapes around the world by storm. Open flexible learning will be discussed in greater detail towards the latter part of this chapter.

3.2.2. *Theory of Industrialization*

> ***Distance study is a rationalized method – involving the definition of labour of providing knowledge which, as a result of applying the principles of industrial organization as well as the extensive use of technology, thus facilitating the reproduction of objective teaching activity in any numbers, allows a large number of students to participate in university***

study simultaneously, regardless of their place of residence and occupation. **(Peters, 1983:111)**

According to Peters (1983), lectures, seminars and practical sessions have developed from forms of teaching derived from ancient rhetoric and practices at medieval institutions (colleges, schools and universities). He goes onto add that these forms of teaching have changes very little in their basic structure since the beginning of the 19th century. Peters (1983) also asserts that most of these forms of teaching have proved to be completely resistant to the combination of technologically supported facilities and services and thus they can be best described as "pre-industrial forms of study"

On this account, Peters (1983) argues that distance education can only be discussed and analyzed to a very limited extent. Traditional education terms and concepts are wholly inadequate to analyze and postulate theories about distant education as a new form of study. Peters (1983) thus argues that if any attempt is made to introduce a theory of distance education, then the role and significance of industrialization has to be inherent. Peters (1983) reminds us that "Industrialization is the symbol of a new epoch in the development of man and is different in various ways from all other previous epoch". Peters (1983) goes onto argue that all aspects of mankind have tended to adapt and in-coroperate principles of the industrial revolution. According to him, it was only academic teaching that has come largely unscathed by industrialization.

Peters (1983) identified the following principles in the industrialization of distance education:

- Rationalization
- Division of labour
- Mass production
- Mechanization
- Organization

- Planning
- Formalization
- Standardization
- Preparatory work

3.2.2.1. Rationalization:

According to Peters (1983) the term "rationalization " refers to the methodical thinking, i.e. rationally guided measures where a progressively lower input (power, time and money) is used to achieve a higher output.

In distance education, rationalization can be seen from the point of view where pedagogical reasoning and influences in the various decision-making processes are planned and organized methodically. For example, the introduction of lectures to large groups of students and rationalization of staffing where few staff are responsible to carry heavy workloads. Peters (1983) postulates the following characteristics of rationalization inherent in distance education:

- In distance study the teaching process is based on the division of labour and detached from the person or the lecturer. It is therefore independent from a subjectively determined teaching situation, thus eliminating part of the earlier mentioned obstacles to rationalization. The division of labour and objectification of the teaching process allow each work process to be planned in such a way that clearly formulated teaching objectives are achieved in the most effective manner. Specialists may be responsible for a limited area during each of the phase/s.

- The use of technical equipment makes it possible to convey the knowledge, ability and teaching skills of a lecturer to unlimited

number of students. In this way the rationalization effect of mass production becomes apparent.

- With the introduction of new forms of technology such as Video DeskTop Conferencing, Computer aided Broadcasts, Internet, etc, few staff are required. These forms of distance education delivery have reduced staff in many institutions.

- The assessment and evaluation of student feedback can be by self-guided programmes generated by electronic devices such as the computer. Thus psychical staff do not have to be present.

- Courses, modules and programmes can be pre-tested before going to print. This prevents any confusion and misunderstandings on behalf of both students and staff of distance education institutions.

- The division of labour together with strong organizational principles saves both students and staff from putting in any unnecessary efforts thereby reducing time and costs
- The quality of distance education can be continuously improved at any point in time through scientific methods

3.2.2.2. The division of labour:

According to Peters (1983) the division of labour has played an important role in the sociological theories of distance education in the last one hundred years. Adam Smith (cited in Peters, 1983) stated that the division of labour refers to the process where " one complete work process is divided into a number of elementary processes".

In this way training periods become shorter, more people are able to carry out the work and thus wage costs can be lowered.

Peters (1983) therefore argues that the division of labour is one of the main pre-requisites for distance education. The complete work process is split in distance education whereby various aspects such as the teaching activity, course development, assessment and evaluation are spread out into sub units concentrated by various staff. This specialization according to Peters can result in the following:

- Specialists could be hired for short duration's to assemble materials and course content

- Once the staff member has completed his/her specific task then they could be freed and made to concentrate on something else. This allows for staff development and professional growth.

- Division of labour results in a higher quality of instruction where staff become specialists in their field consolidating on relevant and current knowledge, skills and expertise. In this way the planned teaching process becomes more effective and relevant to the student.

- Through the division of labour, other colleagues from within the institution could be brought in to assist in the provision of distance education. Academic middle tier staff may become involved in the correction of exercising and marking of assignments for example. Senior students could also be hired to assist in mentorship and tutoring of junior students.

3.2.2.3. Mechanization:

Mechanization refers to the use of machines in a work process. Machines are used to replace the work done by man. This was one of the most important characteristics of the industrial revolution. In terms of distance education, mechanization is central to the provision of teaching and learning. This can be seen in terms of transport for the speedy delivery of correspondence materials, or the duplication of printed materials, the duplication of audio-visual material, compact discs, etc. When we contrast this form of education to conventional education, Peters (1983) argues that one cannot but think of the pre-industrial level where a craftsman (teacher/lecturer) uses tools such as pictures, charts objects and books without really changing the structure of the teaching process to any considerable degree.

3.2.2.4. Mass production:

The term "mass trend" has been largely perceived as being negative. However, in modern sociology, "mass trend" has rid itself of the negative cultural connotation and has been widely accepted as a valuable one especially within the framework of economics. It is now a neutral concept where more and more individuals and societies have began to adopt it.

In distance education, mass production has been elevated to a new status in terms of delivering teaching and learning to a large number of students at a time. The students taking distance education is seen as a receiver of academic education. Peters (1983) argues that the demand and massification for education has far outstripped the supply. Schools, colleges and universities are unable to cope with the increase in student enrolments. Traditional and conventional education was based on small student groups and numbers. Most of the teaching methods employed by conventional institutions were also based on small groups of students. However, present day educational

institutions have begun to employ methods of mass production on a large scale such as huge lecture halls.

From an economic point of view, distance education is based on the mass production of courses and materials. Because of the large numbers of students enrolling for distance education courses, ways and means have been developed to cope with them. New technologies within the communication spectrum such as Computer based conferencing systems together with satellite broadcasts have made it easy to illicit two way communication and face to face communication with distance education students.

3.2.2.5. Preparatory work:

As distance education institutions have begun to develop a variety of courses, modules and programmes, the comparison with a firm producing a variety of goods comes to mind (Peters, 1983:453). In distance education, the preparatory phase concerns the development of courses involving the various specialists and experts. Each aspect and section has to be carefully, logically and coherently planned. Unlike conventional educational staff who is responsible for the entire teaching and learning process, distance education staff is more flexible in that they have specific tasks, which they can thoroughly prepare, and is always of a high quality. This is another advantage of division of labour as discussed earlier on in this chapter.

3.2.2.6. Planning:

Peters (1983:212) points out that planning refers to "system of decisions which determines an operation prior to it being carried out". He goes onto to argue that similarly in distance education, planning is of vital importance. In distance education, planning involves the breakdown of modules into various units. Study material have to planned and produced well in advance.

In instances where face to face interaction is integrated, careful thought must be given to the times and duration thereof. The face to face interaction or contact must not clash with the units already planned via distance. He also points out that in distance education planning is always pre-determined so that the students knows exactly when the study unit ought be completed.

3.2.2.7. Formalization:

In any industrial organisation, there exist agreed rules (Peters, 1983:107). These rules govern the systematic production and assembly line so that a smooth delivery of goods and services can take place.

In distance education, all points of the cycle have to be formalized such as the academics to be hired in terms of staffing needs, the printing and duplication of course material, student evaluation procedures, assessment criteria, time tables and so forth.

3.2.2.8. Standardization:

According to Peters (1983), the standardization of the manufacturing process is common practice in industries. He adds that industries tend to concentrate on the manufacture of a single product of various types. This results in lower manufacturing costs in terms of labour, type of machines needed, etc. In distance education, standardization refers to the process where all course materials for a study unit will be similar in nature. All students will access the same type of information at the same time. Standardization is important to cater for a diverse student population who will sit for the same examination at the same time. In distance education, course leaders will have to pilot their programmes in advance so that they could produce materials and course designs that are uniform in nature.

3.2.2.9. Objectification:

In industry, there is a very high degree of objectification. This has been achieved by increasing use of machines where the input and involvement of man has been reduced. Man's involvement in the actual production process has been largely eliminated through the use of automation.

According to Peters (1983), there is also a very high degree of objectification in distance education. Largely machines such as computers, videocassettes and audiocassettes, etc have taken over the delivery of instruction. He also points out that, the greatest advantage of the objectification process in distance education, is that, it can be reproduced and made available to any student at any time.

3.2.2.10. An Overview of Peters (1983) Theory of Industrialization

The Theory of Industrialization as proposed by Peters (1983) in terms of distance education is one that appears logical and coherent at face value. It would be foolish to believe in such simplistic and naïve comparisons as that introduced by Peters (1983) in so far as establishing a theoretical framework for distance education. The straightforward comparison of principles employed in the manufacturing and industrial sector does not lend pedagogical credence to distance education, which is based on the transfer of objective and subjective knowledge via various delivery mechanisms. It seems quite clear that it is individuals like Peters, that gave distance education a bad name during the early 20th century. Equating distance education to Industrialization in terms of theory is most fool hardy if one has to consider that education is a far more complex process which involves various facets of social behaviour. Industrialization promotes a rather mechanistic view and as such one cannot equate it to education.

3.2.3. Theory of expansion, dialogue and method: Perraton (1988)

Perraton (1988:127) believes that "...if we are to build a house of theory for distance education, its architecture will depend on existing philosophies of education, and theories of communication and diffusion, it will not be constructed from brand-new components". Indeed if we are in agreement that distance education is a form of educational system, then there is no doubt that its theory will be fuelled by existing theories of education. In this regard Perraton (1988) explains her theory has having three broad principles, namely:

- Expanding education
- Dialogue
- Methods

3.2.3.1.Expanding Education

According to Perraton (1988) the major aim of distance education is to expand educational opportunities to those individuals who are unable to attend conventional face to face educational institutions. Based on the expansion of education, she postulates the following hypotheses:

- You can use any medium to teach anything:
  Perraton (1988) is of the view that there exists no one medium that is superior to another. Chu and Schramm (1983) undertook a meta analysis study of all the research on the role of media and its influence on teaching and learning. They concluded that there are no differences in the effectiveness of teaching and learning when teachers and learners used print, radio, film and television in their lessons.

However, it must be pointed out that with the arrival and introduction of new technologies; many theories relevant to education have changed. In some instances changes have been far-reaching and total. In this regard it would be

prudent to list the example of the communications revolution that has been borne out of the internet technology, where electronic mail delivery is possible within seconds to any corner of the world. Thus communications theory in education will have undergone change so as to cope and look at the various communication strategies to deal with electronic mail delivery systems. Another example would be the changing educational landscape of post apartheid South Africa. Post apartheid education has resulted in a complete renewal of education provisioning in terms of qualifications, curriculum restructuring, for instance Outcomes Based Education and Technology 2005. These initiatives will make inroads into existing theories of educational delivery and provisioning in South Africa.

3.2.3.2. Dialogue:

Perraton (1988) argues that all distance education teaching and learning must consist of a high degree of dialogue. Dialogue according to Perraton (1988) may be on paper, through occasional face to face contact sessions between tutor and students or facilitator and student, or may be organized through group discussions of one kind or another. She goes onto argue that distance teaching can only be effective if it stimulates dialogue. It is therefore imperative that teachers, facilitators and tutors in distance education are able to design and develop distance education material.

3.2.3.3. Methods:

Perraton (1988) argues that it is very difficult to select the most appropriate medium in distance education teaching and learning. She explains that distance education students come from multiple backgrounds in terms of race, gender, ethnic groupings, age, etc. Perraton (1988) believes that there is no easy way of deciding which medium to use, in what way and for what purpose. However, she strongly believes that the use of more than one medium makes learning more fun and effective and in certain instances it

enables information presented in one medium to reinforce that presented in another.

Perraton (1988) is also of the view that a systemic approach is helpful in planning distance teaching and learning systems. She also explains that the tutor, facilitator and students are sometimes isolated from each other, and as such their characteristics are unknown. In this regard, a systemic approach of identifying the various attributes of each entity in the distance education system will prove most valuable. She also emphasizes that each entity in the system must be treated as having equal importance, role and functions therein. In conclusion, Perraton (1988) adds that to be effective, distance education systems must develop materials that will ensure that students undertake regular and frequent activities over and above reading, watching and listening. Feedback and evaluation are also vital components of the system.

3.2.4. Theory of Globalization

3.2.4.1. Introduction

Numerous observations indicate that a global revolution is sweeping the educational landscape of the world. This is being driven by the changing nature of work, the arrival of the information age, new global partnerships and an awareness of the need for an equal distribution of educational opportunities and the emergence of a knowledge era . In this regard, it is possible to identify the following trends as characteristic of this global transformation:

- The emergence of a new open and yet not fully defined teaching/learning paradigm
- The blurring of the distinction between face to face and distance learning to the emergence of the concept of flexible learning systems and

- The innovative application of information communication technology (ICT) to the delivery of education

Indeed, educational landscapes of the world will have to rethink their rigid education and training systems to make way for completely new ones underpinned by open and flexible teaching and learning systems. This movement towards an open learning environment must be able to embrace:

- Learner-centred teaching and learning
- Life long learning
- Flexibility in teaching and learning
- Removal all barriers to access
- Recognition of prior learning experiences and current competencies
- Learner support expectations of success
- Cost effectiveness and
- Quality

Acknowledging the translation of the above principles into practice is by no means a simple procedure or easy feat and it therefore becomes imperative to reflect and build a theory for open distance education (ODE). It also is of paramount importance to interrogate the implications of our contemporary context for the future of open distance learning (ODL) provision.

Firstly, to emphasize that distance education is simply not a synonym for open flexible learning and secondly that distance education is not possible without technology. Distance education (DE) and open distance learning (ODL), by definition, means that time and space separate the processes of teaching and learning. This time-space separation in DE and ODL means that the processes of teaching and learning are technologically mediated.

The concept "technology", apart from the traditional associations with "machines" and "tools", signifies the presence of a knowledge base in its practical application. The uniqueness of distance education also requires a set of specialised knowledge in its design, development and delivery of learning opportunities.

Peter Drucker, the icon of strategic management, has argued that "30 years from now, big university campuses will be relics" (Drucker and Holden, 1997:45). Distance education institutions, utilising the advantages of mass-standardisation, have developed into large organisations that capitalise on the benefits of economies-of-scale. If Drucker's predictions hold true, ODL universities risk extinction by virtue of their size and the challenges of the emerging knowledge society.

This warning is particularly relevant for distance education institutions in Africa like the University of South Africa (UNISA), because it has developed into one of the mega-universities of the world (Daniel, 1996). The concept "mega-university" is used as an arbitrary classification for universities which have more than 100 000 students.

Does Drucker's prediction simply warn against "big university campuses"? I think not. Drucker's warning is rooted in the understanding that the world has entered a new era that is significantly different from the one which preceded it.

Drucker (1995:75-76) explains that, "every few hundred years throughout Western history, a sharp transformation has occurred. In a matter of decades, society altogether rearranges itself - its worldview, its basic values, its social and political structures, its arts, its key institutions. ...And the people born into that world cannot even imagine the world in which their grandparents lived

and into which their own parents were born. Our age is such a period of transformation. In this [new] society, knowledge is the primary resource for individuals and for the economy overall. Land, labor, and capital -- the economist's traditional factors of production -- do not disappear, but they become secondary".

Although the changes are revolutionary, open distance learning is best positioned to tackle the challenges of this tidal wave when compared to traditional forms of tertiary educational provision. Within this framework, the researcher wishes to argue that any theory around the development and promotion of alternate systems of education must be based on the following foundational components, namely that of:

- globalization;
- the knowledge society;
- student support and
- technology

Each of the components listed above will be discussed in greater detail in this chapter. Globalisation related questions concerning the future of higher education in a knowledge driven economy is a large and complex topic. Even so, these issues are pivotal to understanding the anticipated changes in tertiary education.

3.2.4.2. The interplay between Globalisation and alternate systems of education.

What is globalization? Globalization is a very elusive concept to define. To date there is no universal definition of it. According to Mackintosh (1999), the concept "globalization" refers to our progression towards a true global society. It is rooted in the expansion of global communication systems. He goes on to add that instantaneous communication across the world is no longer a fantasy, but is a significant part of our daily lives.

The researcher wishes to argue that globalization is a far more complex process than simply understanding it to be a linking or networking of the world through communications technology. Evans (1995:258) substantiates this view by pointing out that "globalization is not simply that the world has got smaller but rather that time and space relations have been radically altered to such an extent that it fundamentally affects the way people now view, understand and engage the world in which they live".

In most developing countries of the world, there appears to be a glut for higher education, which is, termed "mass higher education or massification of higher education". Jarboe (1997) indicates that the emergence of mass higher education is not only taking place in developing countries but is also a common feature of educational horizons of developed countries. She goes onto to argue that although most governments accept responsibility for the financing of primary and secondary education, they tend to restrict and be very selective in their funding of higher education. Governments often treat higher education as just another industry.

Globalization is thus rooted in the expansion of communication systems such as the Internet, World Wide Web, Digital Video DeskTop Conferencing, Electronic Mail delivery, Satellite communication and broadcasts. The fundamental aspects of this new communications revolution are the cost factor. Woodall (1977) argues that the cost of computer processing has dropped an average of 30% per annum over the last ten years. He goes onto add that the cost of computer power costs only 0.001% of what it did in the 1970s. Gates (1998) stated that the cost of computing has decreased 10 million folds since 1976.

Within this context it must be pointed out that the cost of utilizing technology is on the decrease as more and more societies begin to engage and

employ them. This decline in costs has also been evident in the telecommunications industry. A fibre optic cable can now carry 1.5 million conversations simultaneously. Cairncross (1997) predicts that the marginal costs of telecommunications will tend to move towards zero, so that the removal of distance is made possible by the proliferation of various telecommunications, which is being improved on a daily basis. For example, the plot to oust Mr Thabo Mbeki (the president of South Africa), which previously would only have been heard in the corridors of the parliament, was common knowledge around the world.

Apart from the fact that globalisation changes our lives, Giddens (1990) points out the reciprocal potential of globalisation. He describes the concept as: "the intensification of worldwide social relations which link distant localities in such a way that local happenings are shaped by the events occurring many miles away and vice versa" (Giddeons, 1990:64). Therefore globalisation is not only something which happens to you, but it is also something which you can participate in.

Today, internationalisation is an imperative for success, and holds many advantages for those participating in the global economy and knowledge society. Many developing countries will no doubt benefit from this global interaction by using the very technologies of globalisation to "leapfrog" a generation of communications technology (Knight:1996). However, "those who do not have some mechanisms to monitor and understand the internationalization of knowledge are likely to be left out of important spheres of discovery, and they may find themselves less competitive in ways that have major economic and political consequences" (Green & Hayward, 1997:17). Therefore, this widens the gap between those who have and those who don't.

One of the characteristic features of this new era concerns the significance of the risks of transformation. Previously, risks associated with new interventions were regarded as peripheral when compared to the change process itself. In this new era, the risks associated with current change developments have grown to proportions so great that they can no longer be disregarded. Today, the risks of change are of similar magnitude to the change development itself. Globalisation is not merely a contextual risk but a foundational component of societal evolution itself.

It was suggested in the introduction of this section that Higher Education (HE) is facing a "revolution". Accordingly, sceptics will dispute the revolutionary nature of globalisation. They will argue that the world is not essentially different from that which existed before. They see the global communication technology developments as an evolutionary extension of a modern industrialised world. However, the researcher does not support the view of the sceptics, but rather, he shares the opinion expressed by the Director of the London School of Economics, namely, Anthony Giddens. Giddens (1990) argues that he would have no hesitation, in saying that globalisation, as we are experiencing it, is in many respects not only new, but revolutionary.

Tertiary education leaders and higher education policy makers around the world should critically examine the strategic position they plan to take with reference to the time-space compression of globalisation. Massingue answers this challenge from an African perspective when he says: "You cannot be part of the global village by just sitting and waiting to be 'globalized' ... We want to be the globalizers" (cited in Useem 1999:52).

3.2.4.3. The knowledge society and its influence on alternate systems of education

There are two important sides to the knowledge society coin. The concept "knowledge society" relates firstly to a fundamental condition, namely the role of knowledge in a post-industrial society and secondly, to shifting conceptions of what knowledge is (Gibbons 1998; Scott 1997). The most significant characteristic of the knowledge society is the pivotal role that knowledge will increasingly play in the global economy. Knowledge is replacing the central role that the economic factors of production played during the previous era, namely the industrialisation of society.

There is ample empirical evidence to justify the existence of a growing global knowledge economy, particularly from the perspective of the newer economic growth theories (Conceicao & Heitor, 1999). A good practical example is the expansion of the services industry in comparison to industrialisation, or the proportional representation of the knowledge worker as a percentage of the workforce as compared to the blue-collar or industrial worker. At the peak of industrialisation in America during the early 1950s, the industrial worker constituted between 30 and 35 percent of the workforce but in the 1990s this has reduced to between 15 and 18 percent (Drucker, 1995:231)

One could argue that this workforce has been replaced by importing manufactured goods into the United States (US) from countries with low wage costs, but Drucker (1995:237) proves this is not the case. Only an insignificant percentage of manufactured goods are imported into the US, which amounts to only about one percent of gross domestic product.

Scott (1997:6) lists the following five attributes of the emerging knowledge society:

- acceleration: which refers to the exponential growth and rapidly changing nature of everything;

- time-space compression concerning the intensification of time over space; risks which are growing in proportion to the new knowledge to such an extent that they can no longer be regarded as side effects;

- complexity, non-linearity and circularity which characterise the nature of the new knowledge;

- reflexivity which takes many forms, for example, where subjects and objects of research become mixed-up or for example, where traditional distinctions of class, gender and sexual orientation fall away and individuals have greater freedom, thus promoting the relative importance of the individual in society.

Traditionally, the societal function of producing knowledge has been regarded as the institutional responsibility of the university. As we approach the new millennium, universities will no longer retain the societal role of being the primary creators or producers of "scientific" knowledge.

Universities will no longer hold a monopoly on knowledge creation, as was traditionally the case with reference to their research function. Industry now plays a far more active role in generating new knowledge for solving the problems that they face. These new knowledge producers, coupled with the effects of globalisation, are making considerable contributions to expanding

the knowledge base of the world. This is the knowledge base that must now be re-configured for teaching purposes.

In addition to the changing roles of the university concerning knowledge production, the nature of knowledge itself is changing. Mode 1 and Mode 2 are terms used to describe two distinctive conceptualisations of knowledge (Gibbons, 1998).

Each mode is differentiated by:

- the respective epistemological foundations of what constitutes knowledge;
- the respective purposes for knowledge creation;
- the characteristic methodologies associated with the processes of knowledge production;
- organisational responsibilities of knowledge creation within broader society; and
- the way in which knowledge is evaluated.

The characteristics of the two modes of knowledge production are briefly introduced in the following paragraphs.

As mentioned above, the creation of "scientific" (Mode 1) knowledge has traditionally been the responsibility of the university. Under Mode 1 knowledge production, universities have prescribed the "scientific" processes and methods for discovering knowledge and as such also set out the criteria for what constitutes knowledge, itself. Mode 1 knowledge is typically disciplinary, and corresponding academic structures reflect this in their hierarchical organisational structures.

Under Mode 2 knowledge production, the responsibilities of knowledge production are distributed among a variety of knowledge producers in society. Mode 2 knowledge production is trans-disciplinary and produced in the context of application. Organisational structures of Mode 2 knowledge producers tend to be organic and have considerably flatter hierarchies. Levels of social accountability are notably higher than in Mode 1 forms, and Mode 2 forms have a far wider spectrum of participants in quality assurance processes.

In addition to these points, we find ourselves living and operating in an unprecedented state of rapid change with reference to knowledge and technology. This is a huge challenge for Distance Education (DE) because the format and content of learning resources are difficult to change in the short run.

If universities aim to remain relevant, they will have to change their primary focus from knowledge production and teaching to a focus on knowledge re-configuration and teaching (Gibbons 1998). This shift to knowledge re-configuration is particularly important for DE institutions that must "package" and distribute their knowledge and teaching through DE learning resources for mass education.

One may wonder what this discussion on the knowledge society has to do with DE as an alternate system of education. Well, the changes associated with the emerging knowledge society are closely related to how society has dealt with questions of mass production in industry. New ways of dealing with the problems of mass production in industry are appearing with the emerging knowledge society. Consequently, the provision of DE and student support, which is a mass "production" problem, will also be affected. Globally, with the knowledge society emerging over the last few decades, universities have been faced with the growing challenges of mass education provision.

Access to higher education is no longer limited to the elite of society. Collectively these new challenges are embodied in the requirements of post-industrial DE delivery (Campion, 1996; Farnes, 1993; Jarvis, 1996; Peters, 1996; Raggatt,1993 and Rumble, 1995).

In response to these challenges, Peters (1983) argues that DE as an alternate system of education, has become education's best example of dealing with the mass "production" of educational opportunities. It has achieved significantly higher participation rates per cost unit when compared with its residential teaching counterpart by industrialising the processes of teaching and learning.

Considering these examples, DE has progressed considerably further than traditional residential universities with the inevitable industrialisation of education. Within the contexts of the evolution of higher education, we can argue that DE is the most modern form of educational provision. Peters (1983), based on his sociological analysis of DE resolves the same thing when he states that "There is no other form of teaching and learning which breaks away from tradition so sharply, which is so conducive to structural changes, which has the potential for developing entirely new instructional configurations and which promises to tackle the problems of mass education in the coming information society with adequate means. All of this indicates clearly that the concept of distance education is, indeed, a revolutionary one" (Peters 1992:33).

The emerging knowledge society is posing a new challenge for DE that is fundamentally different from the previous challenges of industrialisation. Collectively these new challenges are embodied in the requirements of post-industrial DE delivery (Campion 1996; Farnes 1993; Jarvis 1996; Peters 1996; Raggatt 1993 and Rumble 1995).

In the past, DE tackled the problems of mass education provision by using an economy of scale approach. As we move deeper into the knowledge society, the magnitude of the mass education phenomenon will increase and, as such, the problem is still one of mass provision. However, the way in which the mass DE provision problems are tackled in a post-industrial society will be very different from the ways these problems were dealt with in the previous industrial era. Chattel (1995: 57), speaking from a business perspective, points this out when he states that the "new paradigm achieves its scale not through monotony, but through continuous variation". Alvin Toffler (cited in Chattel, 1995) coined the term 'mass customization' to describe what he saw as the essence of the new paradigm of production - its capacity to meet the individual needs of masses of individuals at similar economics to those of mass production."

Let us consider the implications of these changes for present DE delivery:

- A shift in emphasis from product-centred to client-centred design will occur. DE learning resources will be customised according to specific needs of the learners.
- The requirements of creative design for innovative customised solutions will necessitate teams of trans-disciplinary knowledge workers. Hierarchical discipline-based organisational structures will become redundant. These kinds of structures are not sufficiently responsive to the demands of the new design environment.
- The processes of DE design, development and delivery will now be based on a design model as opposed to a production model. The previous mass production paradigm entailed the production of uniform parts for a uniform product, whereas customisation for mass provision focuses on the assembly of uniform parts into a unique, individual product (Chattel 1995:57).

Indeed one should not underestimate the revolutionary nature of these changes. Barnett (1997) reiterates these sentiments when he argues that "the available ways of construing higher education are utterly inadequate to the modern age. The university as an institution has derived its legitimacy from a project built around knowledge, around knowing the world. But the modern world is unknowable - not only epistemologically, socially and culturally, but in terms of our personal identities. ...We need, therefore, to do nothing short of jettisoning the whole way we have construed higher education for one thousand years and, instead, work out a new conception of education which starts from the understanding that the world is unknowable in any serious sense" (Barnett, 1997:32).

3.2.4.5.1. Student support in alternate systems of education

Arguably, the challenge of providing sustainable student support is one of the most significant pedagogical challenges facing alternate systems of distance education delivery. The alienation of the teaching-learning processes (because of the time-space separation in DE) amplifies the need for student support. Student support refers to those elements in the DE delivery system that support individual learners, whether studying alone or in groups. Examples of student support include tutoring which can be face-to-face, telephonic, electronic or by correspondence; student counselling; a network of study centres; and other forms of interactive learning opportunities, for example video-conferencing.

For the purposes of this research, student support is differentiated from the teaching elements contained in the mass-produced learning resources that are typical in DE. These mass-produced resources are identical for each learner, whereas student support elements are individualised according to the specific needs of the individual learner. Therefore, elements contained for example in a study guide which provide for differentiated teaching support in the text are

not classified as student support here. In the same way, the variety of learning design alternatives that are embedded in the mass-produced learning resources (for example in-text activities) are regarded as the outcome of good teaching design and not examples of student support.

Student support requires appropriate structures and delivery systems at the infrastructural level and corresponding policies and practices to ensure that student support is integrated with the teaching. The main category of student support at most DE institutions in South Africa is provided by means of a centralised independent study model. This support refers to the individualised feedback that is provided by lecturers on the assignments submitted by students. This feedback takes the form of individualised written or sometimes audio comments by the lecturer marking the assignment.

The huge numbers of enrolments and correspondingly high lecturer-student ratios on many courses place limitations on the extent of individualised commentary – and therefore student support - through the assignment system. Growing numbers of these courses are relying on automated assessment and self-assessment strategies to deal with the growing student numbers. Although individualisation is possible and necessary with these forms of assessment, they generally limit the possibilities for individualised teaching. Within this framework and paradigm shift, distance education institutions are moving away from the traditional industrial model of design, development and delivery of learning packages towards a model more concerned with the way students interact and come to understand the idea studied.

This new approach is based on an altered concept of the learner, who is seen to engage the ideas in a field of study and make sense of this knowledge in a personally meaningful way. According to Lockwood (1995), the following principles highlight this new approach to learner support:

- Instructional design increasingly includes interaction as a defining characteristic of distance learning and not as a supplemental attribute of the system.

- The roles of advisor and tutor need to merge. The primary responsibility of the resulting academic counsellor is to pursue a learner-centred approach to instruction.

- Co-operative goal structures can facilitate the development of effective learning strategies. Collaboration is possible in both mediated and face-to-face settings but its successful conduct requires that significant changes be made to current instructional design and implementation practices. The roles and responsibilities of both student and academic counsellor must reflect these changes.

In addition to the above principles, Robinson (cited in Farnes , 1993) found that:

- Learner-institution contact, such as regular contact with support staff, appears to have a positive effect on learner performance and persistence rates;

- Factors which correlate positively with course completion rates include the use of course assignments, early submission of the first one, short turn-round times for giving learners feedback, pacing of progress, supplementary audio-tapes or telephone tutorials, favourable working conditions in the learner's context, the quality of learning materials and reminders from tutors to complete work;

- Multiple interacting factors (personal, environmental and course variables) are at work in determining learner success; some institutional interventions can assist if appropriately targeted;

- Learners value contact with support staff and other learners, though do not always use the services provided; learners most often report a preference for face-to-face tutoring compared to other media, though where face-to-face meetings are not possible, other forms of contact are rated as acceptable or valuable;

- What happens in the early stages of recruitment and enrolment affects later success or failure;

- Personal circumstances and lack of time are the most common reasons given for withdrawal from study."

At this stage, it would be pertinent to reflect upon the requirements outlined by Kember (1995) for an effective model for learner progress and support:

- Ownership by learners of the tutored study group
- Use of course materials which actively discourage rote learning
- Ongoing assessment strategy which encourages an integration between theory and practice
- Support for learners by enthusiastic and committed part-time tutors
- Support for tutors by a committed full-time coordinator
- Effective administrative support.

In conclusion it needs to be highlighted that the activity of distance teaching can be classified into four main functions. Within the context of DE learning resources, there are areas of potential overlap between these teaching functions:

- to make the content of learning available in a way that facilitates the attainment of the curriculum outcomes;
- to plan and facilitate different forms of interaction;
- to plan and execute alternatives for learner assessment;
- to plan and provide support for the learners.

Improving student support will require an extensive network of learning centres throughout the geographical area it serves. To be successful, student support must be accessible and therefore geographically located in the communities where students live and work. Instituting such a network will require significant changes in the infrastructure of the distance education institution and its delivery model. The processes associated with design, development and delivery will also need to be re-engineered. Organisation redesign is imperative and this is why I have argued that improving student support will necessitate systemic transformation. Without systemic transformation, the impact of student support will remain peripheral.

For the purposes of this debate, let us assume that an extended network of learner centres can be established, thus hypothetically removing the financial and transformational barriers. Bearing this assumption in mind, the efficacy of a tutorial programme in this delivery system will be determined by the extent that tutoring is designed as an integral part of the teaching in the mass-produced learning resources. The point that needs to be made is that you cannot design for the integration of student support unless you have a definitive system of student support. Within this context, it must be argued that the challenges of improved pedagogy and improved support will require

systemic organisational changes, and its success will be co-determined by the interplay between organisational design and course design.

3.2.4.6. Technology and alternate systems of education

Most educational technologists do link distance education to technology (Garrison, 1987) and may view it as different from other forms of education. Claims about the affect of new technologies on learning have caused many people to suggest a change in the way new technologies are evaluated for distance learning (Clark, 1989). Although Salomon (1981) and Clark (1991) make the point that instructional strategies and not the medium are the key to effective learning, technology and production considerations rather than teaching-learning theory or the instructional development process are often the driving force behind distance education programmes.

The interest in utilizing "instructional technologies" to accomplish a variety of educational delivery needs has grown to the point where "preparing teachers to use technologies is assumed to be the main function and primary intellectual interest of the educational technologist" (Heinich, 1982). While Heinich (1982) feels that teacher preparation is needed, he points to this as a problem in defining the field of educational technology. Romiszowski (1981) suggests that the educational field "has been plagued with more than its fair share of solutions looking for problems" and suggests that developers often reflect a vested interest in technology or make premature decisions to the instructional solution before fully understanding the problem.

Studies on the use of various media in distance education have supported Schramm's (1977: 273) view that "learning seems to be affected more by what is delivered than by the delivery medium" and Clark's analogy of media "not influencing learning any more than the truck that delivers groceries influences

the nutrition of a community" (1983:3). Also, studies comparing education in the classroom with technologically-delivered classes (Beare, 1989; McCleary and Egan, 1986) showed no significant differences in academic performance.

Recent developments in technology are believed to be removing some of the disadvantages associated with media in distance education. Bates (1984:23) suggests that new technologies promise "a wider range of teaching functions and a higher quality of learning, lower costs, greater student control, more interaction and feedback for students". In fact, the 1990s are experiencing the emergence of digital media which has the potential to blur the lines which separate various media, as predicted by Baltzer (1985).

The issue of media verses method is likely to continue to be debated in relation to distance education, but there is no doubt that distance education is different from other instructional approaches. A study by Gehlauf, Shatz and Frye (1991) on the reaction of teachers to the teaching experience in the traditional classroom compared to interactive television, shows teachers wanting to cling to more traditional approaches. They concluded that teachers found these methods ineffective and thus relied on traditional methods and strategies.

In concluding this sub-section, the researcher wishes to point out the two main arguments concerning sustainable ODL using information technology as proposed by Campion (1996). First, Campion (1996) argues that advancing information technology will facilitate cost-effective mass customisation of ODL. Second, in developing countries advancing information technologies will, for example, enable Africa to "leapfrog" previous eras of technology alternatives.

There is justified concern that customised delivery systems will operate at significantly higher costs because the scale is reduced. Mass customisation

still remains a mass delivery problem and must be sustainable in the sense of maintaining comparable economies. The difference between the two approaches lies in how the economies are achieved, that is, scale versus scope.

There is a clear risk of higher costs with customised ODL delivery systems in organisations that attempt to individualise their teaching with existing industrial structures. Economies of scope operate in a paradigm that is different from the paradigm of standardised mass production. This is why systemic transformation is necessary.

Furthermore, the advances in information communication technologies offer opportunities for economies of scope that were previously unattainable.

As discussed earlier, tertiary distance education institutions must shift its focus from production to assembly. Using a design-driven approach, it is possible to create digitised knowledge domains that are independent of the medium of delivery. A digitised knowledge domain becomes the knowledge store for multiple delivery alternatives and systems. For example, should a student require certain components of the digitised knowledge domain to be delivered by means of a printed study guide, an intelligent mark-up algorithm can generate an individualised print version of the learning resource. The algorithm customises the printed learning resource, taking the layout and design requirements of the medium into account.

Because the knowledge domain is digitised, multiple delivery alternatives of similar knowledge domains become possible. Also, taking recent developments in the field of virtual reality into account, significant progress is possible with challenges and opportunities of accelerated learning.

The second argument for utilising information technology for sustainability is based on the notion of "leapfrogging" previous technologies. For example, South Africa did not go through the era of cable television. It jumped from analogue broadcasting to digital satellite broadcasting. In the same way, ODL in Africa, has the opportunity to "leapfrog" the era of face-to-face decentralised tutorial support.

A sophisticated network of student support can be achieved through the utilisation of information communication technologies and digitised student-support knowledge domains. Accessibility and connectivity for impoverished and remote students in South Africa, until recently, has been the most significant barrier towards the application of information technologies in ODL. To some extent, technological constraints, such as bandwidth have also limited the range of potential application.

Plans for the launching of low orbiting satellites in the near future will resolve the problems of bandwidth, connectivity and accessibility for remote users quickly and cost-effectively. This kind of technology makes it possible to set up a comprehensive network of digital learning centres throughout the world.

3.2.4.7. Staffing in alternate systems of education

The likelihood of significant increases in distance learning enrolments within the next decade will have a profound impact on staff members' instructional roles, according to Beaudoin (1990). The changes that he envisions are tied to distance education's more learner-centered system, and he predicts that teachers accustomed to more conventional teaching modes will have to "acquire new skills to assume expanded roles not only to teach distance learners, but also to organize instructional resources suitable in content and format for independent study" (Beaudoin,1990:21).

A key player in the distance education team should be the teacher since the use of telecommunications in higher education requires staff acceptance (Dillon: 1989). But "negative staff attitudes, ranging from apathy to open antagonism, remain a major barrier" to implementation of distance education programs (Brock, 1987:40). A growing acceptance among university staff is acknowledged by Brock (1987) and he blames staff attitude on a resistance to required changes in familiar teaching patterns and the faculty having to relinquish a degree of control over the teaching-learning process.

A survey of Oklahoma administration, staff and tele-course coordinators led Dillon (1989) to suggest expanded rewards and more faculty development efforts, and to express the belief that the success of distance education will "require changes in the practices and attitudes of faculty in an environment that is still suspicious of or threatened by the non-traditional. Only the system which effectively rewards it will succeed at change" (Dillon, 1989:42). A survey of teachers using satellite delivery methods showed a significant growth in credit course delivery since 1984, but it also identified several problem areas. According to Albright (1988), needs assessment were rarely conducted prior to course development, interactivity was minimal due to the practice of uplinking videotaped lectures, the visual components of most courses were underutilized, faculty training was limited to technical considerations, and faculty efforts were largely unrecognized for promotion and tenure. A study by Clark (1993) has also attempted to measure staff attitudes toward distance education and specific media used in distance education.

Among Clark's finding were:

- that university staff who were slightly positive about the concept of distance education were more negative about their personal use of distance education

- staff who were more familiar with distance education were more receptive, and
- faculty was more positive toward tele-courses and video conferencing, and less positive toward correspondence and audio conferencing.

Respondents expressed the normal concerns about course quality, student-teacher interaction, and faculty rewards for teaching distance education courses. Clark suggests that, with staff still being ambivalent about distance education, a cautious optimism regarding the future of distance education as an alternate system is appropriate and thus he urges that a team approach to the development of learning materials be considered as the most appropriate for distance education. The team would be responsible for assessing adult needs, designing learning packages, providing guidance, and assessing performance, and it would include academic content specialists, instructional designers, writers and editors, media specialists, and specialists in adult learner behavior and curriculum development (Verduin & Clark, 1991). These instructional development activities should support the institution's philosophy and goals, and the mission of the distance education program.

If anything is evident in this team approach, it has the potential to be complex and open to interpretation. The roles of academic content specialists, instructional designers, writers and editors, media specialists, and specialists in adult learner behavior and curriculum development can be seen to overlap and not to be very clearly defined. An educational technologist may have skills in instructional design, as a media specialist, in adult learning behavior and in curriculum development, and their job may begin with assessing programme needs and end with product implementation. But their role may be perceived as someone working primarily to implement electronic technology into the learning system or simply be misunderstood.

The counter problem is that "use of computers, television, teleconferencing, and other means of transmission does not make one an educational technologist" (Wagner, 1990: 62).

The relationship between distance education and educational technology is viewed as strong, but the problem of defining roles for instructional designers/ developers is difficult. And the role of the educational technologist may be defined, not by the field, but by the organization's philosophy of education and their broader educational goals. Wagner (1990) suggests that an issue to consider is whether "distance education can afford to emphasize technology" or whether "it must emphasize instruction" (Wagner, 1990:62). Wagner suggests that educational technology can serve as a holistic approach where process and product are both components of the system.

3.3. CONCLUSION

Any theory around the issue of alternate systems of education must include components and principles of globalisation. Globalisation has been the direct result of the proliferation of information and communications technology. Information technology improves learning and teaching in two distinct ways. Just as they have made workers more productive in business and commerce, they could reduce teaching costs and increase the speed with which learners acquire knowledge. Alternately, information technologies could assist in improving the quality of learning, rather than simply making it faster and cheaper.

As resources for higher education continue to dwindle, these institutions need to think about how they " could do more with less". In this regard, alternate systems of education viz. distance and virtual will have to be pursued vigorously to cope with massification within the higher education landscape.

There is a new type of worker that is being demanded by industry. The new worker the researcher refers to, is none other than the " knowledge worker". Higher education institutions will have to begin to reorganize the way they teach, the type of staff that they need and also the type of technologies that are being made available by the information and communications revolution that is sweeping the world stage at the moment.

Levine (1980:14) argues very logically that the separation between innovation and organization can "converge" as the innovation moves toward institutionalization through boundary expansion and resolution of conflicts. It is this integration process which is the goal of most distance education programs at traditional universities, but studies suggest that there are often institutional barriers to the convergence of distance and mainstream education. To focus on technologies without considering their role as a catalyst for change can adversely affect the ability of technologies to enact change (Heinich, 1982). Heinich suggests that we tend to treat all technological innovations almost the same, yet technologies such as television can affect the power structure in education, and staff prefer the power structure the way it is.

Power and politics are primary forces in the implementation process; and educational systems, like other social systems, have to be viewed in terms of the seeking, allocation and use of power (Meyer & Rowan, 1978). According to Sarason (1990), the communication network, which is dependent on personal contact and on who knows whom, often identifies the path for implementation of an innovation.

Innovators have been accused of being so passionate about their innovation that their reality is distorted and they fail to consider the importance of building constituencies to help support their cause. Sarason (1990) and Rogers (1983) go to the extent of identifying a "pro-innovation bias" which often

appears in the implementation of an innovation and any related research which follows. Educational innovations seem to receive strong support from a relatively small segment of adopters but may have limited support from the group effected. Bardach (1978:42) suggests that even when an effort is made to develop support from constituents, it is difficult to find a cause with "a broad commonality of interest that would form the basis for coalition building".

Educational change is technically simple but socially complex, and definitely not a linear process. Educational innovations such as the early distance education programs were probably motivated by a "vision" that Fullan (1991:81-82) would suggest "permeates the organization with values, purpose, and integrity for both the what and how of improvement - its formation, implementation, shaping and reshaping in specific organizations is a constant process" For a vision to become a reality, Miles (1987:12) stresses that it must be "shareable and be shared with others; it provides direction and driving power for change, and the criteria for steering and choosing". And this vision must include a shared vision of the change process which can provide a strategy for implementation.

Although there are clear strategies for implementing innovations, change is often at the mercy of organizational culture. "Attempts at innovation in higher education have usually ignored the cultural and structural traditions of the socio-cultural system ... If an institution has a culture in place, and there is ample evidence to suggest it does, those involved in the rigorous maintaining of the status quo are not going to be eager candidates for innovation" (Schrum, 1991: 37).

A case study of Athabasca University in Alberta, Canada by Shale (1985) showed some surprising results. Although the university was an "open"

distance education facility and with a commitment to trying innovative educational approaches, over time it had become more and more traditional. In the beginning, the core of the academic program was the instructional designer with few academic staff, and multi-media was used heavily. But this emphasis on innovation changed and now the role of the instructional designer is not as important as that of the teacher, courses follow a more traditional lecture approach, and little use is made of media except to enhanced written materials.

Shale (1985:11) suggests that understanding this shift back to the traditional lies "in a deeper understanding of what a university is" and whether a traditional university allows for change and innovation. The educational technology point of view appears to regard education as "packageable" while universities are traditionally characterized by process, academic staff, and research. Costs and the time required to produce distance education courses are two factors suggested for this tendency to the traditional, but Shale also feels distance education has not dealt with some of the natural boundaries such as jurisdiction and coordination, factors which impact on the institutionalization of distance education programmes.

Much of the research done to date has centered around the use of new technologies for teaching and distance education's effectiveness as a teaching medium. A predominance of this research has used survey questionnaires with closed-ended questions and with the range of options determined by the researcher (Morgan:1984). This empirical research is useful for studying drop-out rates, learning about student preferences, and attempting to compare the variety of media used for delivery, but Morgan (1984) has urged that qualitative research methods be used to study distance education as a whole. Coldeway (1988) acknowledges that the focus of most distance education institutions is on the technology but suggests that the research is shifting to

"the more human side" of the system as the programmes age. Holmberg (1984), an international authority on distance education, strongly urges scholars to undertake inductive studies of distance education "organization" so to look at the administrative framework, processes of developing and distributing learning materials, interaction between system members, and other activities required by society and the educational establishment. This type of study has not been done and seems to have value for establishing new distance education programmes or making comparisons with other traditional and nontraditional programmes.

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CHAPTER FOUR:

RESEARCH METHODOLOGY

Research is best conceived as the process of arriving at dependable solutions to problems through the planned and systematic collection, analysis and interpretation of data. It is the most important tool for advancing knowledge, for promoting progress, and for enabling man to relate to his environment, to accomplish his purposes, and to resolve his conflicts.

(Mouly, 1979: 55)

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4.1. INTRODUCTION

Governments, Ministries of Education, Departments of Education and educational managers and authorities are constantly making decisions that have immediate and long term effects within the educational landscape. These changes, in most instances, are being forced by external processes and events such as globalization and the new world order which is being ushered in by economic, political and social competition of the world stage. Educational landscapes are being constantly bombarded by new technologies which demands new strategies and methods of enhancing the quality of teaching and learning. The higher educational landscape is also going through tremendous pressure to redesign and reshape their ethos of providing quality education to tertiary students who have to enter the knowledge era. The big question is, where do the educational authorities, managers and governments get their information to take various decisions in bringing about this transformation and change.

Schumacher (1984) argues that the information for making educational decisions come from various sources. Amongst others, they argue that very often we tend to rely heavily on our personal experiences, expert opinion, tradition, intuition, common sense and beliefs about what is right or wrong. The researcher argues that the above sources of information to bring about educational change in itself are not enough and are often inadequate. Past experiences of others or personal experiences of some countries may be inappropriate for new problems for particular countries. Experts or authorities may be distant from the realities and complexities of a particular educational problem being faced by particular educational landscapes of the world. In essence, educational problems and complexities may not necessarily be generic whereby common solutions can be found by common experts in the field.

One of the most significant sources of information that can be used to effect and bring about educational transformation and change is: research. According to Sweet (1993), research as a rich source of information has been largely recognised as the most effective source of information where decisions about educational change can be made. Because research systematically describes or measures reality in an objective way, it is a better source of knowledge than ones own experience, beliefs, or intuition alone.

Why has research become a valuable source of information and knowledge in education? Thorpe (1994) argues that educational research advances knowledge and improves theory and practice through a scientific process. Research is thus valuable in that it engages in scientific enquiry which implies an attitude towards solving educational problems and complexities. It is a willingness to question, search out the explanations for results, and examine methodology (Webb, 1991: 32). As an attitude, *scientific* means a willingness to accept new knowledge after critical examination and to modify one's own beliefs and ideas in the light of this new knowledge. In short it is a way of looking at the world and interpreting events.

Another significant aspect of educational research, is that, "reviews of research results written after much work has been done on educational issues and topics, have identified some notable findings that have definite policy and practical implications" (Peters,1998:123). Indeed, reliable sources of information have increasingly become a necessity in a complex and technical society. Research more often than not provides valuable information and knowledge about education in order to make informed and wise decisions.

4.2. RESEARCH ORIENTATION

This is a survey research based on an empirical study of distance education as an alternate system of education in South Africa. The research is based on both quantitative and qualitative methodologies.

4.3.1. SURVEY RESEARCH

4.3.1. What is survey research ?

Webster (1990) defines a survey as ***"the action of ascertaining facts regarding conditions or the condition of something to provide exact information especially to persons responsible or interested" and as "a systematic collection and analysis of data on some aspect of an area or group."*** A survey, then, according to Paul (1990) is much more than the mere compiling of data. The data must be analyzed, interpreted, and evaluated. Only after this processing can data become information. The "exactness" of the information is determined by the surveyor's methods. Unless he makes a systematic collection of data, followed by a careful analysis and evaluation with predefined objectives, his collection of data cannot become "exact" information.

4.3.2. Types Of Surveys:

Walmsley (1991) argues that surveys can be divided into two general categories on the basis of their extensiveness. A complete survey is called a "census." It involves contacting the entire group you are interested in, ie. the total population or "universe." The other category is more common; it is a sample survey. A sample is a representative part of a whole group (universe). Thus a sample survey involves examining only a portion of the total group in which you are interested, and from it, inferring information about the group as a whole.

4.3.3. The Sample survey research approach.

One of the decisions to be made in surveying is whether or not to sample. Parten (1990) presents a list of advantages and disadvantages of the sample survey. According to Parten (1990), the three most important considerations for the surveyor are:

- Speed
- low cost
- increased accuracy and analysis of the data.

Parten (1990) states that by sampling only a small portion of a large population, it is possible to collect data in far less time than would be required to survey the entire group. He goes onto add that not only is the data collection quicker, but the data processing and analysis also require less time because fewer pieces of data need to be handled. Parten (1990) also notes that rapidly changing conditions and the short turn-around time imposed in many surveys make the efficient use of time a critical variable. If an accurate snapshot of the attitudes of a particular group is desired, currency is of paramount importance. Indeed speed is essential to ensure the data are "fresh," especially when it comes to research based on constantly moving subjects and information for example, surveying public opinion in a volatile or contentious area before they change appreciably.

The smaller amount of data gathered by sampling as opposed to surveying an entire population can mean large cost savings. By limiting the group to be surveyed, less time, hence less cost, are involved in collecting, formatting, and analyzing the data. Sampling thus allows you to do a credible job for a smaller investment of time and money.

Parten also notes that sampling enables the surveyor "to give more attention to each return received and to make certain that the data are as accurate as possible" (Parten,1990:110). This attention may lead to more precise information than would a less careful collection of data from the entire population. Nothing more than a rudimentary quality control is possible for the great volume of raw data gathered in a census. The more data collected, the greater the potential for making "accounting" errors.

Cohen and Manion (1994) reminds us that the disadvantages of sampling are few, but important. They argue that the main disadvantages stem from risk, lack of representativeness, and insufficient sample size, each of which can cause errors. It is therefore important to consider the fact that any inattention to any of these potential flaws will invalidate survey results.

It is also vital to realize that using a sample from a population to infer something about the entire population involves a risk. The risk results from dealing with partial information. If risk is not acceptable in seeking the solution to a problem or the answer to a question, then a complete survey or census, rather than a sample survey, must be conducted.

Determining the representativeness of the sample is the surveyor's greatest problem when sampling. By definition, "sample" means a representative part of an entire group. To avoid the charge of using "biased data," it is necessary to obtain a sample that meets the requirement of representativeness, and this is not an easy task. Without a representative sample, a survey will, at best, produce results that are misleading and potentially dangerous (Cohen and Manion, 1994:64).

According to Paul (1990), yet another major problem in sampling is to determine the size of the sample.

The size of the sample you need for a valid survey depends on many variables including the risk you are willing to accept and the characteristics of the population itself. Peters (1998) adds that, if sampling becomes too complicated, or the required sample size becomes too large, the easiest solution may be to survey the entire population (census).

The decision as to whether to survey the entire population or only a sample of it is not based on the above advantages and disadvantages alone.

4.4. SAMPLE AREA

The sample area consisted of the University of South Africa (UNISA) (Durban Campus) and the South African College of Open learning (SACOL) located in the province of KwaZulu Natal. UNISA (Durban Campus) is located on Old Fort Road, Durban while SACOL is located in Diantree Avenue, Asherville, approximately 4km from Durban city centre.

4.4.1. Brief History of the University of South Africa (UNISA)

The University of South Africa, also known as UNISA, is one of 11 mega distance teaching universities in the world. It was established in 1873 as the University of the Cape of Good Hope. To ensure the status of the university, hence the recognition of degrees conferred by it, the university administration hastened to apply for a royal charter. The governor, Sir Henry Barkly, made representations to the Queen and the charter was granted in 1877.

In 1916 its name was changed to the University of South Africa. Under its auspices several colleges became autonomous universities. Over fifty years ago, in 1946, UNISA pioneered tertiary distance education in the western

world, a move which heralded the beginning of UNISA as we know it today. Distance education provides a unique opportunity to all who wish to further their studies and who cannot attend residential institutions because of personal circumstances or occupational obligations.

UNISA has its roots in the Cape, where it was formed as an examining body in 1873. Today, this function still exists in the Department of Music where, for over 100 years, music students have been examined. In 1916 the University changed its name from the University of the Cape of Good Hope to the University of South Africa. Two years later UNISA relocated to Pretoria.

In the 1940's with these universities and colleges becoming autonomous UNISA stood at the crossroads. The additional needs of students who studied by themselves and came to be examined were clear. These students could not attend conventional residential universities for a number of reasons and most were older than the average student entering university for the first time. The idea of distance teaching was born and the Division of External Studies opened on 15 February 1946. The first Principal was Professor AJ van der Walt. The University began with a few thousand students and a handful of staff in offices in the centre of the city. Since then the University has gone from strength to strength. It is one of 11 mega distance education universities in the world (universities with more than 100 000 students) and its qualifications are recognized worldwide. It has about 3 000 staff members including academic, administrative and support staff.

4.4.2. Brief History of the South African College of Open learning (SACOL)

In 1998, the KwaZulu Natal Department of Education and Culture, acting on the policies of the National Department of Education amalgamated three Colleges of Education, namely: Springfield College of Education, Natal

College of Education and the Umlazi College of Education into SACOL. The amalgamation of the above three colleges was purely based on the restructuring of Teacher Training Colleges in KwaZulu Natal. These three Colleges were predominantly "Preservice providers" of teacher educators. They offered diplomas in Teacher Education. Tuition was based on face to face contact. However, with the formation of SACOL, teaching and learning was provided by a dual mode methods, namely correspondence and face to face contact. The formation of SACOL also saw the end of pre-service education provision to in-service teacher education provision. In 1999, SACOL had a staff complement of approximately 130 and a student population of approximately 3000. Currently, SACOL is in the process of being taken under the wing of UNISA. Although there is much speculation on the above matter, there are no documents available on the exact nature of the take over.

4.5. TARGET POPULATION:

The sample population for this research study consisted of :

- students enrolled at SACOL and UNISA
- staff employed at SACOL and UNISA

4.6. SAMPLE SIZE:

As mentioned earlier, when you sample, you are dealing with only partial information. One must accept a risk of being wrong when inferring something about the population on the basis of sample information. It is therefore paramount that one identifies the amount of risk you are willing to take from the outset. This amount of risk relates directly to the size of your sample. Simply stated, the less risk you are willing to take, the larger your sample must be. If you cannot accept any risk, you should survey the entire population (take a census).

When determining risk level, one must keep in mind the time and cost involved in obtaining the sample size sufficient to achieve the risk level one can accept. One may find it impossible to produce a sample large enough to meet that risk level.

4.6.1. Determining the Confidence Level and Precision

Risk, as it relates to sample size determination, is specified by two interrelated factors:

- confidence level
- precision (or reliability) range.

To minimize risk, the researcher opted for a high confidence level, namely, (99%) and + or - 5% precision range. Anderson (1990) argues that when we widen the range of precision (or reliability), we have to increase our confidence level. Likewise, if we reduce the range, we reduce our confidence level. Most surveying organizations use a 95 percent confidence level and a + / - 5 percent precision level as the absolute minimum.

Once you determine your desired degree of precision and your confidence level, there are several formulas you can use to determine sample size depending on how you plan to report the results of your study. For the purposes of calculating the sample size for this study, the researcher made use of the sample size calculator developed by Pearson (2001)
(http:www.ncs.com/ncscorp/research/calc.html).

The NCS sample estimator yielded the following results based on the sample size of 23000 :

Level of confidence (%)	Sample Number Required
90	269
95	378
99	664

Table 1: Confidence level

Although the sample size calculator indicated that a sample of 664 was required at the 99% confidence level, the researcher nevertheless took a 5% sample size which resulted in 1005 respondents. By taking an increased sample size, the confidence level dropped to :

- 2.5% at the 90% confidence level
- 3% at the 90% confidence level
- 4% at the 90% confidence level

The 4% confidence interval at the 99% confidence level indicates that if the same survey is conducted 100 times, 99 out of the 100 administrations should yield the same results within the +/- 4% of the current number.

4.6.2. Sample size: Students

	UNISA	SACOL	TOTAL
TOTAL NO OF STUDENTS	19860	3100	22960
SAMPLE SIZE	1000	155	1155
SAMPLE PERCENTAGE	5%	5%	5%

Table 2: Sample Size of Students

4.6.3. Sample size: Staff

INSTITUTION	UNISA	SACOL	TOTAL
SAMPLE SIZE OF STAFF	165	30	195

Table 3: Sample Size of Staff

4.7. SAMPLE TECHNIQUE: PURPOSIVE SAMPLING

The representativeness of the sample is determined solely by the judgment of the researcher. Since each member in the population does not have an equal chance of being chosen, a judgment sample is also a nonrandom sampling method. There are situations when a variation of the judgment sampling method can be argued to be appropriate. In such situations, it goes by the name of purposive sampling. As the name implies, members from the population are selected into the sample to meet some purpose.

The researcher opted for the purposive sampling method because:

- Population was too large to take a census.
- The researcher could not get access to the name list of all students enrolled at UNISA and SACOL (Durban campuses)
- The purposive sampling method allowed the researcher to sample students from all the race groups, namely, Indian, Coloureds, Whites and Blacks.
- The purposive sampling method also allowed the researcher to sample students from different age groups and taking different modules.

4.8. RESEARCH INSTRUMENTS:

4.8.1. Questionnaire

The most common means of collecting data are the interview and the self- or group-administered questionnaire. In the past, the interview has been the most popular data-collecting instrument. Recently, the questionnaire has surpassed the interview in popularity, especially in educational studies.

4.8.1.1. Rationale for using the questionnaire as a research instrument.

- lower costs
- better samples
- standardization
- respondent privacy (anonymity)

The primary advantage is lower cost, in time as well as money. Not having to train interviewers eliminates a lengthy and expensive requirement of interviewing. The questionnaire can be administered simultaneously to large groups whereas an interview requires each individual to be questioned separately. This allows the questions to reach a given number of respondents more efficiently than is possible with the interview. Finally, the cost of postage should be less than that of travel or telephone expenses.

Many surveys are constrained by a limited budget. Since a typical questionnaire usually has a lower cost per respondent, it can reach more people within a given budget (or time) limit. This can enhance the conduct of a larger and more representative sample.

The questionnaire provides a standardized data-gathering procedure. The effects of potential human errors (for example, altering the pattern of question asking, calling at inconvenient times, and biasing by "explaining") can be minimized by using a well-constructed questionnaire. The use of a questionnaire also eliminates any bias introduced by the feelings of the respondents towards the interviewer (or vice versa).

Although the point is debatable, most surveyors believe the respondent will answer a questionnaire more frankly than he would answer an interviewer,

because of a greater feeling of anonymity. The respondent has no one to impress with his/her answers and need have no fear of anyone hearing them. To maximize this feeling of privacy, it is important to guard, and emphasize, the respondent's anonymity.

4.8.1.2. Disadvantages of using questionnaires

The primary disadvantages of the questionnaire are non-returns, misinterpretation, and validity problems. Non-returns are questionnaires or individual questions that are not answered by the people to whom they were sent. Oppenheim (1986) emphasizes that "the important point about these low response rates is not the reduced size of the sample, which could easily be overcome by sending out more questionnaires, but the possibility of bias. Non-response is not a random process; it has its own determinants, which vary from survey to survey" (p 34).

For example, you may be surveying to determine the attitude of a group about a new policy. Some of those opposed to it might be afraid to speak out, and they might comprise the majority of the non-returns. This would introduce non-random (or systematic) bias into your survey results, especially if you found only a small number of the returns were in favor of the policy. Non-returns cannot be overcome entirely. What we can do is try to minimize them. Techniques to accomplish this are covered later in this chapter.

Misinterpretation occurs when the respondent does not understand either the survey instructions or the survey questions. If respondents become confused, they will either give up on the survey (becoming a non-return) or answer questions in terms of the way they understand it, but not necessarily the way you meant it. Some view the latter problem as a more dangerous occurrence than merely non-responding. The questionnaire instructions and

questions must be able to stand on their own and must use terms that have commonly understood meanings throughout the population under study. If novel terms must be used, be sure to define them so all respondents understand your meaning.

The third disadvantage of using a questionnaire is inability to check on the validity of the answer. Did the person you wanted to survey give the questionnaire to a friend or complete it personally? Did the individual respond indiscriminately? Did the respondent deliberately choose answers to mislead the surveyor? Without observing the respondent's reactions (as would be the case with an interview) while completing the questionnaire, you have no way of knowing the true answers to these questions.

4.8.1.3. Overcoming the disadvantages of the questionnaire as a research instrument

The secret in preparing a survey questionnaire is to take advantage of the strengths of questionnaires (lower costs, more representative samples, standardization, privacy) while minimizing the number of non-returns, misinterpretations, and validity problems. This is not always as easy as it sounds. But an inventive surveyor can very often find legitimate ways of overcoming the disadvantages. The following are some of the principles that the researcher employed to negate the disadvantages of using the questionnaire as a research instrument:

- ***The Contents***

  The key to minimizing the disadvantages of the survey questionnaire lies in the construction of the questionnaire itself. A poorly developed questionnaire contains the seeds of its own destruction.

Each of the three portions of the questionnaire - the cover letter, the instructions, and the questions - must work together to have a positive impact on the success of the survey.

- The ***cover letter*** should explain to the respondent the purpose of the survey and motivate them to reply truthfully and quickly. If possible, it should explain why the survey is important to them, how they were chosen to participate, and who is sponsoring the survey (the higher the level of sponsorship the better). Also the confidentiality of the results should be strongly stressed. A well written cover letter can help minimize both non-return and validity problems. In support of the statement above regarding level of sponsorship, the signature block on the letter should be as high level as you can get commensurate with the topic being investigated. For instance, a survey about Research at University of Durban Westville be signed by the Rectorate or Management.

  Another tip that seems to help improve response rate is to identify the survey as official. Even though the letter is on government stationery and is signed by an military official, it may help to mark the survey itself with an OFFICIAL stamp of some sort. In general, the more official the survey appears, the less likely it is to be disregarded.

  The cover letter should be followed by a clear set of instructions explaining how to complete the survey and where to return it. If the respondents do not understand the mechanical procedures necessary to respond to the questions, their answers will be meaningless. The instructions substitute for your presence, so you must anticipate any questions or problems that may arise and attempt to prevent them from occurring. If you are using ADP scanner sheets, explain how you want

the respondent to fill it in - what portions to use and what portions to leave blank. Remember anonymity! If you do not want respondents to provide their names, say so explicitly in the instructions, and tell them to leave out their and personal details if they so wish.

- ***Questions***

  The third and final part of the questionnaire is the set of questions. Since the questions are the means by which you are going to collect your data, they should be consistent with your survey plan. They should not be ambiguous or encourage feelings of frustration or anger that will lead to non-returns or validity problems.

4.8.1.4. Types of questions

Cantelou (1990) identifies the following four types of questions used in surveying.

- ***The classifier or background question:*** is used to obtain demographic characteristics of the group being studied, such as age, sex, grade, level of assignment, and so forth. This information is used when you are categorizing your results by various subdivisions such as age or grade. Therefore, these questions should be consistent with your data analysis plan.
- ***The multiple choice or closed-ended question.*** It is used to determine feelings or opinions on certain issues by allowing the respondent to choose an answer from a list you have provided.
- ***The intensity question***: is a special form of the multiple-choice question These questions are used to measure the intensity of the respondent's feelings on a subject. These questions provide answers that cover a range of feelings. As mentioned previously, the intensity question is used to measure the strength of a respondent's feeling or attitude on a particular topic. Such questions allow you to obtain more quantitative information about the survey subject.

Instead of a finding that 80 percent of the respondents favor a particular proposal or issue, you can obtain results that show 5 percent of them are strongly in favor whereas 75 percent are mildly in favor. These findings are similar, but the second type of response supplies more useful information. The most common and easily used intensity (or scaled) question involves the use of the Likert-type answer scale. It allows the respondent to choose one of several (usually three to five) degrees of feeling about a statement from strong approval to strong disapproval. The "questions" are in the form of statements that seem either definitely favorable or definitely unfavorable toward the matter under consideration. The answers are given scores (or weights) ranging from one to the number of available answers, with the highest weight going to the answer showing the most favorable attitude toward the subject of the survey.

- ***The final type of question is the free response or open-end question.*** This type requires respondents to answer the question in their own words. It can be used to gather opinions or to measure the intensity of feelings.

Important considerations were taken in deciding on the format of questions to include in the questionnaire. An important consideration was that of how the question is to be delivered (mail, e-mail, face to face), the type of information the respondent is expected to provide, and the possible alternative responses. Making these decisions resulted in the selection of open-ended, fill-in-the blank, binary-choice, scaled-response, and unscaled-response questions.

4.8.1.5. Questionnaire Construction

The complex art of question writing has been investigated by many researchers. From their experiences, they offer valuable advice. Below are some helpful hints typical of those that appear most often in texts on question construction.

- ***Keep the language simple.***

  Analyze the audience and write on their level. Parten (1990) suggests that writing at the lowest level is most desirable as it would allow for a wide variety of respondents. The researcher for this questionnaire construction, was mindful of the fact that the questionnaire had to cater for English second language respondents and as such kept the language very simple. The use of technical terms and jargon was avoided at all times.

- ***Keep the questions short.***

  Long questions tend to become ambiguous and confusing and thus a respondent, in trying to comprehend a long question, may leave out a clause and thus change the meaning of the question (Halpin, 1986). It was for this reason that the questions and statements in this study were always kept short, simple and to the point.

- ***Keep the number of questions to a minimum.***

  According to Campion, et al. (1994), there is no common agreement on the maximum number of questions that should be asked, but research suggests higher return rates correlate highly with shorter surveys. Ask only questions that will contribute to your survey. In this regard, Anderson (1990) asks us to apply the "So what?" and "Who cares?" tests to each question. "Nice-to-know" questions only add to the size of the questionnaire. Having said this, one should keep in mind that you should not leave out

questions that would yield necessary data simply because it will shorten your survey. If the information is necessary, ask the question. With the availability of desk top publishing (DTP) software, it is often possible to give the perception of a smaller survey (using smaller point/pitch type faces, etc.) even though many questions are asked. A three-page type written survey can easily be reduced to a single page using DTP techniques.

- ***Limit each question to one idea or concept.***

  A question consisting of more than one idea may confuse the respondent and lead to a meaningless answer. Consider this question: "Are you in favor of raising pay and lowering benefits?" What would a yes (or no) answer mean?

- ***Do not ask leading questions.***

  According to Hollwitz and Wilson (1991), one should avoid questions that are worded in a manner that suggests an answer. They go onto argue that some respondents may give the answer you are looking for whether or not they think it is right. Such questions can alienate the respondent and may open your questionnaire to criticism. A properly worded question gives no clue as to which answer you may believe to be the correct one.

- ***Use subjective terms such as good, fair, and bad sparingly, if at all.***

  These terms mean different things to different people. One person's "fair" may be another person's "bad." How much is "often" and how little is "seldom?"

- ***Allow for all possible answers.***

  Pawlas (1995) reminds us of the fact that respondents who cannot find their answer among your list will be forced to give an invalid reply or, possibly, become frustrated and refuse to complete the

survey. Wording the question to reduce the number of possible answers is the first step. Avoid dichotomous questions (except for obvious demographic questions such as gender). If you cannot avoid them, add a third option, such as no opinion, don't know, or other. These may not get the answers you need but they will minimize the number of invalid responses. A great number of "don't know" answers to a question in a fact-finding survey can be a useful piece of information. But a majority of other answers may mean you have a poor question, and perhaps should be cautious when analyzing the results (Halpin, 1986: 121).

- ***Avoid emotional or morally charged questions.***
  The respondent may feel your survey is getting a bit too personal!

Finally, a few questions that can serve as checks on the accuracy and consistency of the answers as a whole were included. Some questions were worded differently, but are solicited the same information, in different parts of the questionnaire. These questions were designed to identify the respondents who are just marking answers randomly or who were trying to game the survey (giving answers they think you want to hear). Parten (1990) states that , if you find a respondent who answers these questions differently and if you have reason to doubt the validity of their entire set of responses then for this reason, you may decide to exclude their response sheet(s) from the analysis.

4.8.1.6. Organizing the pattern of the questions:

Charles (1988), Kerlinger (1979) and Hauf (1986) argue that questions must be carefully thought off and planned in a logical sequence. They also add that, sub sections must be demarcated to allow for easy identification and completion. Taking a cue from their advice, the researcher adopted the

following pattern for the questionnaire in this study:

- Demographic questions were placed at the end of the questionnaire.
- Easier questions were asked first.
- To minimize conditioning, general questions preceded specific ones.
- Similar questions were grouped together in sub headings.
- Personal questions were placed at the end of the questionnaire.

4.8.1.7. Administering of the questionnaires :

4.8.1.7.1. SACOL Students And Staff

SACOL provides face to face contact with their students during the school vacations. The logic behind this is the fact that all of SACOL students are educators and as such they would be available during the school vacations. Thus face to face contact sessions are provided only during the school vacations. Students report to their Durban campus during the school vacation for individual and group based tutorial sessions. The initial plan was to post questionnaires randomly via mail to the 350 students to be chosen from the SACOL student database. However after discussions with the Vice Rector, namely Mr Mogamberry, the researcher was advised that it would be in the best interest in terms of cost and obtaining a high response rate, that, the researcher administer the questionnaires to students personally, when they reported to the campus during the school vacations. Mr Mogamberry granted the researcher permission to administer these questionnaires during the tutorial sessions. The researcher was allowed 30 minutes during each tutorial session to administer the questionnaire. By taking the Vice Rector's advice, the researcher was able to obtain a 100% response rate from students.

4.8.1.7.2. UNISA staff and students:

The majority (approximately 500) questionnaires for UNISA students were administered one week prior to the first semester examinations. The other 505 questionnaires were administered during Saturdays in the months of March, April and May of 2001.

Questionnaires to UNISA staff were emailed to them. The response rate was excellent. Although the questionnaires were emailed, 10% of the respondents faxed their questionnaires while another 12% posted their questionnaires to me via snail mail.

4.8.1.8. Pilot Study

This is the most important step in preparing one's questionnaire. The purpose of the pretest is to see just how well the cover letter motivates the respondents and how clear the instructions, questions, and answers are. One should choose a small group of people (three to ten should be sufficient) that one feels is representative of the group that is to be surveyed. After explaining the purpose of the pretest, let them read and answer the questions without interruption. When they are through, ask them to critique the cover letter, instructions, and each of the questions and answers. Don't be satisfied with learning only what confused or alienated them. Question them to make sure that what they thought something meant was really what you intended it to mean.

Anderson also concurs with the view that a pilot study is a small scale study conducted prior to the actual research. In this regard a pilot study was conducted in order to test the procedures and techniques to gauge that they work satisfactorily. The major aim of the pilot study was to test the survey instruments namely the questionnaires and interview schedules to ascertain

whether there was any possibility that meaningful results would be found. The pilot study was an excellent way of avoiding trivial or non-significant research.

Feedback was obtained from a small but representative sample of potential respondents from students and staff enrolled at SACOL and UNISA. On completion of the pilot study, the following corrections and changes were made to the survey instruments:

4.8.2. The structured interview

The first step in designing the interview was to formulate the broad overall questions that the survey was intended to answer, i.e.,

- Why is the study being undertaken?
- What does the study aim to learn or determine?

Based on the above two questions, the researcher went onto to conduct a face to face structured interview.

4.8.2.1. Rationale for conducting the Face-to-Face Interview

- It allowed for the researcher to establish rapport with the respondent
- Face to face interviews also enabled the researcher to observe as well as listen
- It permitted more complex questions to be asked than in other types of data collection such as questionnaires

4.8.2.2. The construction of questions to be asked

Three main criteria were used for the construction of questions. These criteria were based on the following:

- ***Relevance***

  Questions should be directly related to the purpose of the study and have a good probability of yielding the kind of data desired.

- ***Selection of respondents***

  Even though a question may be relevant to the study, it may not be answerable by the people to whom it will be asked.

- ***Ease of response***

  Questions need to be relatively easy to answer and should not create embarrassment for or an undue burden on the interviewee.

Among the types of questions that were avoided were those that require respondents to consult records or other information sources. According to Anderson (1990) questions that make respondents uncomfortable for any reason, would reflect negatively on them and thus would make the interview confrontational, or have no specific answer.

4.9. CONCLUSION

The researcher has opted for the survey research strategy mainly because of cost, time and distance. Noting that the researcher is in full time employment, it was impossible to engage in other types of research methodologies. Research has shown that surveys are commonly used in education for a wide variety of purposes. The major advantages of surveys are that it could be undertaken to determine levels of knowledge and ascertain needs in order to plan and take informed decisions about educational matters. In thus study, surveys were conducted amongst both distance education staff and students to ascertain the popularity of distance education, what type of learner support is being offered to students and the level of technology that is employed in distance education delivery in South Africa. The research approach was thus very practical and well constructed to suit the needs the researcher in terms of accuracy and

generalizations that could be made across all distance education students in South Africa.

Because surveys are used so frequently and are adaptable to a wide range of uses, some individuals develop the mistaken opinion that surveys are easy to conduct. This study has shown that surveys involve much more than the simple mailing of a set of questionnaires to a group of subjects. It must be pointed out that the reason why surveys are popular, is that, if they are done correctly, sound information can be collected from a small sample that can be generalised to a large population.

In chapter five, the results of the survey are presented graphically in the form of tables and charts. Each of these tables and charts are discussed and analysed.

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CHAPTER FIVE:

ANALYSIS AND DISCUSSION

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5. INTRODUCTION

In this chapter, the researcher provides a detailed report of the research findings. Each of the research findings is carefully discussed and analyzed. According to McMillan and Schumacher (1984:374), " What is important to the researcher may be trivial to another, and even if a group of researchers agree that all important results have been reported, the information may be trivial from the point of view of the reader". Taking this argument into account, the researcher has taken very careful precautions in reporting the research findings. The data is presented in a clear, unbiased and concise manner. The discussion and analysis that follow each of the research findings are also free of bias.

Hersen (1996), argues that the reporting of research findings, discussions and analysis thereof, must provide an overview of the general patterns that emerge in the data. It is for this reason, the researcher has made use of tables and graphs to present the data. The use of tables and graphs allowed the researcher not only to represent a number of data simultaneously, but also to highlight relationships and correlations in a meaningful way..

Wiersma (1994:213), reminds us that, " Regardless of length, the results should be reported objectively in a clear manner and the presentation of the results should be organized around the research hypotheses". Based on the argument of Wiersma (1994), the researcher has organized the presentation of the data, together with the analysis and discussion of each of the findings, under the three critical questions that were identified for this study (see Chapter One). With this type of organization and presentation of data, "the reader can logically connect results with the purpose of the research" (McMillan and Schumacher, 1984: 372).

5.1. CRITICAL QUESTION NUMBER ONE:

How Popular Is Distance Education Amongst Higher Education Students In South Africa?

5.1.1. Age Of The Respondents:

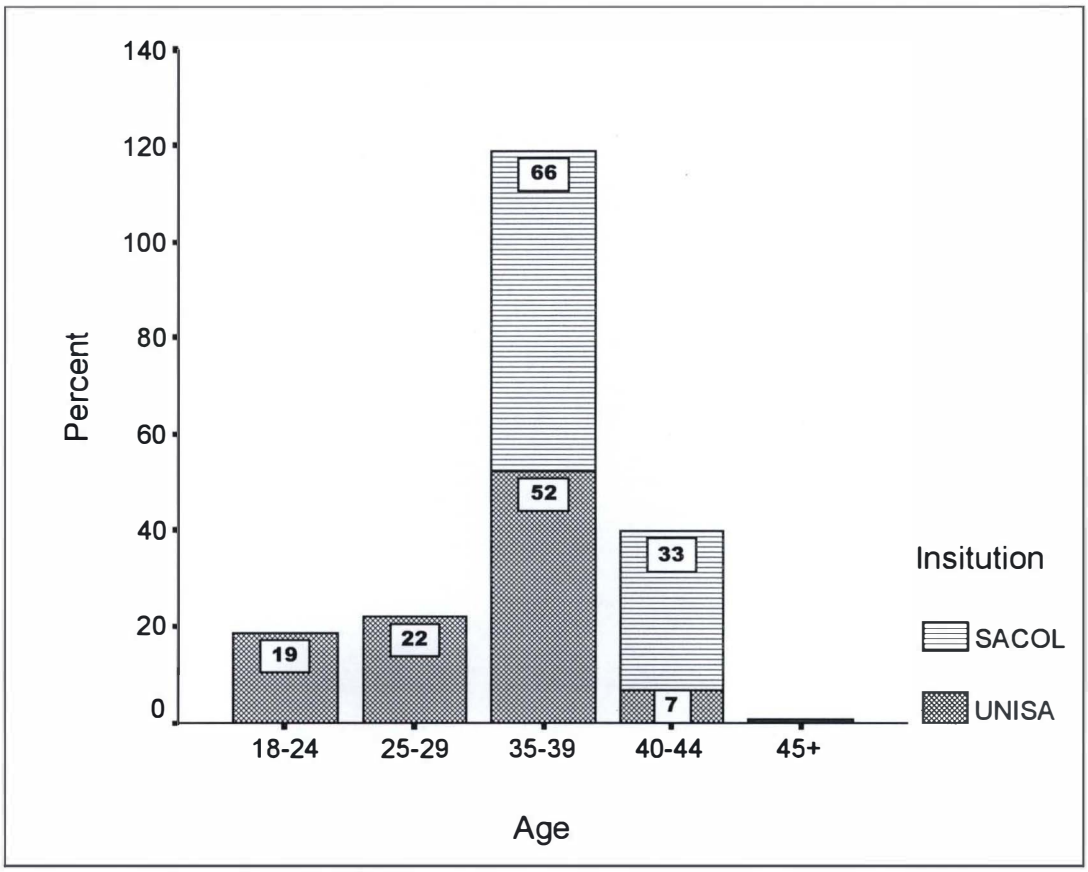

Figure 5.1. : Age of respondents.

The researcher felt that it was pertinent to ascertain the age of the respondents who are engaged in distance education in South Africa so that we could establish whether distance education is popular between all or only between certain age groups. By obtaining data on the age group and the popularity of distance education, the researcher was then able to correlate the South African scenario to that of international trends which indicate that age is not an active determinant (Aleobua:1999) in the choice of distance education amongst learners. In the United States, distance education provision

begins from grade seven to tertiary education. Distance education provision within the school system is very popular through out the international education landscape. The researcher was therefore curious to ascertain the age group of students who engaged in distance education in South Africa.

The majority of the respondents, namely 52% SACOL and 60% UNISA fell within the 35-39 age category while 33% of SACOL and 7% of UNISA respondents were between the ages 40-44. 22% of UNISA respondents were between 25-29 while a further 19% were between 18-24 years of age. 7% of SACOL respondents were over 45 years. It was most interesting to note that there were no UNISA respondents above the 45 year age group. The statistics above reveal that distance education is most popular amongst students who are between 30 and 45 years of age. It was quite discerning to note that distance education amongst students who are 45 years and older is not popular. It appears that tertiary education for students above 45 years has not really taken off in South Africa. The reason for this discernment stems from the fact that for centuries, the black community within our country did not have access to good quality educational opportunities and as such one would have imagined that adult education within the tertiary sector or band would have proven quite popular. However this research study has shown that the older folk (above 45 years) were not keen on tertiary education. However it could also be argued that educational institutions are not providing adequate adult basic education where these older students can begin to attend bridging courses and thereby attain matriculation certification which is a pre requisite for enrollment at tertiary institutions. Both SACOL and UNISA do not provide qualifications for the school sector. They are solely tertiary education providers. The findings of this study suggests that distance education is popular amongst all age groups below the threshold of 45 years.

5.1.2. Gender

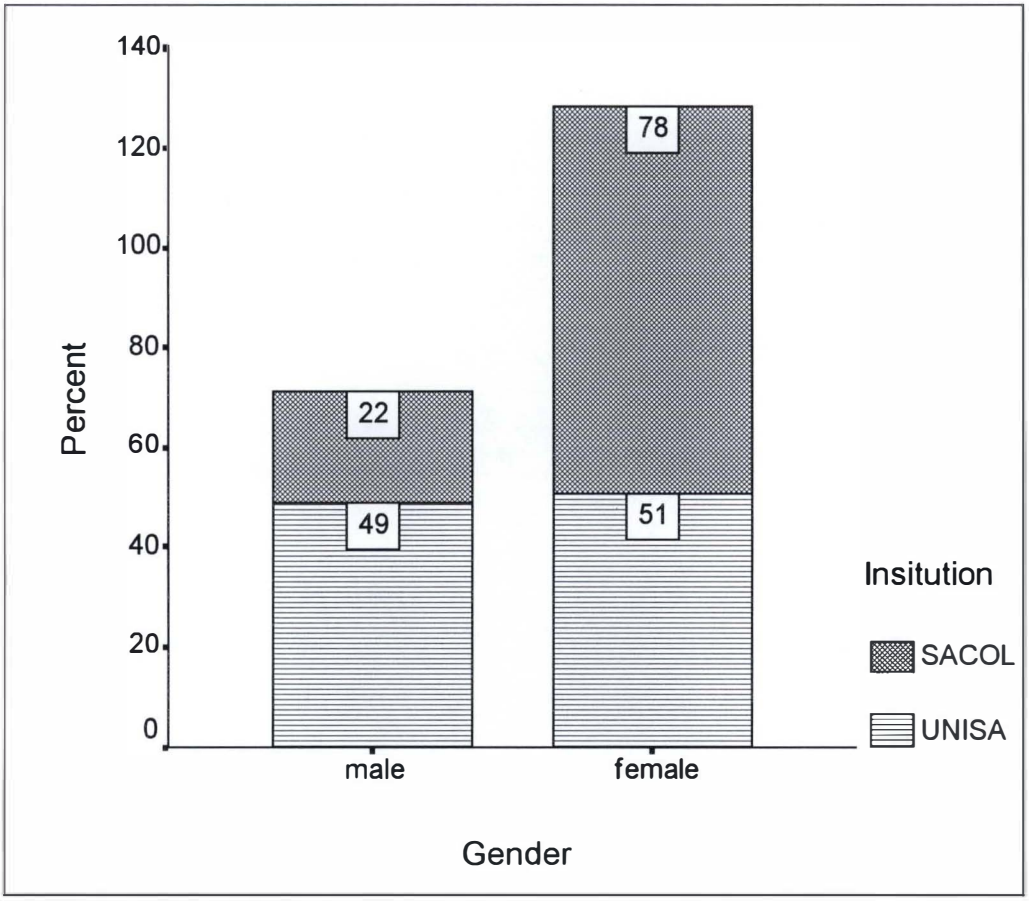

Figure 5.2. : Gender

The respondents from UNISA consisted of 51% females and 49% males while SACOL respondents were 22% males and 78% females. Sewart (1994) found that generally more females than males enrolled at distance education institutions. This was true for the case of SACOL students in this research study. Sewart (1994) also argues that there is no trend in the gender distribution of students who are enrolled at distance education institutions. Keegan (1990) on the other hand states that international trends in the enrollment of distance education learners reveal that more males enroll for courses that are online and which involves multi media.

5.1.3. Travelling Distance To Institution Enrolled At:

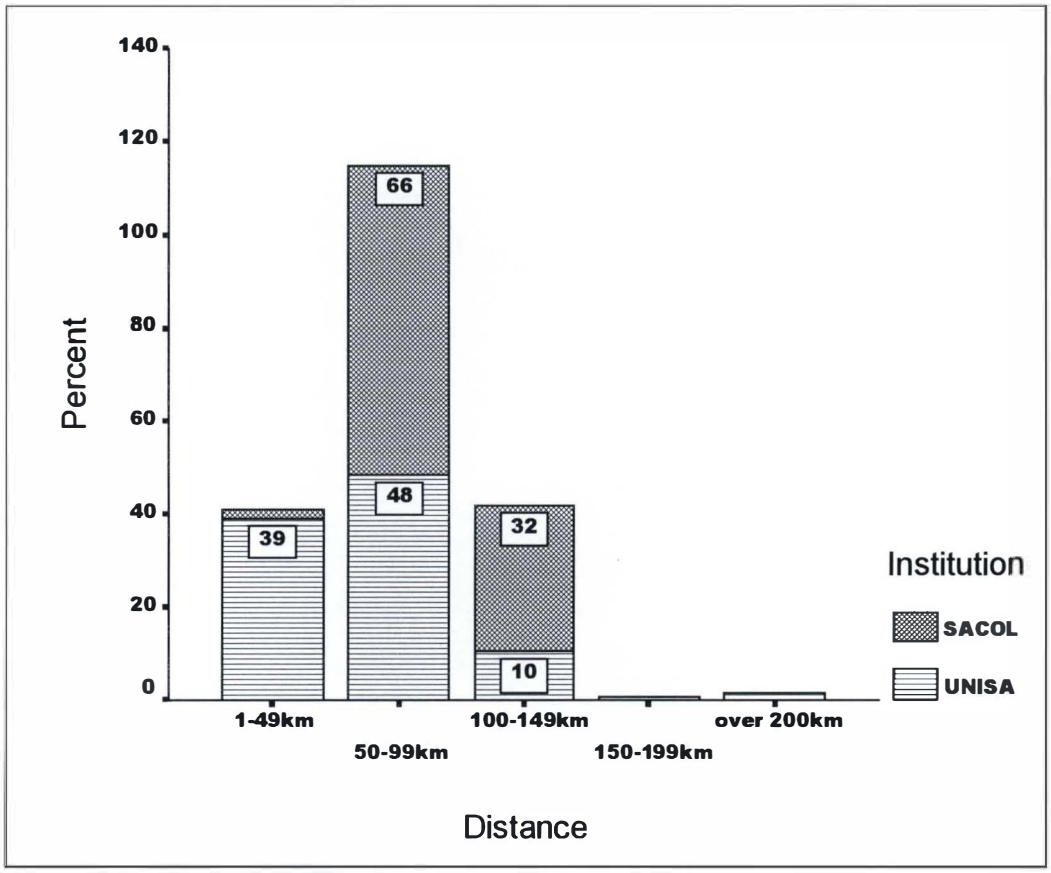

Figure 5.3. : Travelling distance

The majority of the students (66% SACOL and 48% UNISA) lived within a radius of 50-99km from their institutions. 39% UNISA and 2% SACOL students lived within a radius of 50km from their institution while 32% SACOL and 10% UNISA lived within a radius of 100-149km from their institution. Only 5% of UNISA students travelled more than 200km to their institution while 2% lived within a radius of 15-199km from their institution.

This research study confirms the myth that many individuals have of the role of physical distance as a determinant factor in the choice of distance education as an alternate system of education. According to Bagwandeen and Louw (1993), distance education was historically, a mode of educational

delivery that was popular amongst students who lived far off in remote areas and location as a result of which they were unable to register at tertiary institutions.

Virtual education and cyber education with all the advantages of online teaching and learning has made distance the least of the determinants (Besser and Bonn:1997) in distance education. The physical barrier has been far removed by the introduction of various technology driven modes of education delivery. Satellite broadcasts, video and television conferencing and the internet has made distance in education a thing of the past. However, large scale online teaching and learning is still only prevalent and popular in first world countries. Developing countries are still in the process of developing the required infrastructures

Indeed these statistics make very interesting reading since they discount the myth that most students learning at distance education institutions do so purely because they live in remote parts which involve long distances and travel. The popularity of distance education amongst tertiary students moves far beyond the issue of distance. The development and application of technology over the centuries have played a critical role in the demise of physical distance (Brophy and Dudley:1982) as a barrier in distance education. Multi mode delivery systems such as radio and television broadcasts, satellite transmissions, fax and e-mail together with the Internet have resulted in the death of distance in distance education. This research study has also concluded beyond any doubt that physical distance is not the only criterion that students use to chose distance education modes of learning. The majority of students surveyed at both SACOL and UNISA live under 100km away from their institutions. Robinson (1999) also found that the Open University of Hong Kong attracts majority of its students from a catchment area not exceeding more than 45km away from the campus. This

also indicates that distance is not the only factor for students choosing to study at distance education institutions.

5.1.4. Occupation of respondents

OCCUPATION	INSTITUTION			
	UNISA		SACOL	
	COUNT	%	COUNT	%
Unemployed	231	23.0		
Educator	383	38.1	152	100.0
Clerk	118	11.7		
Computers	85	8.5		
Nursing/Health	54	5.4		
Accounts	47	4.7		
Sales	15	1.5		
Administration	42	4.2		
Management	30	3.0		
TOTAL	1005	100	152	100

Table 5.1. : Occupation of respondents

100% of SACOL students were employed. These are students who are presently employed as educators in schools and are currently upgrading their qualifications on a part time basis. SACOL has devised specialized courses for these students in the various learning areas that are offered in schools.

23% of UNISA students are unemployed. Of these 23%, the majority (68%) of the students are recent school leavers who have completed matriculation. These students have had great difficulty in securing employment and have thus opted to study via distance in the hope of finding a job while studying. The remaining 32% of the unemployed students have been retrenched or laid off work due to rationalization and their companies being liquidated. It was quite interesting to note that although unemployed these students perservered to continue studying. The majority of these students indicated that they chose to study with the view of changing their job

orientation. These findings thus indicate that distance education is popular amongst both employed and unemployed individuals.

5.1.5. Reasons for the choice of institution

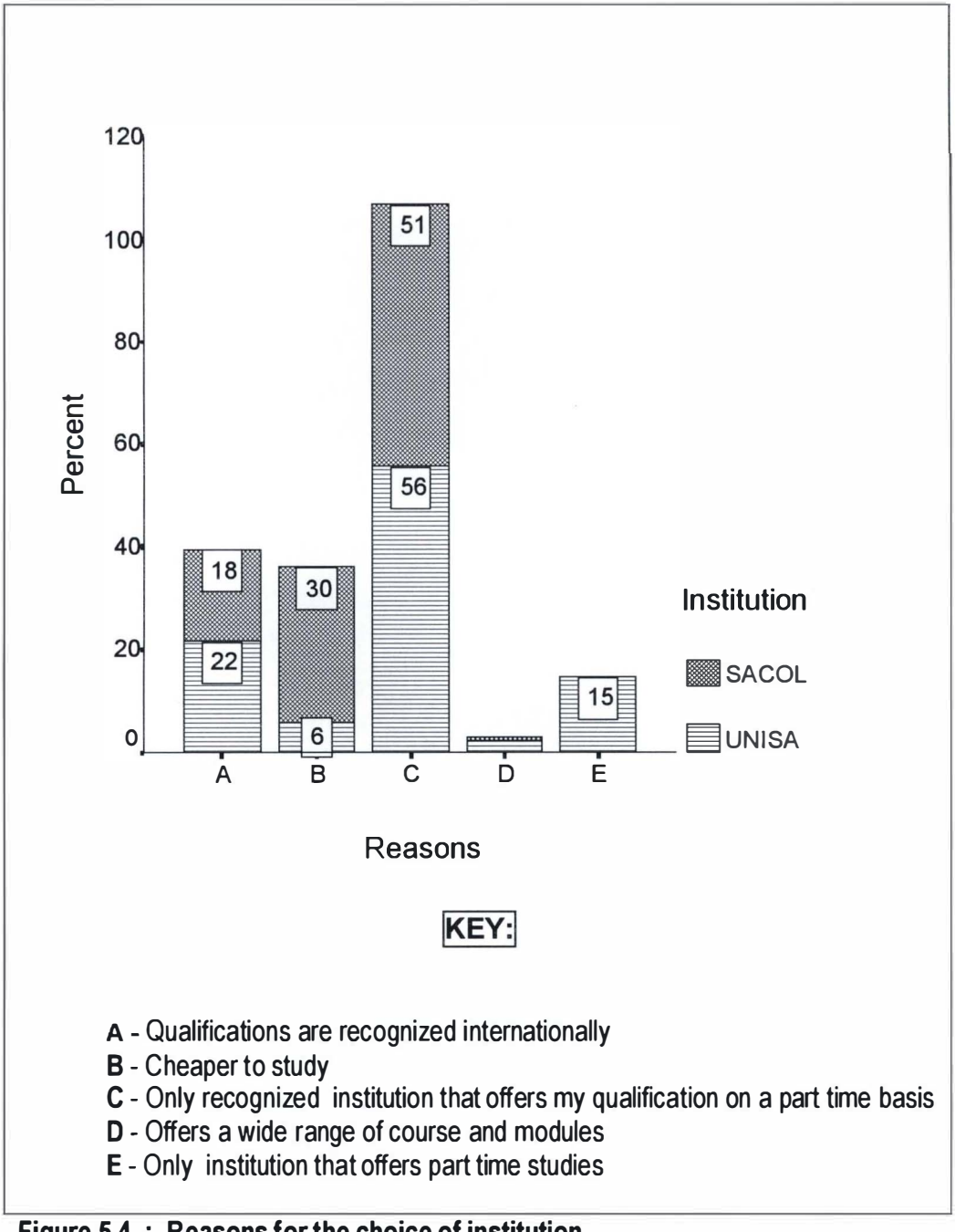

Figure 5.4. : Reasons for the choice of institution

The majority of the respondents, namely 56% UNISA and 51% SACOL indicated that their major reason of choice for enrolling at their respective institutions was that it was the only recognized institution that offered their qualification on a part time basis. 30% SACOL and only 6% UNISA respondents felt that they chose their respective institutions because it was cheaper to study there. 22% respondents chose UNISA as their institution because they felt that it was the only institution that offered qualifications that were internationally recognized. 18% SACOL respondents felt likewise. Only 1% SACOL and UNISA respondents chose their institutions because they felt that it offered a wide variety of modules and courses.

The above statistics reveal that students are quite weary of studying at private higher education institutions. Respondents appeared to place great emphasis on recognized institutions and as such felt that it was important that the institutions they chose had a good standing within the education landscape of South Africa. In this respect, post apartheid education has implemented a qualifications authority, namely, South African Qualifications Authority (SAQA) which is entrusted with the certification of all institutions and their qualifications, modules and courses that they offered.

It is abundantly clear that distance education as an alternate system of education is popular in South Africa. However, the major reason for the choice of institution is based on the standing of the institution in South Africa. Students appear to have a preference for institutions that are recognized.

5.1.6. Degree or diploma presently enrolled for:

Table 5.2. (page 235) shows that, of the 1005 UNISA respondents, 369 respondents were enrolled for diplomas while 636 were enrolled for degrees. Of the degree qualification, the majority (41%), of the respondents were

enrolled for the Bachelor of Arts, while in the diploma category, the majority were enrolled for the Diploma in Commerce.

	QUALIFICATIONS ENROLLED FOR	INSTITUTION SACOL	UNISA
DIPLOMA	Banking		14
	Computers		80
	Commerce		100
	Human Resources management		80
	Public Administration		35
	Education	152	45
	Nursing		15
	TOTAL		**369**
DEGREE	Bachelor of Arts (BA)		411
	Bachelor of Commerce (B.Com.)		55
	Bachelor of Education (Hons)		23
	Bachelor of Science (B.Sc.)		45
	MBA		07
	BA (Hons)		80
	MA		12
	PhD.		03
	TOTAL		**636**
	TOTAL	**152**	**1005**

Table 5.2. : Degree / Diploma enrolled for.

There is no doubt that distance education proved to be popular for a wide variety of qualifications and as such students wishing to pursue any qualification do so via distance education. In the past, distance education provided for qualifications relating mainly to the arts, however with technology, distance education caters for students wishing to study engineering, medicine and the like. There is no limit or restriction to studying any number of qualifications via distance today.

5.1.7. Choice in the selection of institution

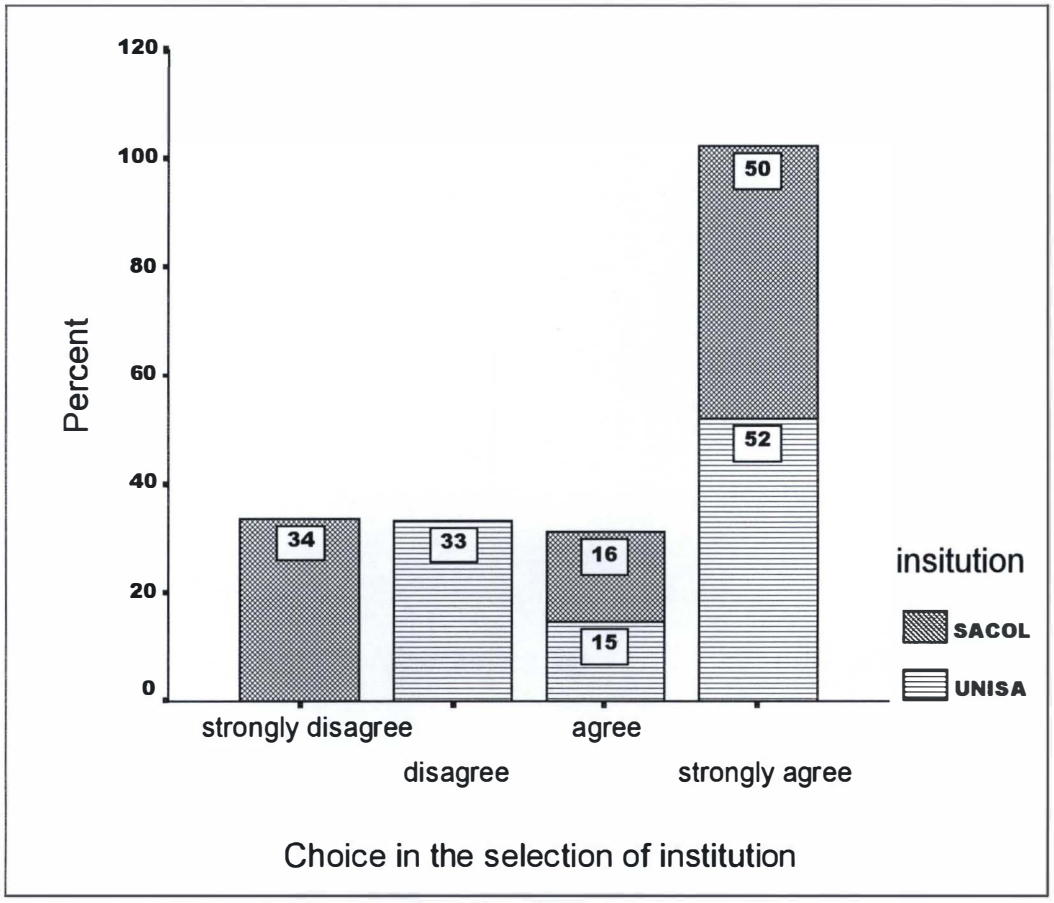

Figure 5.5. : Choice in the selection of institution

The majority of the respondents both from UNISA (15% agreed and 52% strongly agreed) and SACOL (16% agreed and 50% strongly agreed) that they had a choice in the selection of their institution to study at. Although respondents had a choice, they still opted for distance education as an alternate system of education. This indicates that distance education is popular amongst students in South Africa to pursue tertiary education.

5.1.8. Cost of study via distance

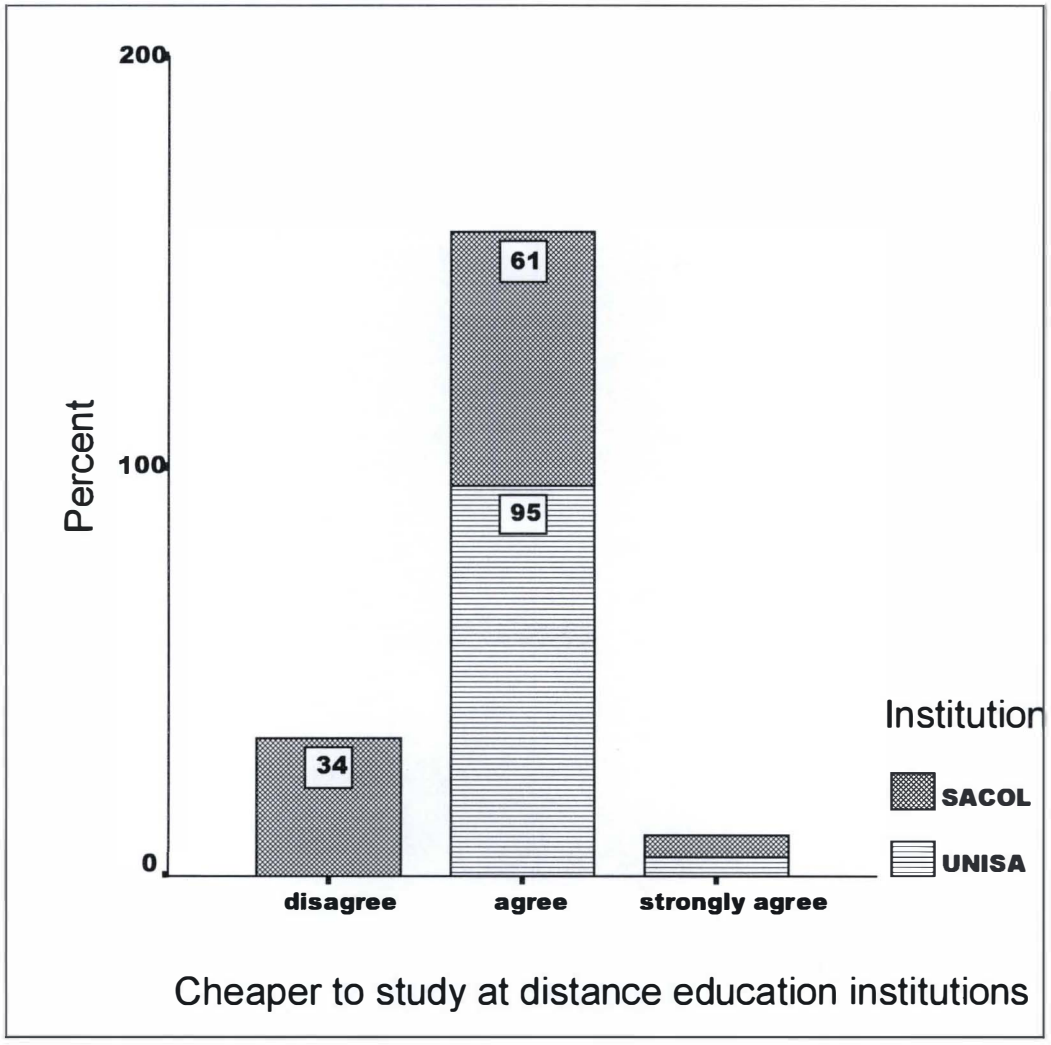

Figure 5.6. : Study costs at distance education institutions

All the UNISA students (95% agree and 5% strongly) agreed that it was cheaper to study via distance education. The majority of SACOL students (61% agree and 5% strongly agree) indicated that it was cheaper to study at SACOL while 34% disagreed that it was cheaper to study there.

5.1.9. Proximity of face to face institution to place of residence

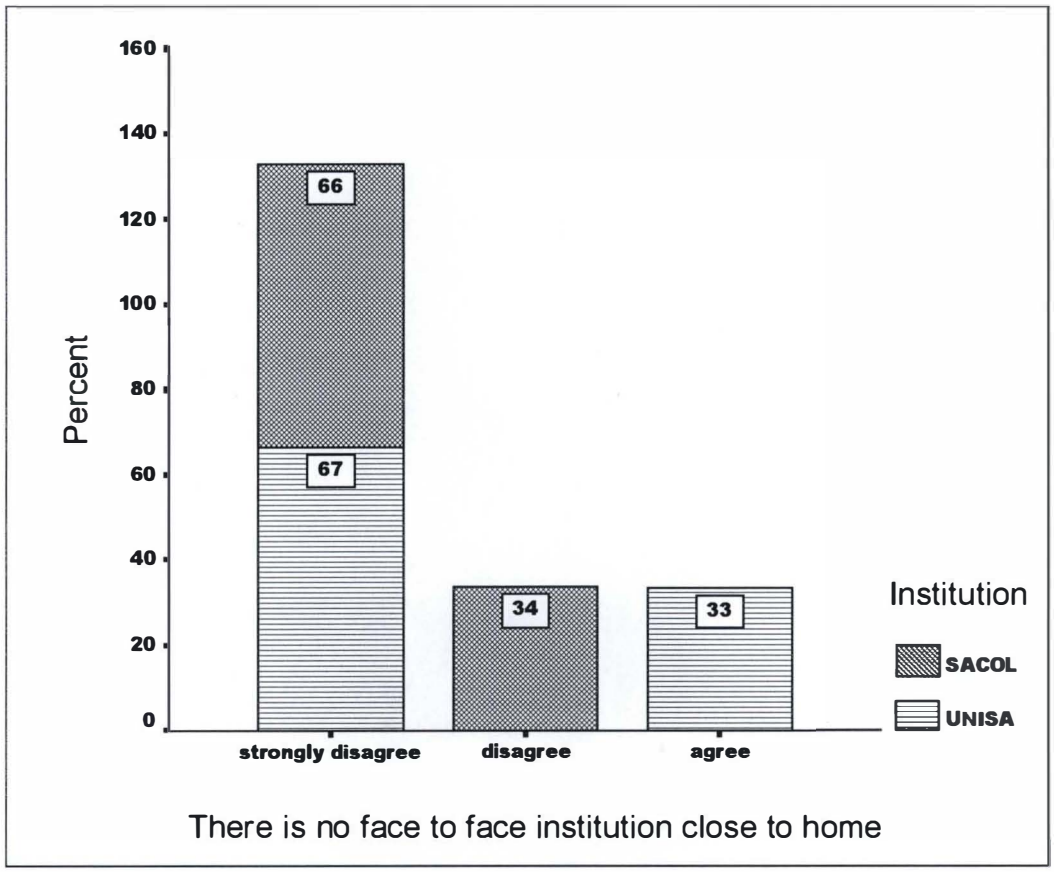

Figure 5.7. : Proximity of face to face institution to place of residence.

The majority of the students from UNISA (67% strongly disagreed) and SACOL (66% strongly disagree and 33% disagree) with the statement that there is no face to face tertiary institution close to their place of residence. These statistics show very clearly that although there are face to face contact universities, colleges and technikons close to their place of residence, students still chose to study at distance education institutions. This proves once again that it is a myth to assume that students study via distance only because they want to overcome the barrier of the physical distance between themselves and their institution of learning.

5.1.10. Flexibility of distance education

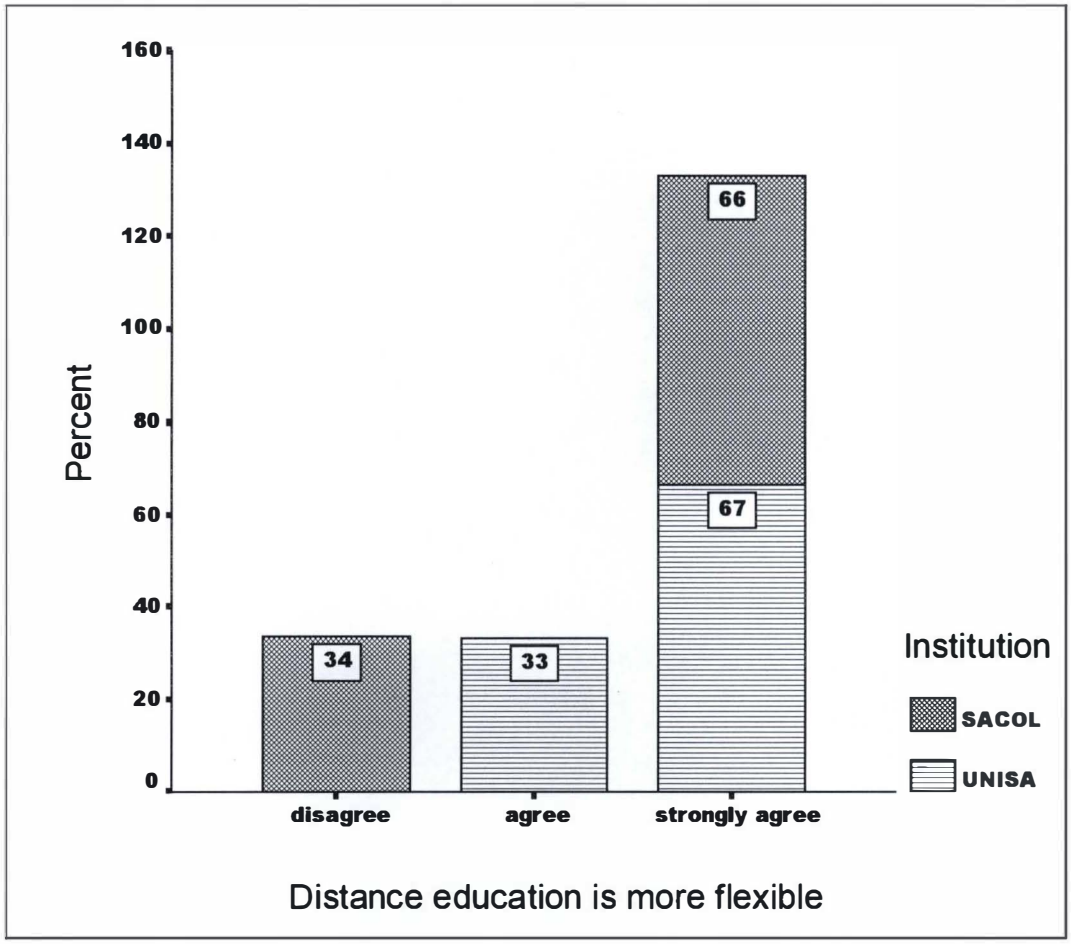

Figure 5.8. : Distance education is more flexible

All of the UNISA students (67% strongly agree and 33% agree) indicated that distance education is a more flexible type of education to pursue. 66% of SACOL students also strongly agreed while 34% disagreed that distance education allows for more flexibility.

5.1.11. I am employed and can only study via distance

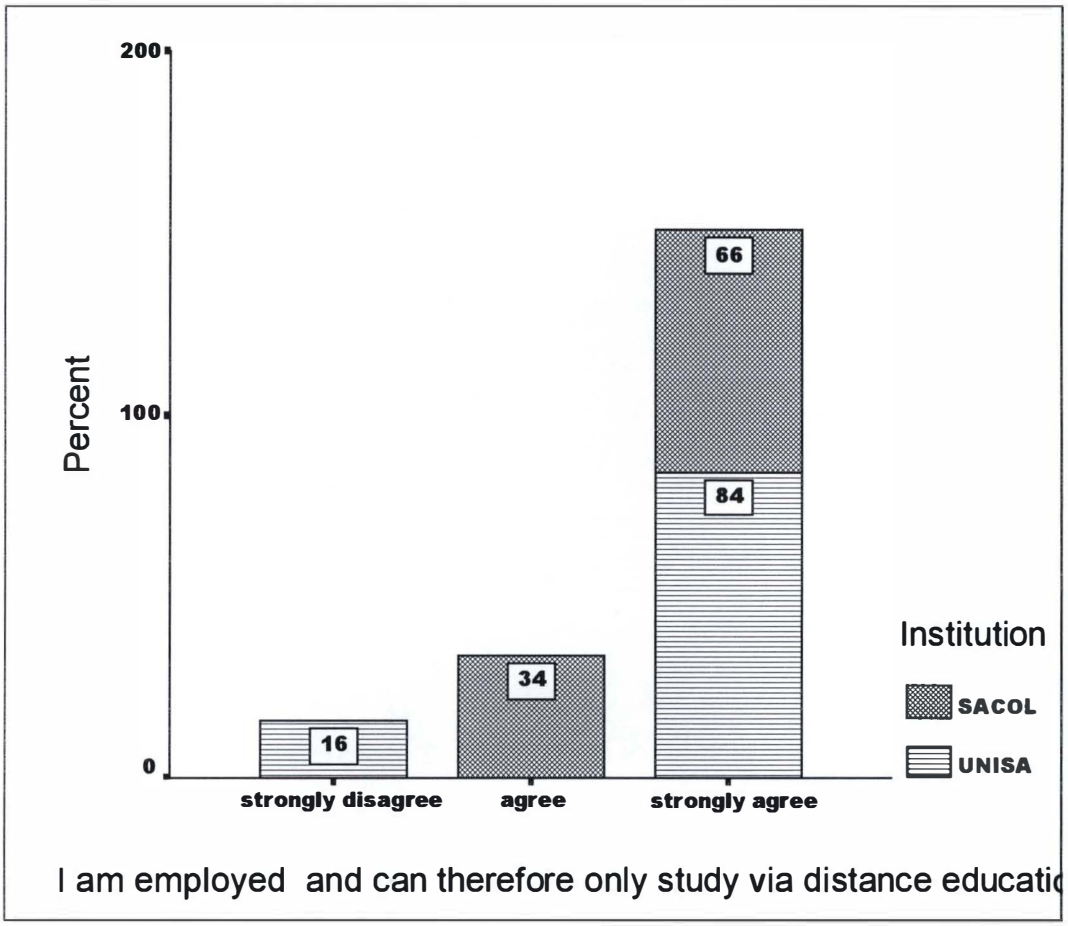

Figure 5.9. : I am employed and can only study via distance

The majority of the students from UNISA (84% strongly agree) and SACOL (66% strongly agree and 34 agree) with the statement that studying via distance was their only option as they are fully employed and do not have the necessary time required to study at face to face contact institutions. 16% of UNISA students strongly disagreed with this statement. There is a strongly possibility that these 16% of UNISA students who strongly disagree are those students who have just completed their matriculation and are thus still unemployed.

5.12. Courses are not offered full time

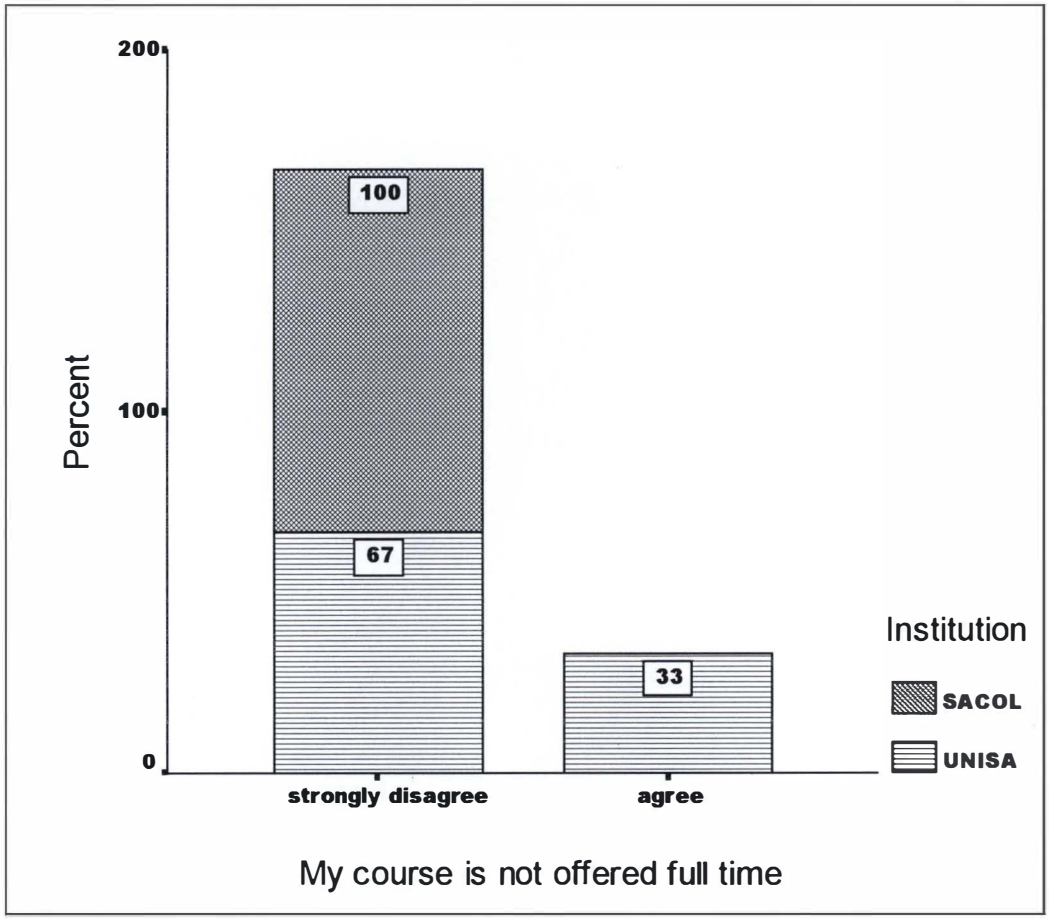

Figure 5.10. : Courses are not offered at full time.

100% of SACOL students strongly agreed with the statement that their courses are not offered at face to face contact institutions. As explained and discussed earlier, SACOL students are in-service students who are busy engaged in upgrading their qualifications. SACOL provides specially designed qualifications aimed at upgrading the qualifications of educators who are already in the teaching profession. 67% of UNISA students strongly disagreed that their courses are not offered at face to face institutions. This proves that distance education is quite competitive and popular as an alternate system of education amongst higher education students in South Africa. 33%

of UNISA students agreed that their course are not offered at face to face institutions. This will hold true especially for courses in nursing, policing, etc.

5.1.13. Summary of research findings: Critical question number one:

How Popular Is Distance Education Amongst Higher Education Students In South Africa?

With regard to critical question number one, this study has concluded that distance education as an alternate system of education is very popular amongst tertiary students in South Africa. In support of the above statement, the researcher provides the following summary of the research findings, namely:

- The study revealed that distance education is popular amongst students between the age group of 18 to over 45 years.
- Distance education as an alternate system of education is popular as it is very flexible and allows for various age groups to study at their leisure
- Distance education as an alternate system of education is popular amongst students that are employed in both the private and public enterprises
- Distance education is convenient because students are in full time employment and as such only have access to studies after hours on a part time basis.
- Many students feel that studying via distance education is a far cheaper than studying at face to face contact institutions.
- Students enroll at UNISA because it is one of the only institutions whose qualifications are recognized internationally.

- Distance education as an alternate system of education appeals and is popular amongst students employed in various sectors/occupations such as banking, nursing, computers, administration, human resources, education and so on.

In conclusion, the researcher quotes statistics provided by Gough (2001) the Head of Media Affairs of UNISA with regard to the popularity of distance education as an alternate system of education.

"Student enrolments at UNISA have increased with 118 168 registered on 1 June, compared to 111 758 at the end of last year. The second semester registrations have not yet been finalized, but indications are that student enrolments have now reached about 130 000.

The June 2001 figures show 51 894 enrolled in the Faculty of Economic and Management Sciences, 26 433 in Arts, 14 933 in Education, 10 163 in Law, 7 050 in Science and 1 145 in the Faculty of Theology and Religious Studies. The remainder are registered for non-degree purposes. The Faculty of Education figures rose before the second semester registrations by about 9 000 which include students from the colleges incorporated into UNISA.

The greatest number of students reside in South Africa (109 383) while there are 6 422 students in other African countries. These include Angola, Botswana, Gabon, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Rwanda, Seychelles, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe. The Americas have 367 students, Asia 514, Europe 1 293 and Oceania 162.

More women than men study at UNISA. Some 66 606 women have enrolled this year compared to 61 174 last year, while men have slightly increased, with 51 562 enrolled compared to 50 584 last year.

UNISA's enrolments dropped for about three years between 1997 and 1999. However, in 2 000 student registrations began increasing again. For the last two years the University has embarked on a strong marketing campaign, both in Southern Africa and other African countries, by way of advertising and exhibitions." Issued By: Doreen Gough, Head: Media Affairs, Unisa, 27 August 2001

5.3. CRITICAL QUESTION TWO

What Is The Type And Quality Of Learner Support Afforded To Distance Education Students In South Africa?

The presentation, analysis and discussion of data gleaned in respect of the above critical question has been obtained from two primary sources, namely students and staff. For the purposes of presentation, analysis and discussion, the issue of quality and type of learner support is discussed under the following three headings, namely:

- Quality and type of study materials (student and staff responses)
- The teaching staff (student and staff responses)

5.2.1. QUALITY AND TYPE OF STUDY MATERIALS

5.2.1.1. Timeous delivery of study materials:

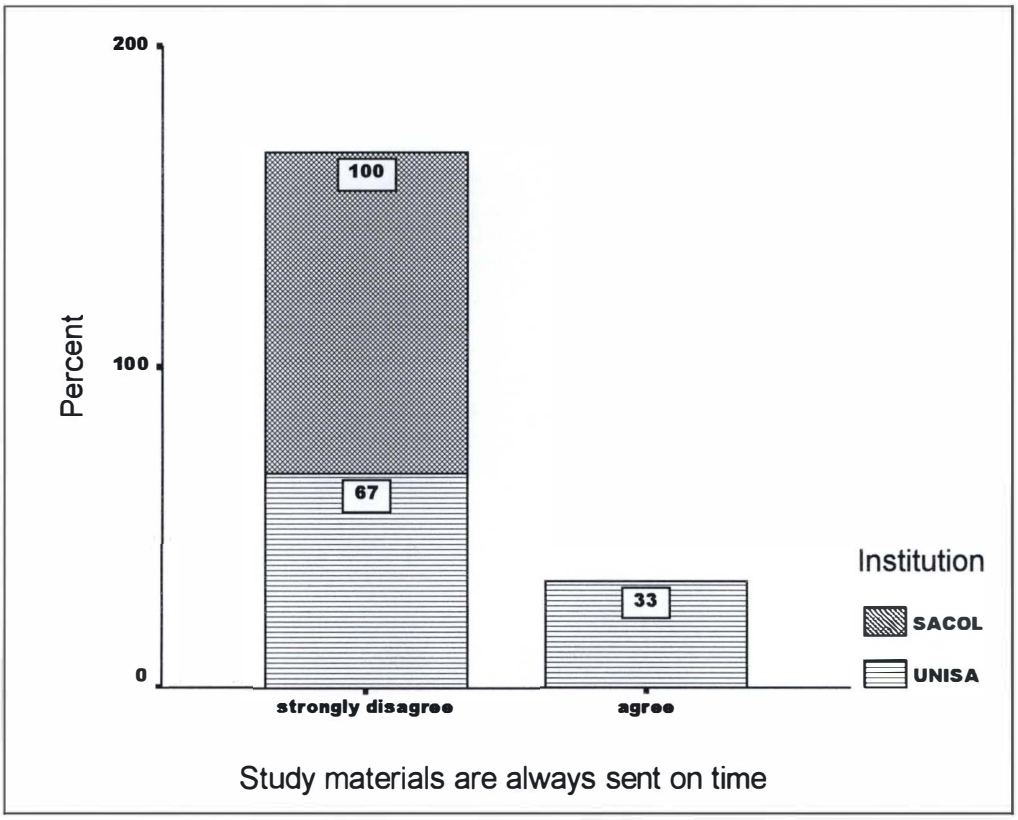

Figure 5.11. : Timeous delivery of study materials

The majority of students (100% SACOL and 67% UNISA) strongly disagreed that their institutions deliver their study materials on time. However 33% of UNISA students indicated that they agree with the statement that UNISA always deliver their study materials timeously. This appears to be a severe indictment on both UNISA and SACOL where the majority of the students concur in stating that they do not receive the study materials/guides/tutorials on time. How can we expect these students to plan their study and work according to a schedule. One can only conclude that the late arrival of study materials are creating serious backlogs in student completion of tasks and assignments. It must be pointed out that distance

education is based on a very strict time on task schedule and students many of whom are employed on a full time basis treasure time. Time is an important if not significant factor in the life of distance students and as such distance education institutions will have to play by the rules of sending study materials expeditiously to students.

5.2.1.2. Study materials are outdated and confusing

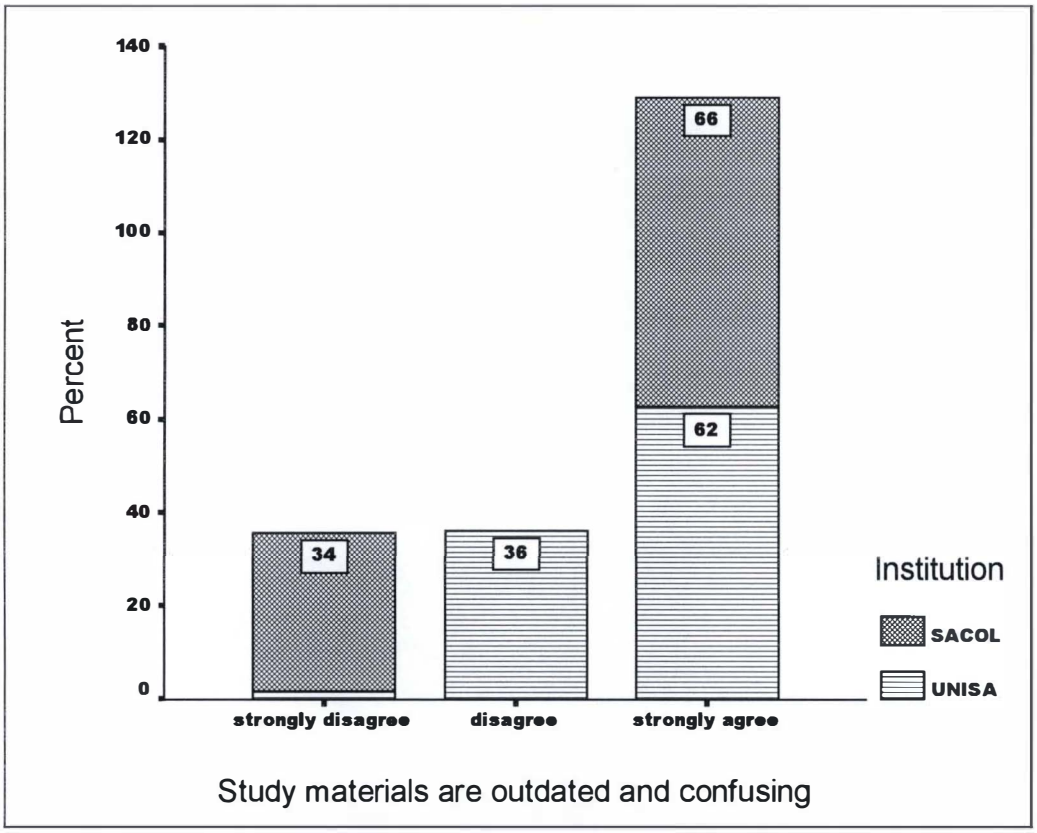

Figure 5.12. : Study materials are outdated and confusing

The majority of the students (66% SACOL and 64% UNISA) strongly agreed that their study materials are outdated and confusing. Of the remaining UNISA students, 34% disagreed and 2% strongly disagreed that their study materials are confusing and outdated. 34% of SACOL students also strongly disagreed that their study materials are confusing and outdated.

It must be pointed out that both UNISA and SACOL depend solely if not to a very large extent on print and correspondence materials as their primary form of instructional delivery. It is thus imperative that all the study materials are clear, unambiguous and easy to understand. The above statistics show that the majority of students are unhappy and not satisfied with the type and quality of the study materials that are sent to them

5.2.1.3. Cost of study materials

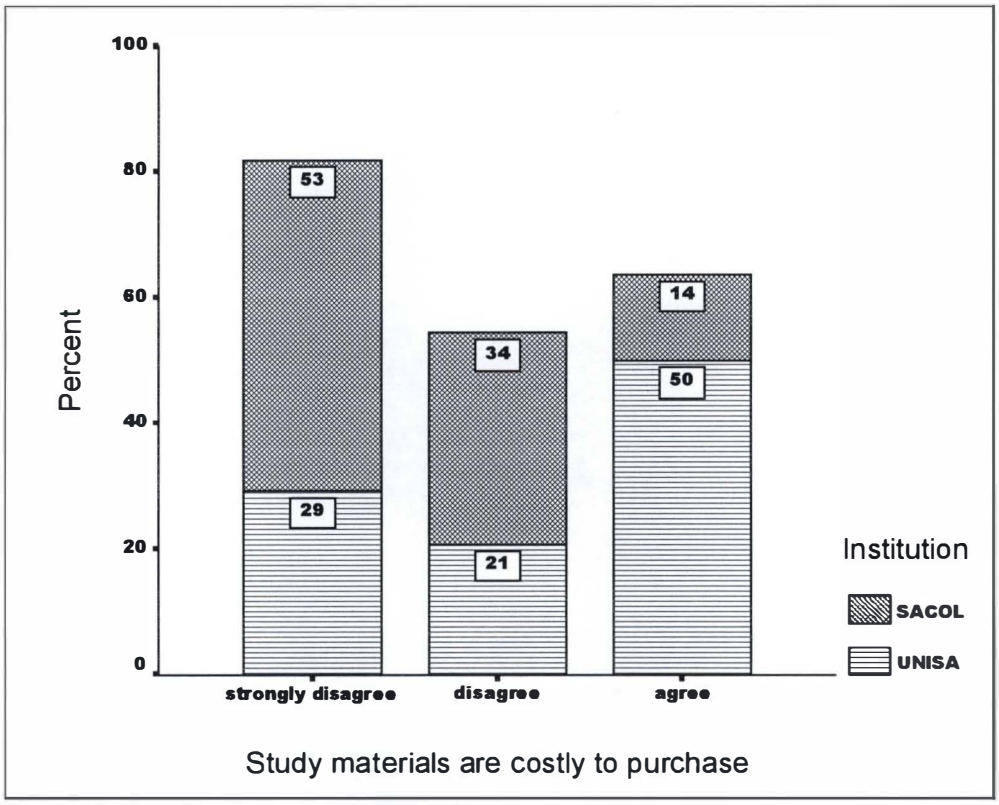

Figure 5.13. : Cost of study materials

The majority (53% strongly disagree and 34% disagree) of SACOL students indicated that their study materials are not costly to purchase. Only 14% of SACOL students felt that their study materials are costly to buy. 50% of UNISA students agreed with the statement that their study materials are costly to purchase while 50% (29% strongly disagreed and 21% disagreed)

5.2.1.4. Study materials are too theoretical

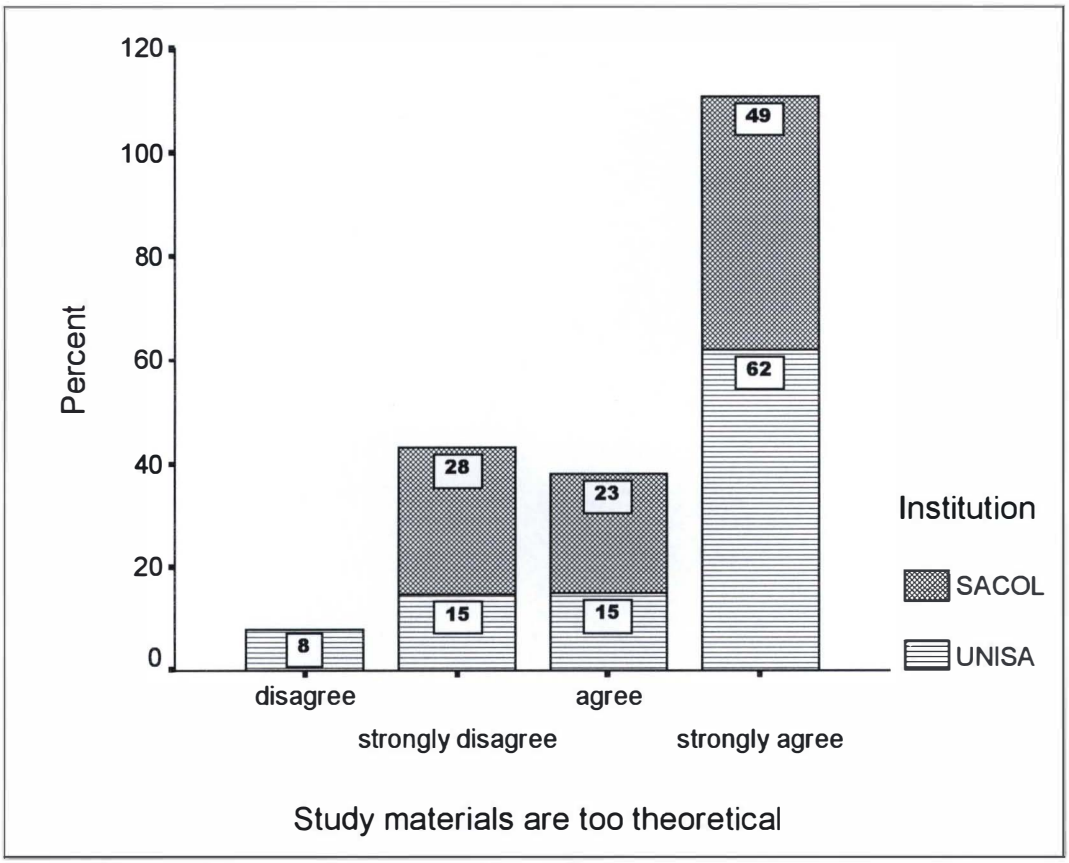

Figure 5.14. : Study materials are too theoretical

The majority of the students either strongly agreed (62% UNISA and 49% SACOL) or agreed (15% UNISA and 23% SACOL) with the statement that their study materials are too theoretical. 8% of UNISA students disagreed while 28% SACOL and 15% UNISA students strongly disagreed with the statement that their study materials are too theoretical.

This study overwhelmingly concludes that, students are generally unhappy and dissatisfied with the extreme theoretical nature of the study materials that are given to them as support for their education. At this point, it is perhaps important to highlight the role of materials development in so far as developing tutorial and study material for students. There is no doubt that study materials for students studying via distance has to be more carefully

structured and developed noting the non-existence of physical contact between the teacher and student.

5.2.1.5. Study materials are unstructured and difficult to understand

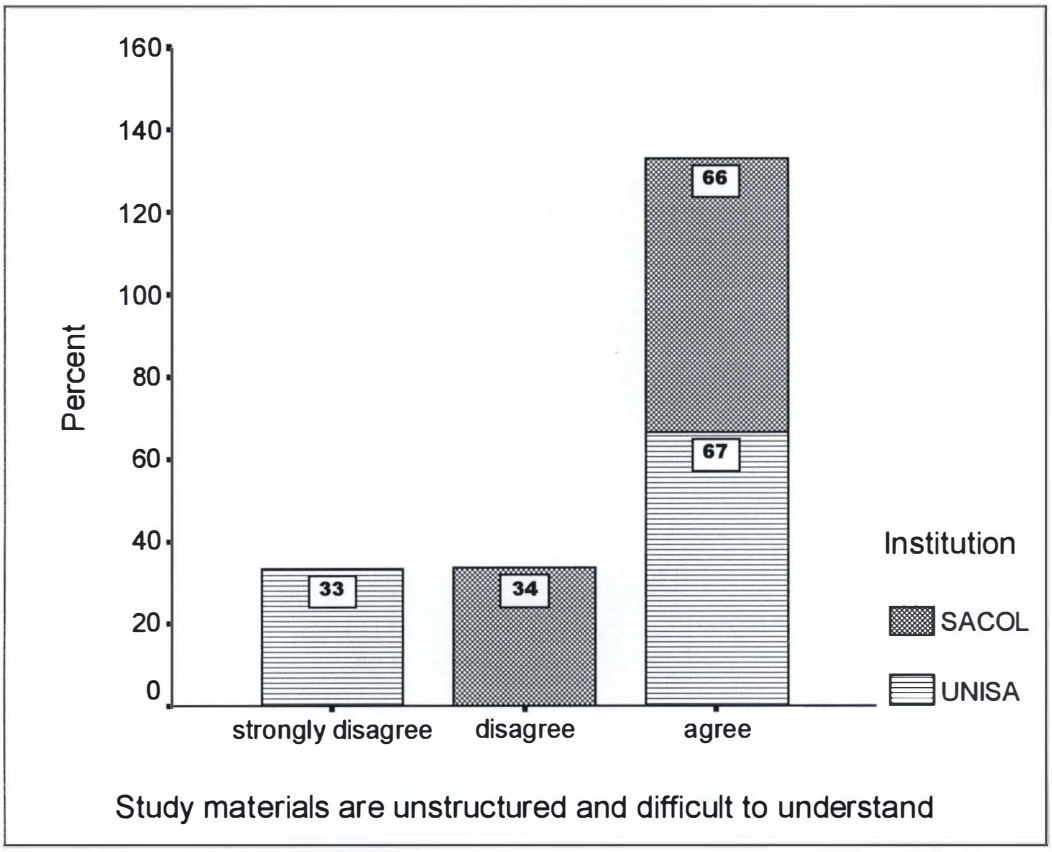

Figure 5.15. : Study materials are unstructured and difficult to understand

The majority of the respondents (66% UNISA and 67% SACOL) agreed with the statement that their study materials were unstructured and difficult to understand. 33% UNISA students strongly disagreed with the statement while 34% SACOL students disagreed with the statement that their study materials are unstructured and difficult to understand.

Once again this study has found that students are not at all content with the quality of study materials that they are given. It is indeed rather disturbing to note the high percentage of students who believe that their study materials are

not structured and highly confusing. Distance education institutions would have to begin to reconceptualize their curriculum and course content, especially noting Outcomes Based Education (OBE) which underscores the principle of life long learning. To engage OBE, learning materials would have to be logical, coherent and have to guide students on how to go about their studies in a meaningful way.

5.2.1.6. Relevance of study material to course outline

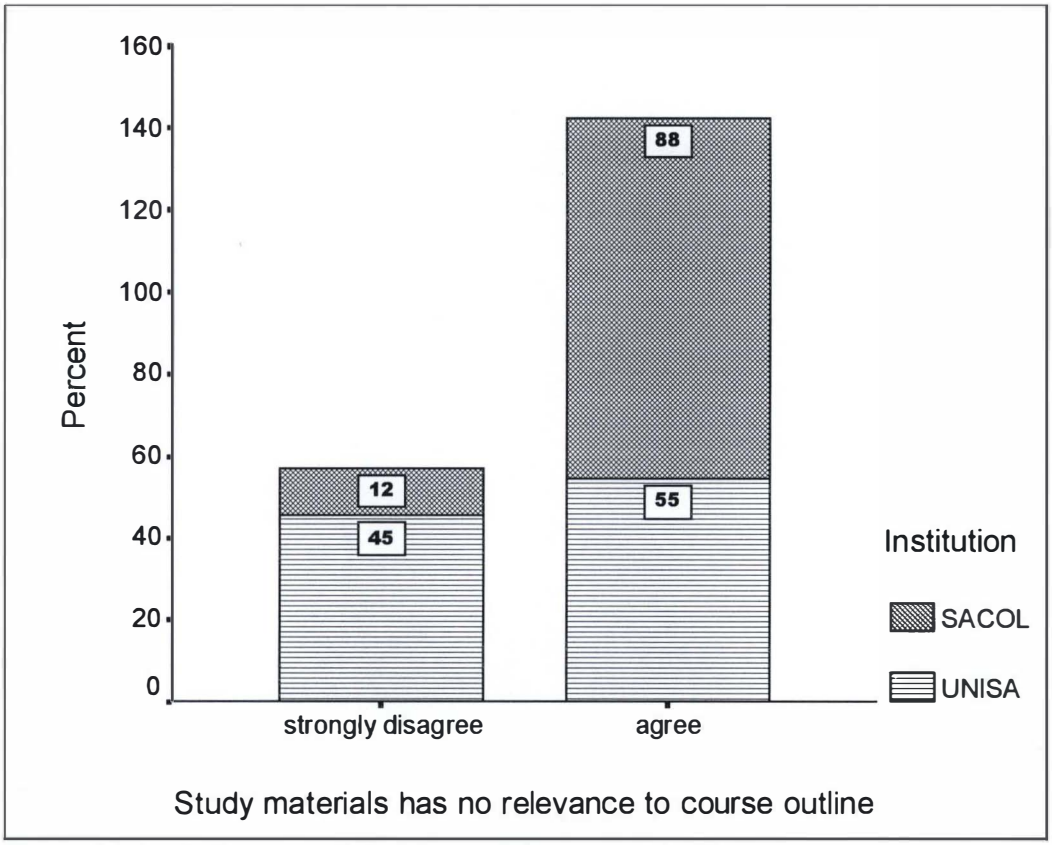

Figure 5.16. : Relevance of study material to course outline

The majority of the respondents (88% SACOL and 55% UNISA) agreed with the statement that their study materials have no relevance to their course outline. 45% UNISA and 12% SACOL students strongly disagreed with the statement.

5.2.1.7. Clarity of concepts in the study materials

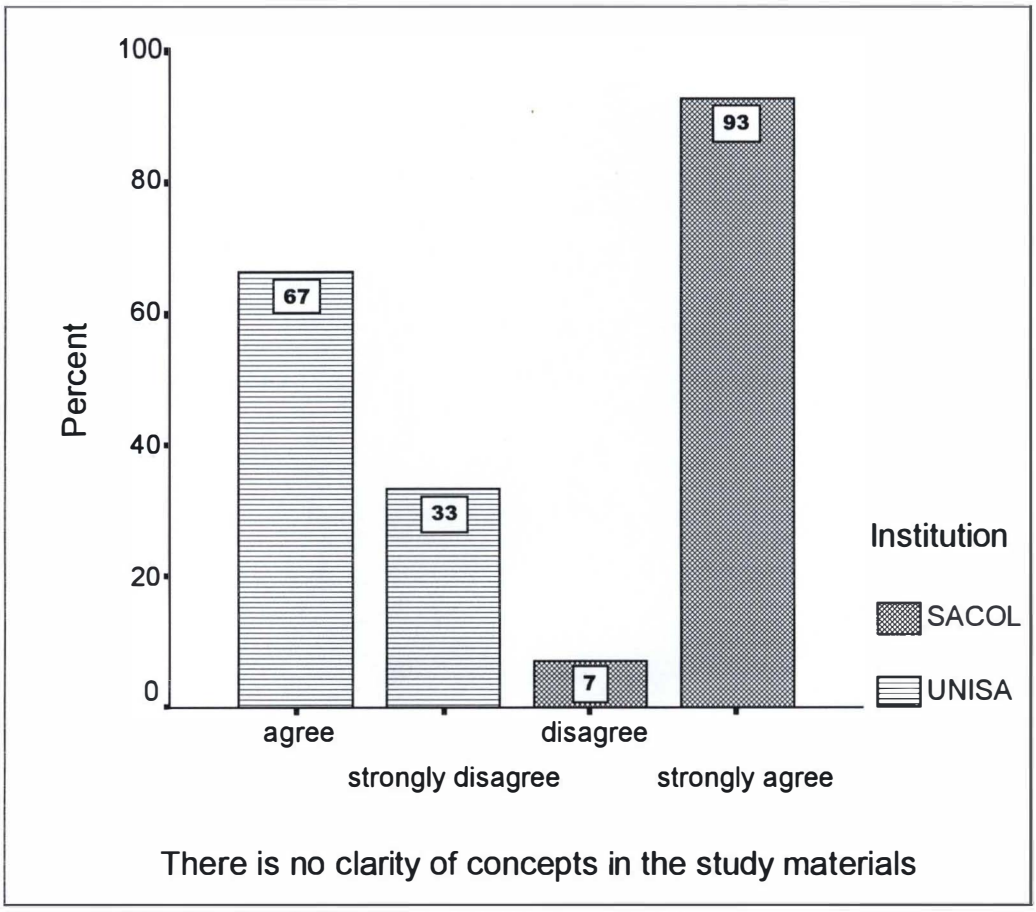

Figure 5.17. : Clarity of concepts in the study materials

The majority of the students (93% SACOL strongly agree and 67% UNISA agree) agreed with the statement that there is no clarity of concepts in the study materials that they receive from their institutions. 7% SACOL students disagreed with the statement while 33% UNISA students strongly disagreed with the statement that there is no clarity of concepts in the study materials that are provided to them in their course of study.

5.2.1.8. Freedom in the design of curricula (staff response)

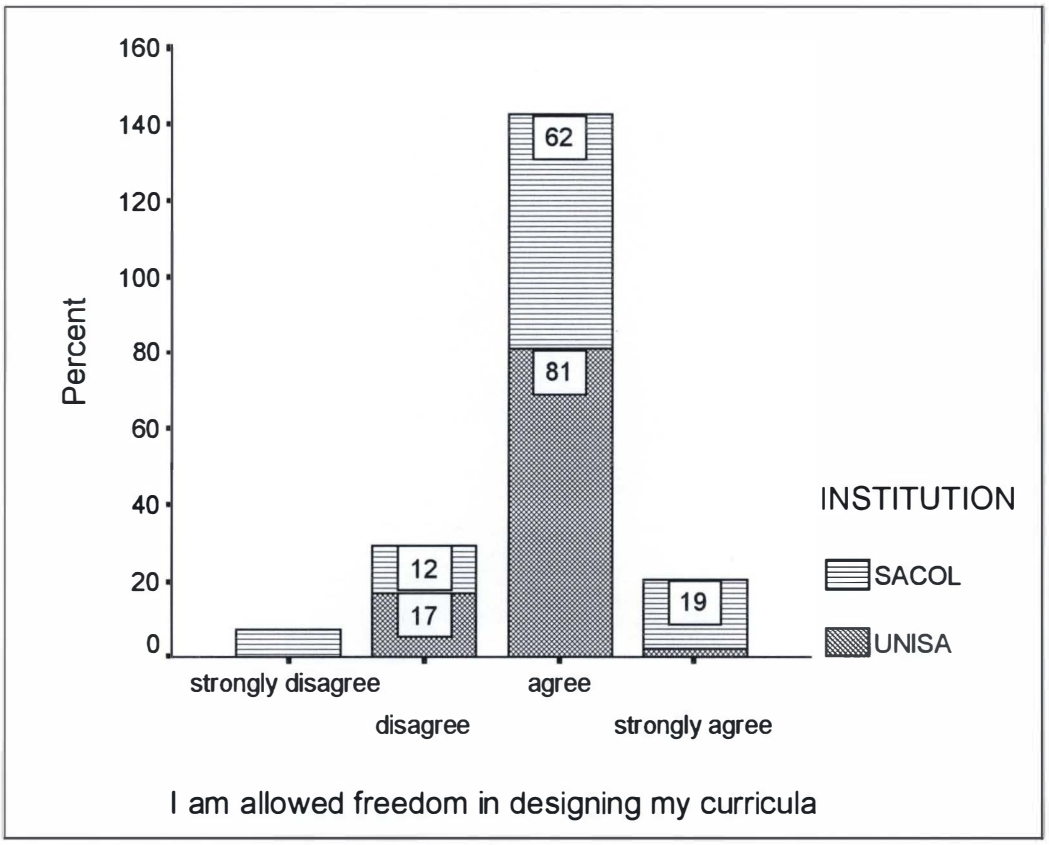

Figure 5.18. : Freedom in the design of curricula

The majority of staff from both UNISA (2% strongly agree and 81% agree) and SACOL (19% strongly agree and 62% agree) that their institution allows them ample freedom in the design of their curricula. 17% of UNISA staff disagreed while 12% disagreed from SACOL. 7% of SACOL staff also strongly disagreed that their institution gives them freedom in the design of their curricula.

With regard to the design of curricula, this study concludes that staff have ample freedom in the design of curricula. However it is most disappointing to note that although the staff have freedom, they are still unable to provide good quality study materials in so far as relevance, easy to read and understand, etc.

While being disappointed, the researcher is quick to point out perhaps, staff are not well trained in the design of curricula.

In designing curricula, Evans (1982) points out that because, print, is largely a one-way communication medium, there is a great challenge to design instruction and to maximize the amount of interaction that distance education print materials ought to provide.

Consideration must be given to:

- Writing style. De Wet and Pienaar (1996) suggests that distance educators write instructional materials with language more like that used for speaking than for writing journal articles or books. Their tips for writing instructional materials include:
    - Use short sentences and avoid compound sentences.
    - Avoid excess information in a sentence.
    - Use the active voice and personal pronouns.
    - Keep equivalent items parallel and list conditions separately.
    - Avoid multiple negatives and thus use point form.
    - Use familiar examples.
    - Avoid unnecessary and difficult words and avoid jargon; use technical terms only when necessary

- Dhanarajan (1996) argues that sentences and paragraphs must be placed into a logical sequence: first things that affect many, then things that affect few; first the general, then the specific; first permanent provisions, then temporary ones

- Dick and Reiser (1989) reminds us to avoid cultural and gender stereotyping
- Dlepu (1991) states that focus must be placed on content organization before developing content. Prior to content development, create an outline of the material to be covered. Print materials are often too wordy because the author is planning, organizing and writing at the same time. Instead, organize content based on the identified goals and objectives. At first, focus on systematically and creatively ordering the flow of topics, not polishing a finished product. The end result will be a well-organized content outline from which the written content will easily flow.

- Developing a course introduction. Driscoll (1994) suggests developing a written course introduction that will be the very first thing a distant student sees. The course introduction can include biographical background information about the instructor, a course overview, course goals and aims, a listing of any textbooks or ancillary learning materials that will be needed, and information about assignments, examinations, and grading.

- Stick with a consistent format. According to Evans (1982), learner anxiety with the unknown can be reduced through consistency in instructional presentation. Develop an effective format and organizational scheme and stick with it. Use adequate headings and subheadings to visually guide the reader through the material.

- Galbraith (1991) suggests the usage of advance organizers. Advance organizers are a means to connect new material with a learner's prior knowledge and cognitive structure. They should be of a more general and abstract character than the learning matter, that follows and help the learner to relate different parts and concepts of teaching material to each

other. Place the most general and comprehensive ideas at the beginning of a lesson and progress to more structured and detailed information.

- Using examples and analogies. According to Jarvis (1995), in a traditional classroom, teachers spontaneously provide examples and analogies to illustrate a point that students are having difficulty understanding. Because distant students and their teachers may not have this type of interaction, include lots of good examples and analogies in print-based materials. He finally reminds us to be sure, however, that these examples address the various cultural groups, ages and experiences of the students.

- Hibbert (1999) asks us to include questions. Questions in print material can stimulate the learner to be more active and to deal more intensively with the learning matter. Use questions that aim at understanding rather than merely reproduction and memorization of facts.

- Adding a table of contents. A detailed table of contents can help the learner to quickly refer to the appropriate section.

- Incorporating a glossary of terms. Rowntree (1997) asks us to include a glossary which summarizes all the new, often technical terminology encountered in a document. It may be helpful to delineate glossary entries in the instructional material by putting them in boldface type.

- Rumble (1989) reminds us of the importance of relevance. Course materials, study guides and workbooks must contain information and guidance that is pertinent to the core syllabi. Avoid far fetched and outdated materials that only takes up space and time. Current up to date information ought to be provided. Always remember that the majority of

distance education students have families, work 12 hours a day and as such they must not be saddled with materials that are irrelevant.

5.2.1.8. Libraries and study centres

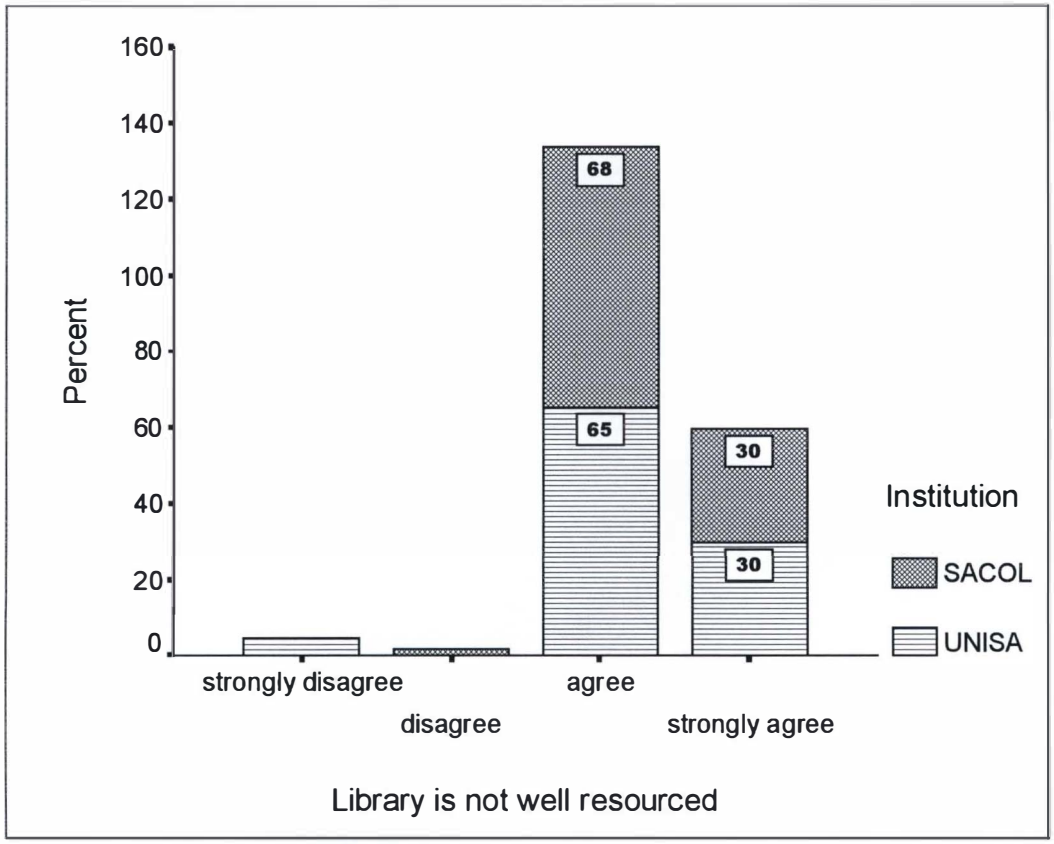

Figure 5.19. : Library and Study Centres

The majority of the students (65% UNISA and 66% SACOL) agreed with the statement that their institution's library and study centre is not well resourced, while 30% UNISA and 30% SACOL strongly agreed with the above statement. 4% of the SACOL students disagreed and 5% UNISA students strongly disagreed with the statement that their institution's library and study centre are not well resourced.

According to Andrew (1990), a study centre should provide the following facilities:

- adequate space for tutorials, group discussion and quiet reading

- a library with basic and course specific reference materials
- office/administrative space for staff
- office/administrative space for learner representatives
- assignment boxes for delivery and receipt of assignments
- sufficient lighting and running water
- recreation space for learners
- facilities to borrow and watch videos and listen to audio tapes
- access to information technology
- provision of information, guidance and counselling to the general public
- access to local guidance, counselling and administrative information, including pre-study advice facilities for taking examinations telephone, fax and email links to the central office
- laboratories for practical work
- storage and collection facilities for study materials.

Bilston (1996) goes onto argue that, in addition to the range of facilities that might be offered, attention should be given to the fact that the study centre should be accessible to learners when they need it, which could imply that it should be open 24 hours a day, 7 days a week and manned by shifts of workers.

It is certainly the case that a study centre that is open only during normal office hours during the week, would not be of much use to the target learners.

It seems clear from the extensive list of needs indicated above that no one institution will be able to set up and sustain a network of study centres that will meet the needs of all learners. The only way to begin to address this need would seem to be for providers to work in partnerships (Brophy and Fisher, 1988).

5.2.2. THE TEACHING STAFF

5.2.2.1. Competency of teaching staff

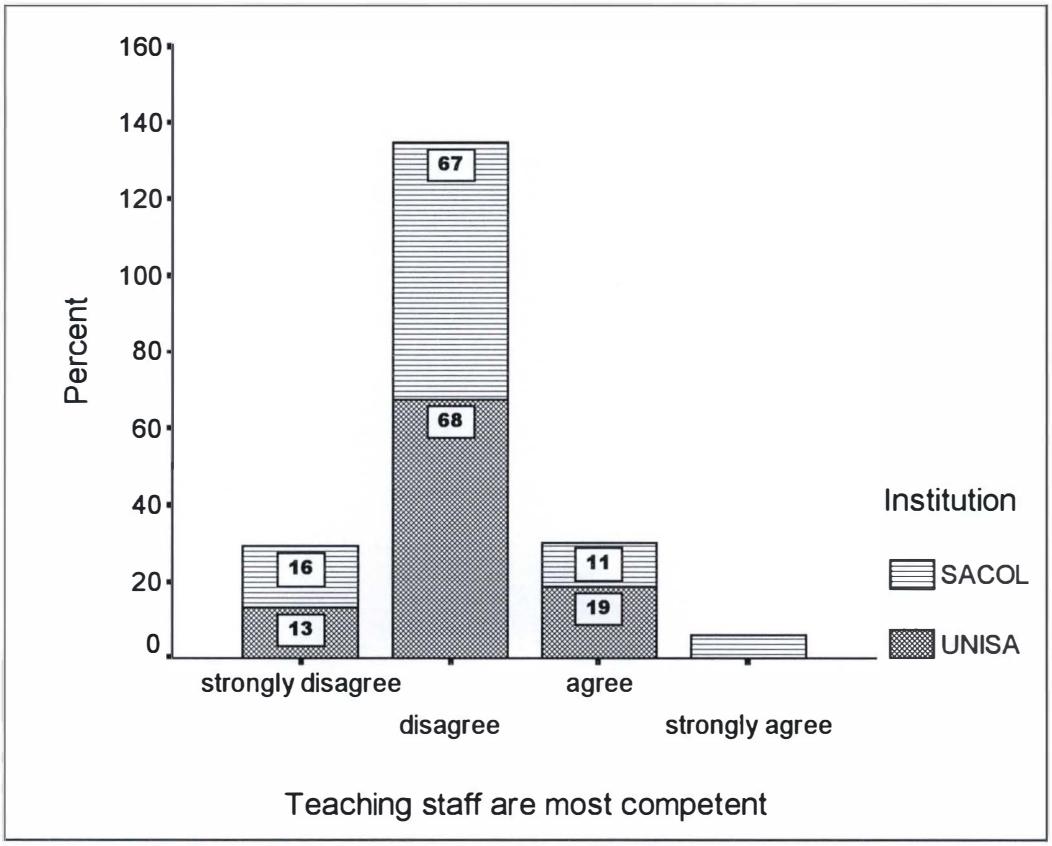

Figure 5.20. : Competency of teaching staff

The majority of the respondents, both from UNISA (68% disagree and 13% strongly disagree) and SACOL (67% disagree and 16% strongly disagree) felt that the staff were mostly incompetent. Only 11% SACOL and 19% UNISA agreed that their staff were most competent. 6% SACOL students strongly agreed that their staff was most competent. The statistics above are most discerning and paints a rather dim picture of how students perceive staff at both institutions. Perception plays a very significant role of how students may relate, interact and perform academically. If they have a low opinion and perception of staff then automatically they will not want to

give in their utmost best (Benjamin, 1990) as they have no confidence in the quality of staff. This appears to be exactly the case at both UNISA and SACOL.

5.2.2.2. Availability of staff for student consultation

5.2.2.2.1. Student response

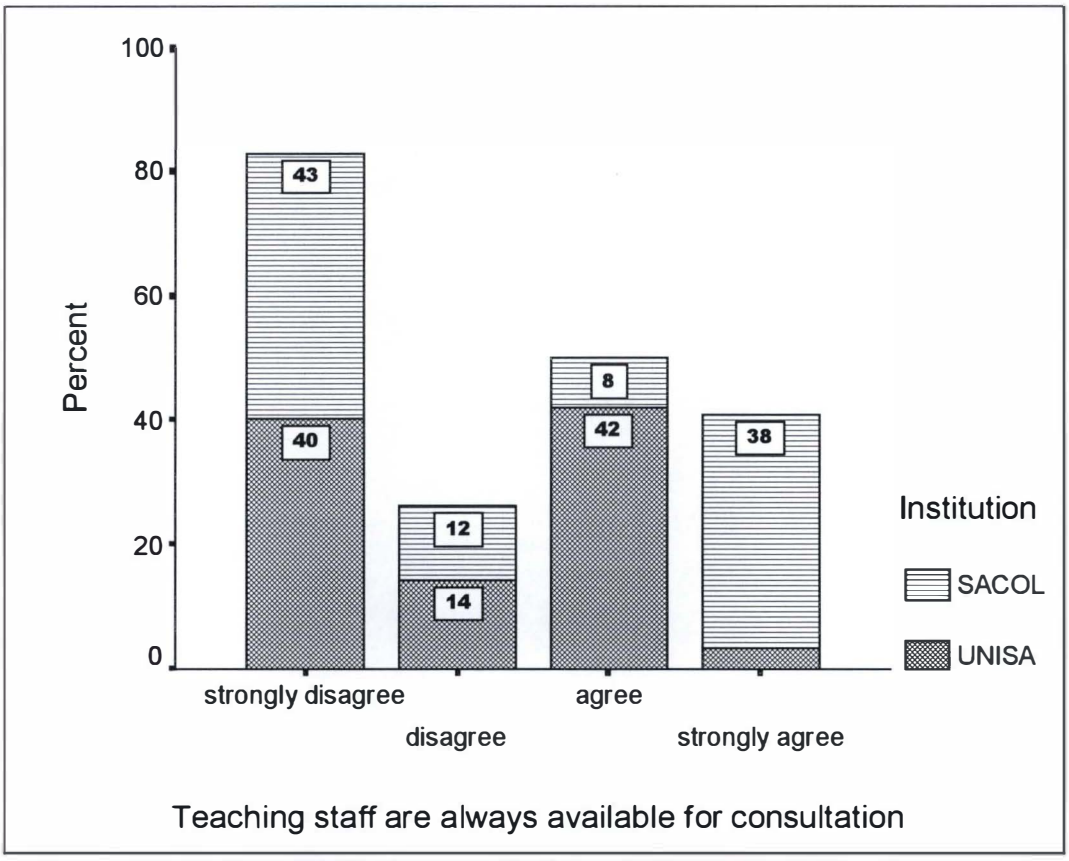

Figure 5.21. : Staff availability for consultation - student response

The majority of students from UNISA (40% strongly disagree and 14% disagree) and SACOL (43% strongly disagree and 12% disagree) that teaching staff are always available for consultation. 38% SACOL and 4% UNISA students strongly agree that staff are always available for student

consultation while 42% UNISA and 8% SACOL strongly agree that teaching staff are always available for consultation.

5.2.2.2.2. Staff response

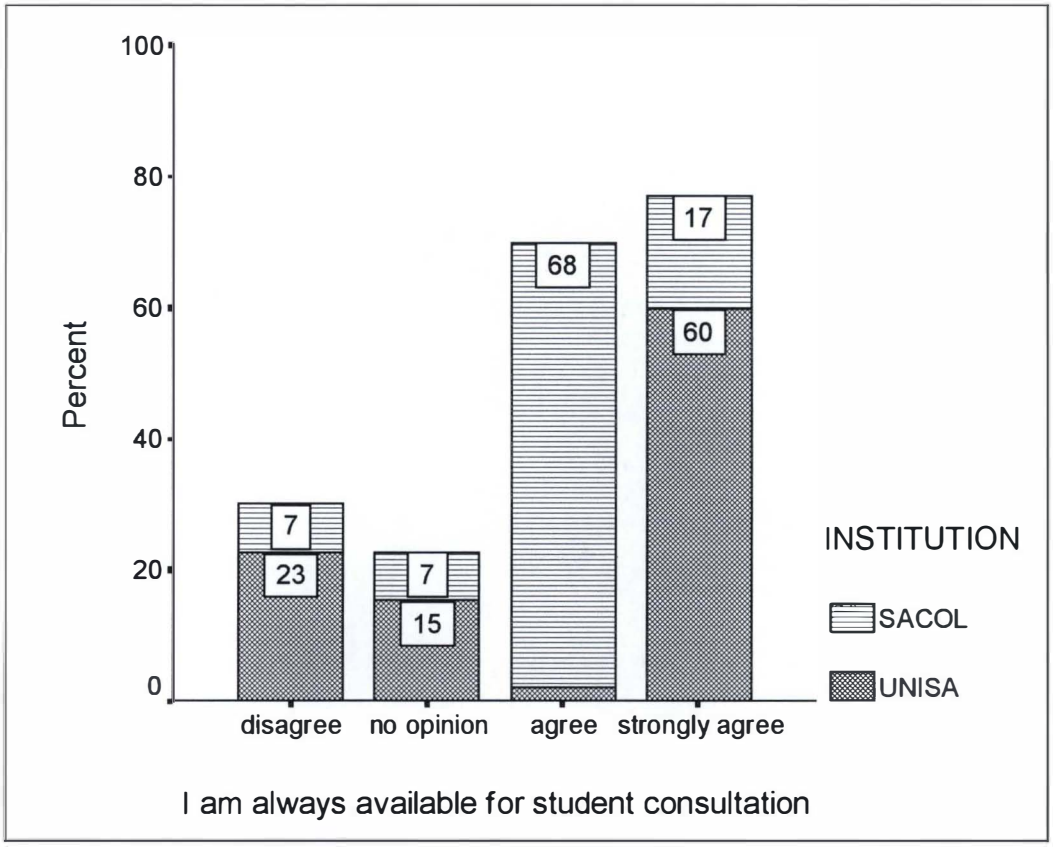

Figure 5.22. : Availability for student consultation

The majority of staff, both from UNISA (60% strongly agree and 2% agree) and SACOL (68% agree and 17% strongly agree) indicated that they are always available for student consultation. 15% of UNISA and 7% of SACOL staff had no opinion on the statement " I am always available for student consultation". 23% UNISA and 7% SACOL staff indicated that they strongly disagree with the above statement.

5.2.2.3. Insufficient time to provide student support

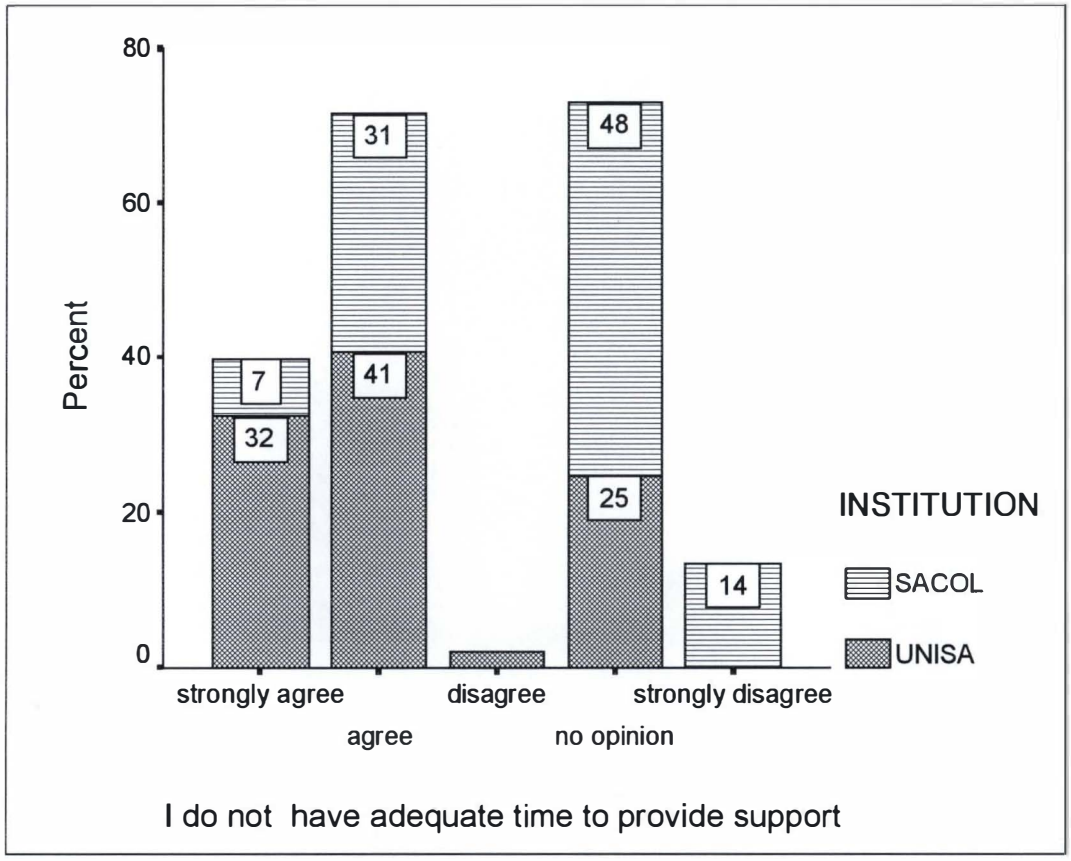

Figure 5.23. : Inadequate time to provide support

The majority of the staff both at UNISA (32% strongly agree and 41% agree) and SACOL (31% agree and 7% strongly agree) felt that they did not have enough time on their hands to provide adequate student support. 48% of SACOL and 25% of UNISA staff had no opinion on the matter of adequate time to offer support to students. 14% of SACOL staff strongly disagreed while 2% of UNISA staff disagreed with the statement that they did not have enough time to offer student support.

The major reason/s for not having enough time to offer student support were as follows:

- too many students enrolled for the course and as such staff are unable to mark all the assignment I time and thereby cannot give the desired support to students.
- Shortage of teaching staff.
- Students do not hand in their work on time and thus marking takes much longer than anticipated.
- Too many administrative duties to handle besides the actual marking and teaching.

The following quotation by a UNISA staff member sums up the issue of inadequate time to offer student support.

" I have 450 students enrolled for my course. I do not have any one else to assist me. I give students three assignments. Each assignment is between 4-5 pages long. How the hell do I mark all these assignments and still have time to offer good quality support to my students. Please....I am also human."

A SACOL member of staff responds as follows " ***Our Department offers 26 different modules. There are two of us, ie. myself and my HOD. My HOD does sweet nothing at all. All he knows is to sign forms. Even admin. duties, I have to do by myself. Why do we have a HOD. Only God knows. I am fed up. We have over 300 students in our department. I keep asking for tutor help, but it falls on deaf years. I am waiting to get out of here".***

Indeed, there appears to be an extreme shortage of staff personnel both at UNISA and SACOL. Voluntary severance packages could have been a contributory factor to the lack of staff. It would appear that distance education institutions would have to seriously consider the employment of more tutors who could be given adequate training to assist core staff. International trends reveal that most distance institutions have a select core of staff and then buy

person power with expertise from time to time in the form of professionals and tutors (Romi, 2000).

5.2.2.4. Type and frequency of student support

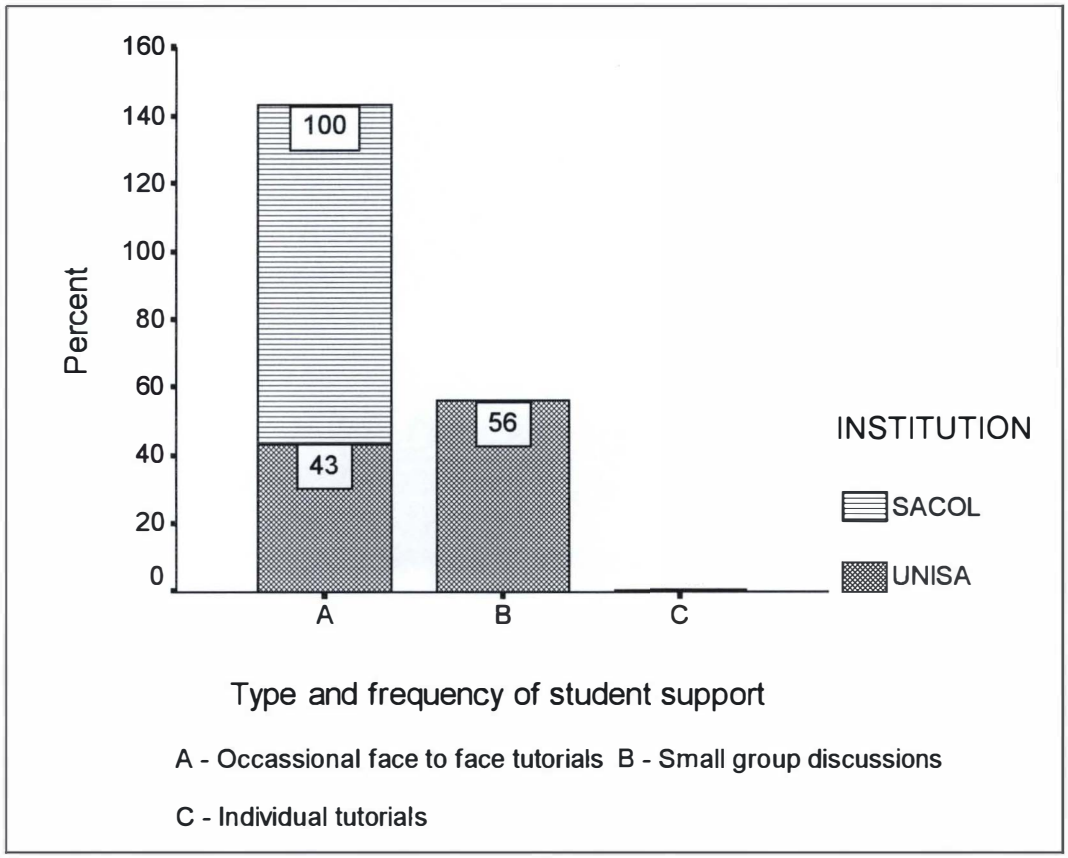

Figure 5.24. : Type and frequency of student support

The graph above shows very clearly that both UNISA and SACOL staff provide a very low level of student support. The support they provide ranges from occasional face to face tutorials (43% UNISA and 100% SACOL), small group discussions (56% UNISA) to individual tutorials (1% UNISA). At the most, the above types of support is offered no more than two times per module. Indeed, there is no question that learner support is sadly lacking at both UNISA and SACOL.

5.2.2.5. More face to face contact should be provided

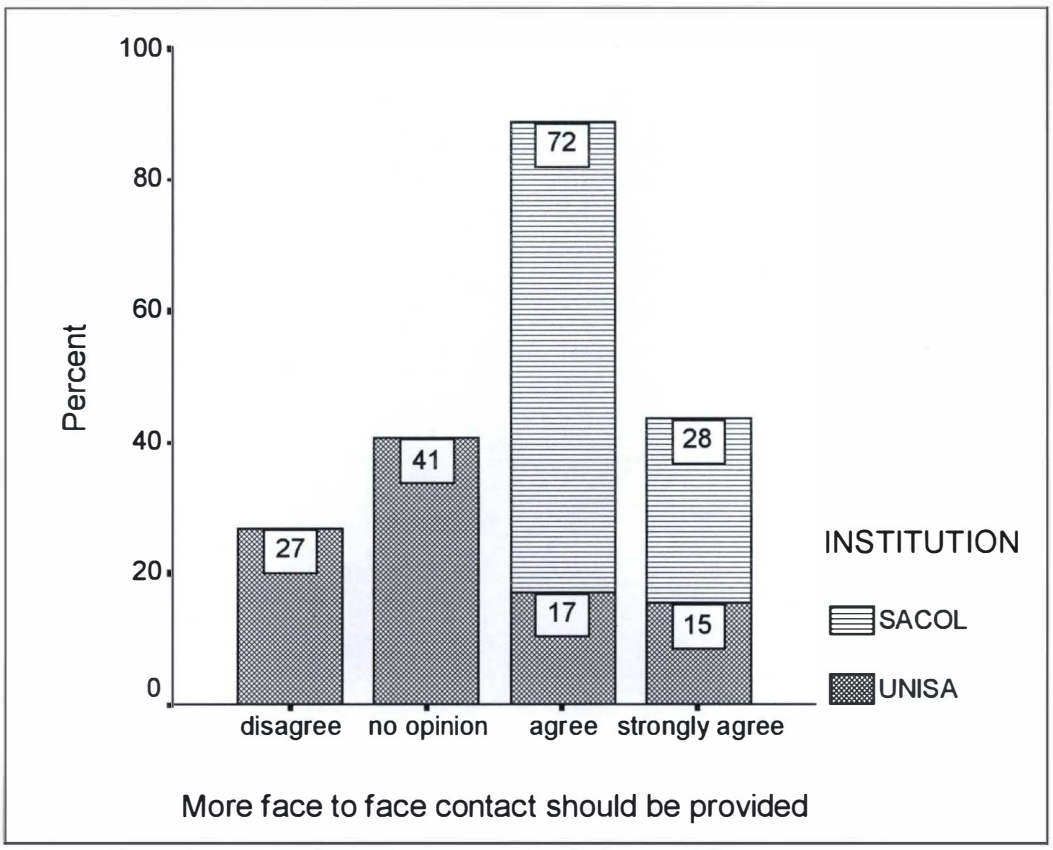

Figure 5.25. : More face to face contact should be provided

41% of UNISA staff had no opinion on the statement that " More face to face contact sessions should be provided to students.17% of UNISA staff agreed while 15% strongly agreed with the above statement. 27% of UNISA staff disagreed that more face to face contact sessions should be provided. 72% of SACOL staff agreed while 28% strongly agreed. The above statistics indicate that all SACOL staff was in full agreement that more face to face contact sessions should be afforded to students. UNISA staff were divided on the issue of providing more face to face contact sessions to students. One of the major factors that have influenced UNISA staff could be that they are severely understaffed and as such they are unable to provided more face to face contact sessions in all of their study centres located in the various provinces. Whatever the case might be, there is strong and ample evidence

that suggest there must be a good percentage of contact and face to face sessions in distance education to achieve the desired success of distance education as a whole. It must also be pointed out that the levels of technology employed within the distance education institutions in South Africa are at a very low level and thus institutions ought to rely more heavily on providing an increased number of face to face contact sessions to students.

5.2.2.6. Helpfulness of teaching staff

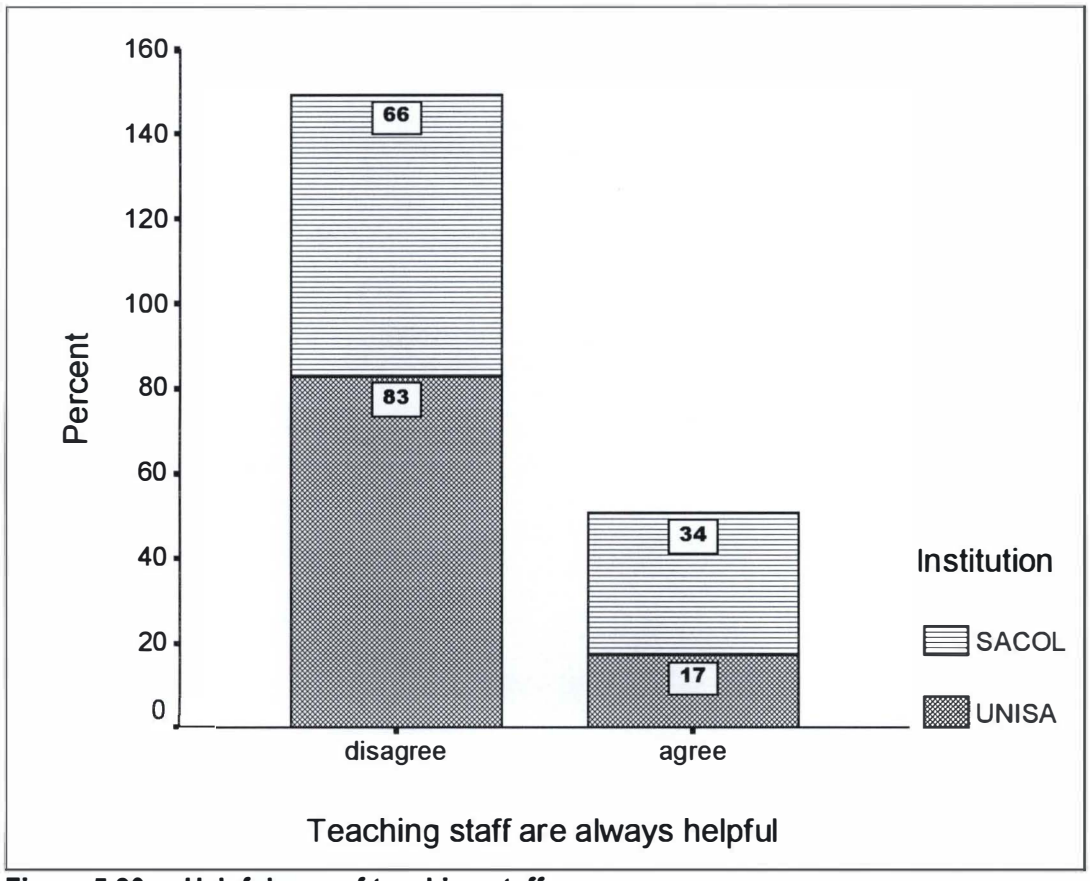

Figure 5.26. : Helpfulness of teaching staff

The majority of the students both from UNISA (83%) and SACOL (66%) disagreed with the statement " Teaching staff are always helpful". 17% UNISA and 34% SACOL students agreed that their teaching staff was always helpful to them. Indeed, it is a very poor reflection on the staff of both UNISA and SACOL. Students overwhelming felt that the teaching staff was

not helpful and this ties up very closely with earlier statements where the majority of students also felt that teaching staff were unsympathetic to their needs, teaching staff are never around to attend to student queries and feedback, etc.

5.2.2.7. Student approach for staff support

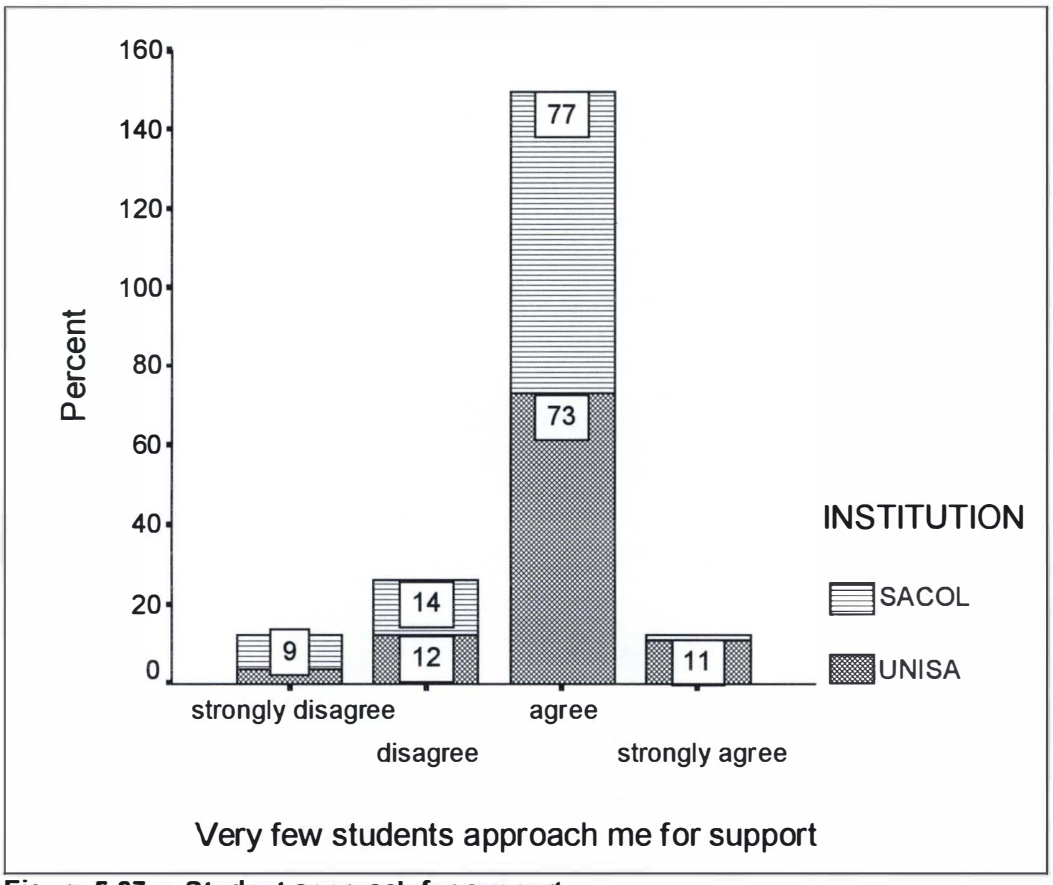

Figure 5.27. : Student approach for support

The majority of staff (78% SACOL and 73% UNISA) agreed with the statement that very few students approach them for necessary support. 11% of UNISA staff also strongly agreed with the above statement. 14% SACOL and 12% UNISA staff disagreed while and 9% SACOL and 4% UNISA staff strongly disagreed that very few students approach them for support. These statistics appear to resonate with the findings mentioned earlier on where

students overwhelmingly stated that staff is unhelpful, unsympathetic and always unavailable to them in times of queries and requests for feedback.

5.2.2.8. Teaching staff are unsympathetic

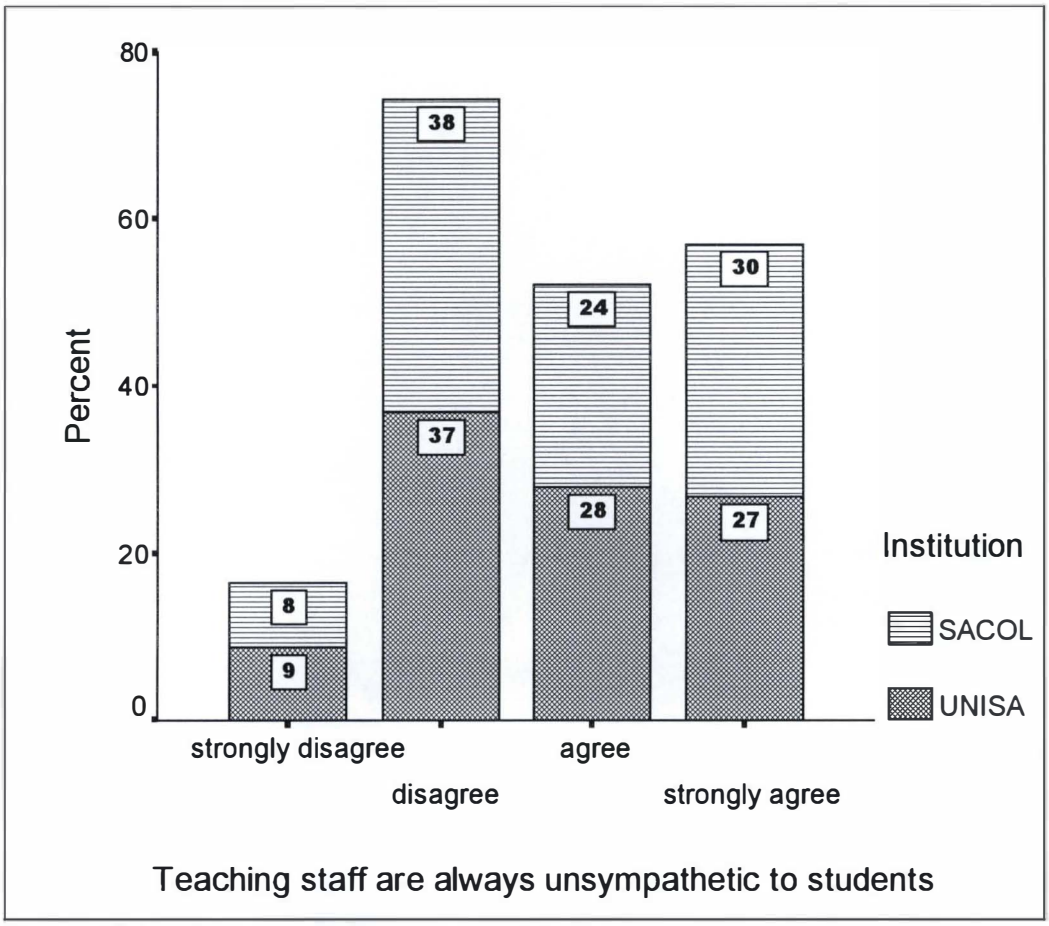

Figure 5.28. : Teaching staff are unsympathetic

30% SACOL and 27% UNISA students strongly agreed that the teaching staff are unsympathetic towards them while 28% UNISA and 24% SACOL agreed with this statement. These statistics indicate that the majority of students feel that their teaching staff at both institutions are unsympathetic towards them. 37% UNISA and 38% SACOL students disagreed while 9% of UNISA and 8% of SACOL students strongly disagreed that their teachings staff were unsympathetic towards them.

5.2.2.9. Teaching staff are unknown

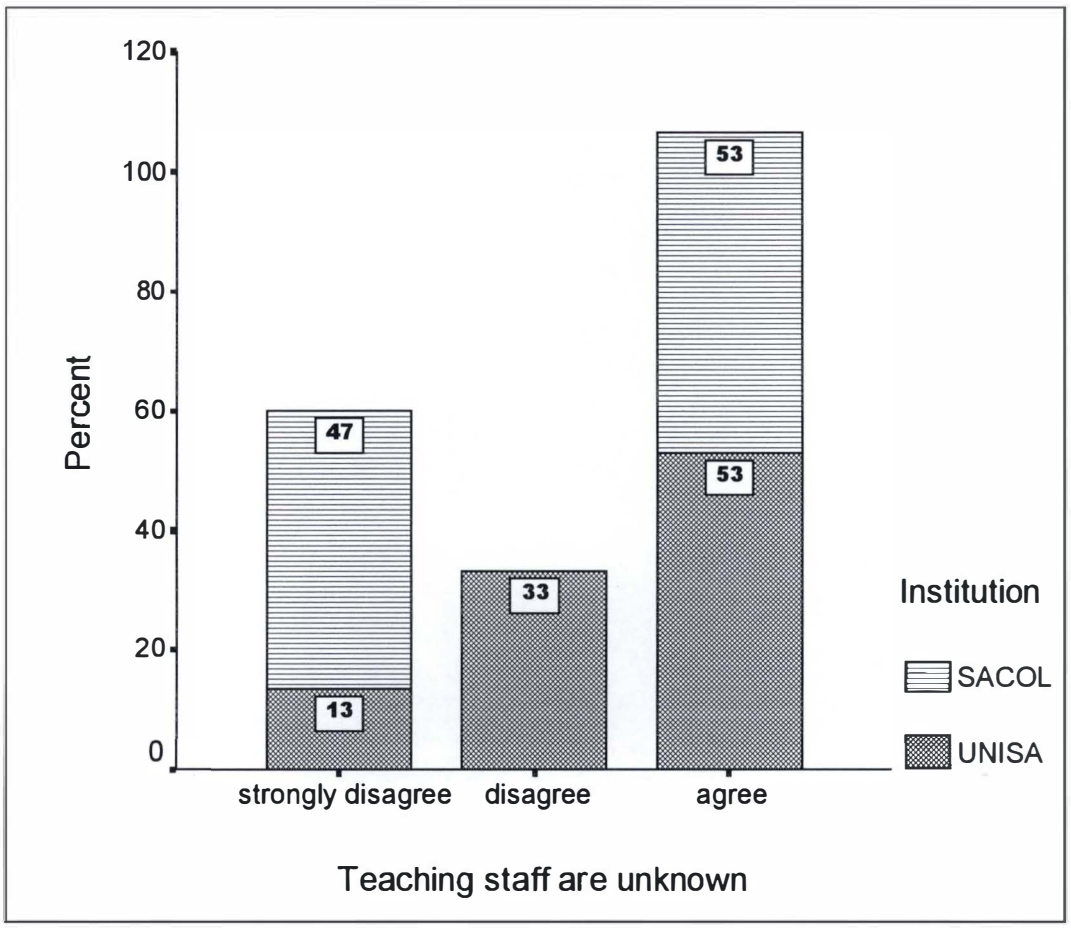

Figure 5.29. : Teaching staff are unknown

The majority of the respondents from both UNISA (53%) and SACOL (53%) agreed that their teaching staff are unknown. 33% of UNISA students disagreed while 13% strongly disagreed that their teaching staff are unknown. 47% of SACOL students also strongly disagreed that their teaching staff are unknown. It must be pointed out that to build trust and confidence amongst distance education students there must be mechanisms in place that ensures a very strong component of interaction between both staff and students. To achieve this staff must make themselves known to students. This could be done using various means, such as:

- A flyer outlining the portfolio and brief biographical details to students
- Meeting students face to face at a pre-arranged contact session.
- Posting ones photograph with all the relevant details on the Internet

The above is not an exhaustive list but merely serves as a way forward towards making staff known to students. Students may only approach staff if they know them personally.

5.2.2.10. The type and quality of Feedback after assignments and queries

5.2.2.10.1. Student response

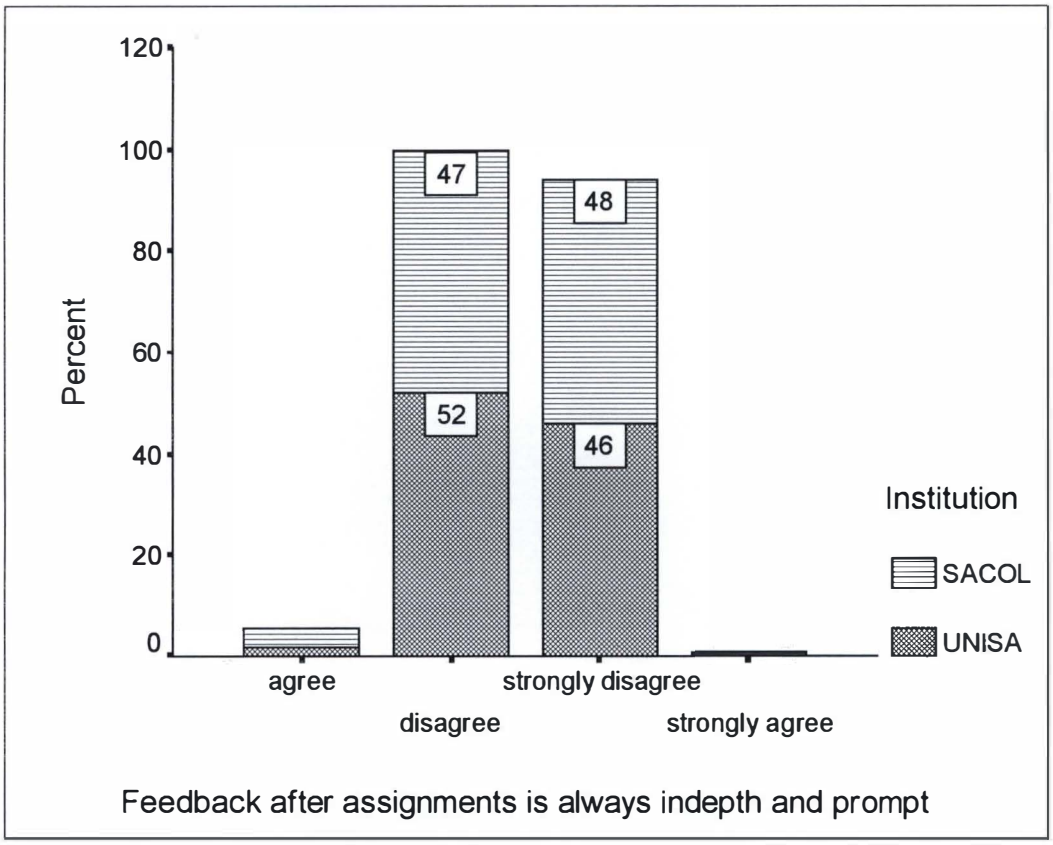

Figure 5.30. : Type and quality of feedback - student response

The majority of students both from SACOL (48% strongly disagree and 47% disagree) and UNISA (46 strongly disagree and 52% disagree) felt that the type of feedback received from staff is not always in-depth and prompt. Only 2% of UNISA and 4% of SACOL students agreed that feedback is always prompt and in-depth. 1% of SACOL students strongly agreed that their feedback from staff was always prompt and in-depth.

5.2.2.10.2 Staff response

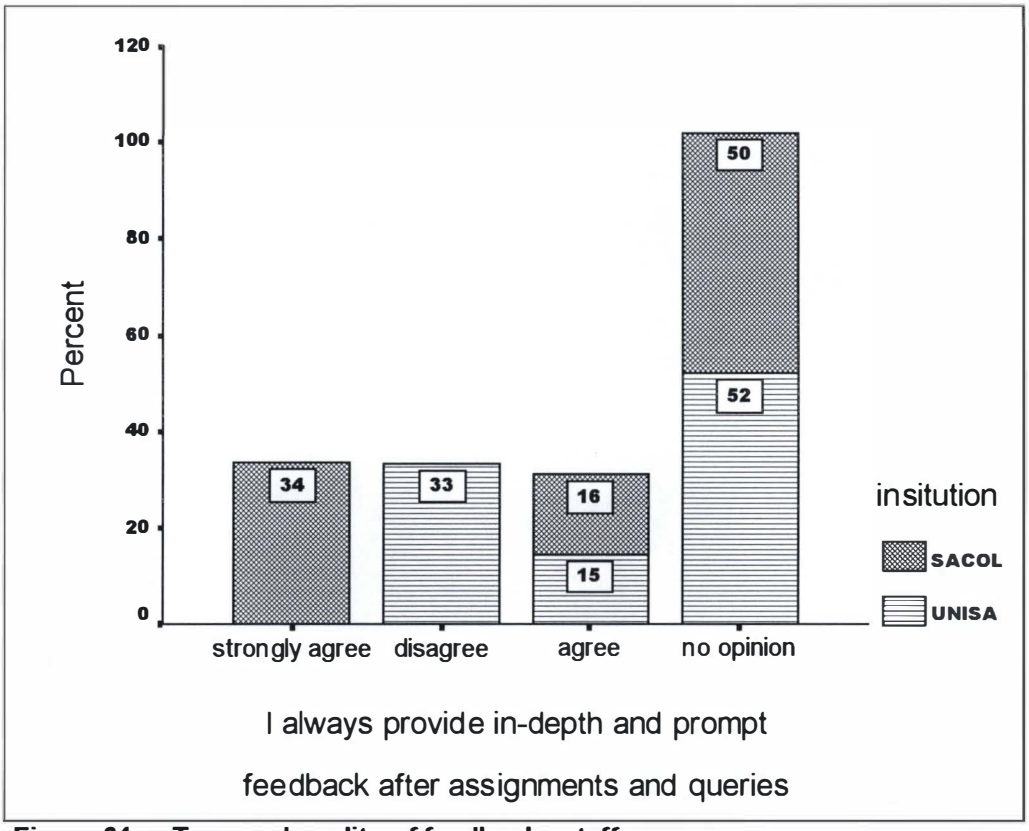

Figure 31. : Type and quality of feedback - staff response

The majority (52% UNISA and 50% SACOL) of the respondents had no opinion on the type and quality of feedback that they afforded their students. 15% of UNISA and 16% of SACOL staff indicated that they agreed with the statement

This study reveals that feedback on assignments and queries is an important form of learner support. A turnaround time of one month or less and substantive feedback must be designed to:

- show learners where they went wrong
- help with further study and
- encourage and motivate students to do better the next time

It is important for most learners that the institution makes provision for interaction between tutors and learners on assignment preparation and feedback and this is could be carried forward as an important feature of contact sessions.

According to Ravhudzulo (1997), the quality of feedback on assignments is an important indicator of their usefulness but not all institutions provide tutors with formal training or guidelines on how to use feedback on assignments as a teaching tool. In addition, few institutions have a formalized process of quality control (Rebel, 1987) for assignment marking, which seems otherwise to be left largely to the discretion of the individual tutors concerned.

Mays (2000) found that very few learners have had experience of quality feedback, and thus most seemed content with the service and more interested in the marks awarded. However, some learners are clearly aware of what can be done as illustrated in the following comment from a learner:

"With feedback I get for my assignments, I can not get any further because if I got 50% there is no elaboration on how to improve. I sometimes think of scoring up to 80% but I can not get that mark because feedback is not structured and is generally not in detail."

According to the Report for the National Audit (1995), staff and tutors offering feedback need to walk a fine line between not offering enough feedback for learners to be able to see how they can improve, and offering so much feedback that the learner is discouraged. This fine line can be managed well if staff, tutors and learners have the opportunity for interaction on the assignment both before and after it has been written.

The following is a list of useful indicators for good practice in terms of feedback:

- Parsons (1994) underscores the importance of clarity on the purpose of an assignment, the marking process, assessment criteria and the purpose of feedback the opportunity to resubmit once the learner fully understands what is required the importance of providing a mechanism for learners to respond to feedback.

- Murgatroyd (1980) states that efficient and professional administration of assignments is as important as the quality of feedback provided.

- Schieman (1990) indicates the need for learners to receive feedback on one form of assessment before they submit the next or write a related test, otherwise they have no opportunity to effect improvements.

- According to Sewart, et al. (1983), a learner's individual performance is a confidential matter between learners and the institution and support staff working with assignments need to be trained to respect this confidentiality.

The above requirements indicate the need for careful planning and monitoring of the assignment handling process and the need for deadlines for various aspects of the process. In this regard:

- Sallies (1993) asks us to allow for some compromise between efficiency and deadlines and openness and flexibility, institutions should give consideration to providing for extra-ordinary forms of assessment where learners have valid reasons for missing deadlines.
- Weedon (1997) states that one needs to encourage a formative approach to assessment, institutions might experiment with a model of optional and compulsory assignments or a model of feedback, interaction and resubmission.

5.2.2.11. Staff bias

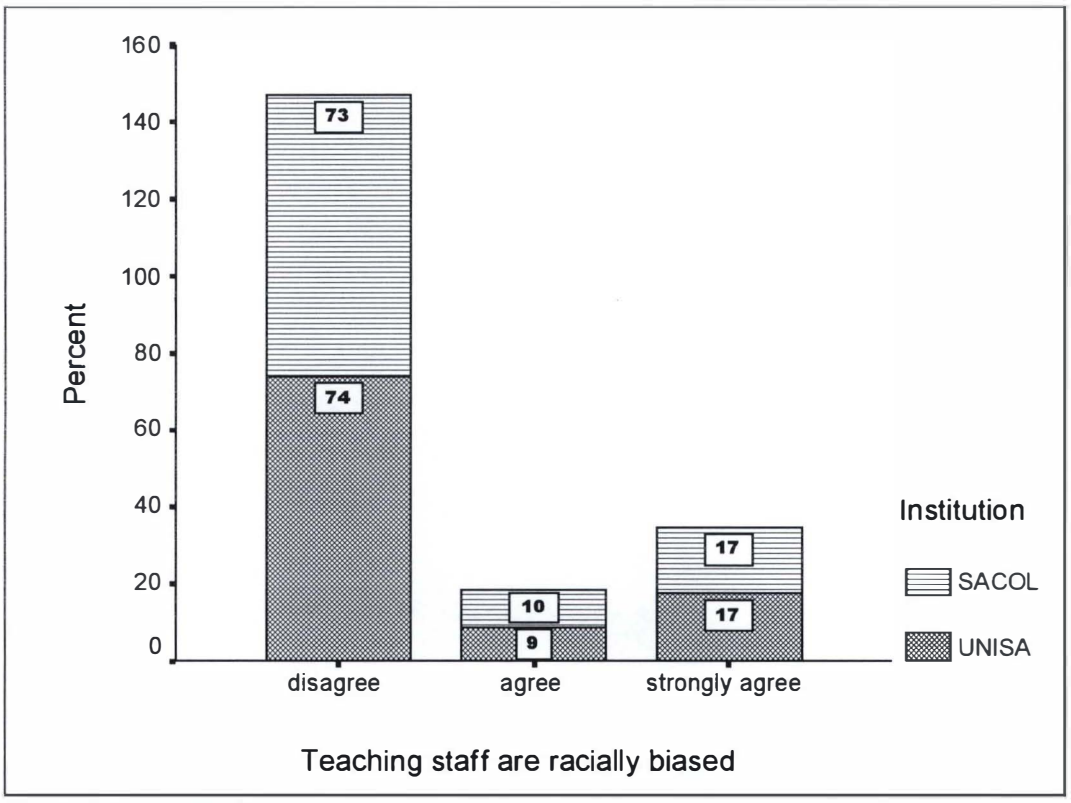

Figure 5.32. : Staff bias

The majority (UNISA - 74% disagree and 17 % strongly disagree, SACOL - 73% disagree and 17 % strongly disagree) of the respondents indicated that the teaching staff was not racially biased towards them. 10% SACOL and 9% UNISA students felt that the teaching staff was racially biased towards them.

Indeed, it was most pleasing to note that the overwhelming majority of the respondents felt that teaching staff was not racially biased towards them. South Africa is a young and fledging democracy and most of its tertiary institutions were developed historically along racial lines and is good to notice that no forms of racial bias exists in terms of attitudes and perceptions of students.

5.2.2.12. Interaction between staff and students

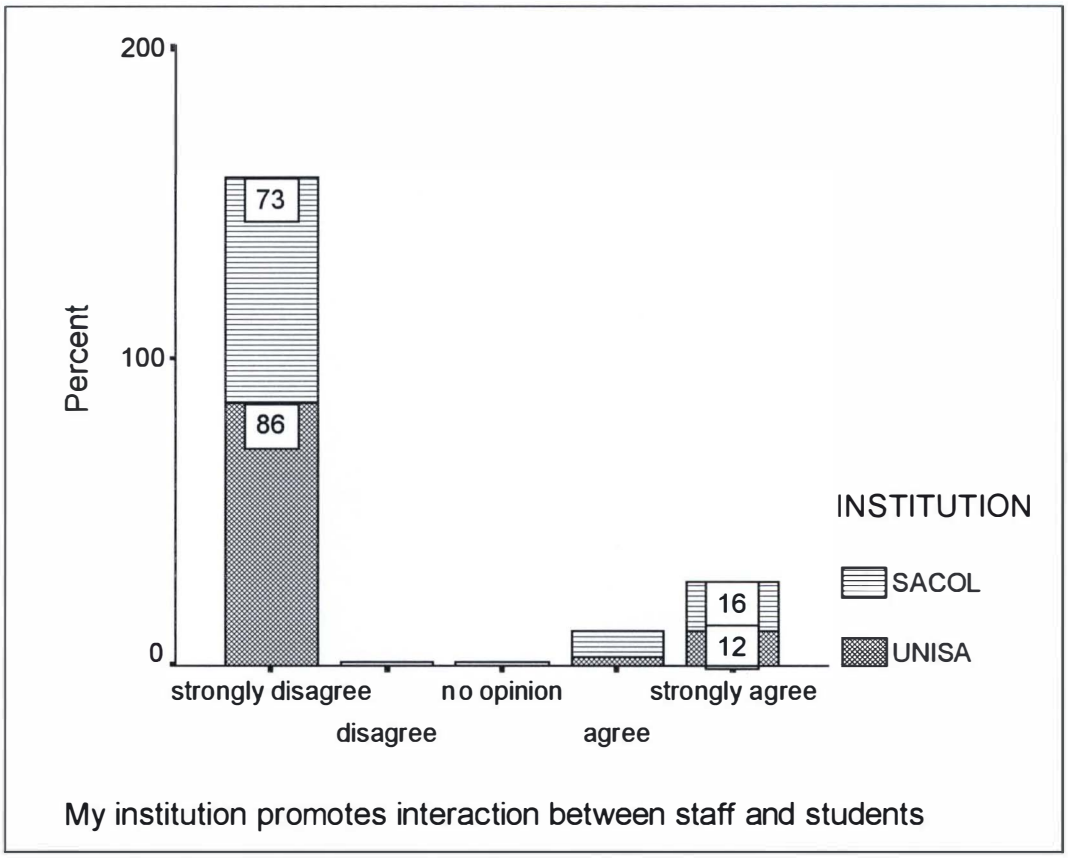

Figure 5.33. : Interaction between staff and students

The majority of staff, namely 86% (UNISA) and 73% (SACOL) strongly disagreed with the statement that their institution promoted and facilitated interaction between staff and students. Of the UNISA staff, only 12% strongly agree and 2% agree that their institution promoted interaction between themselves and students. Of the SACOL staff, 16% strongly agree and 8% agree.

In distance education, interaction between staff and student is of paramount importance. Because staff and students are not in constant face to face contact with each other there must be processes and mechanisms in place to promote and facilitate interaction. This could be achieved through various methods such as more contact sessions, provision of more tutors who can act as intermediaries between staff and students.

5.2.2.13. Resources for teaching

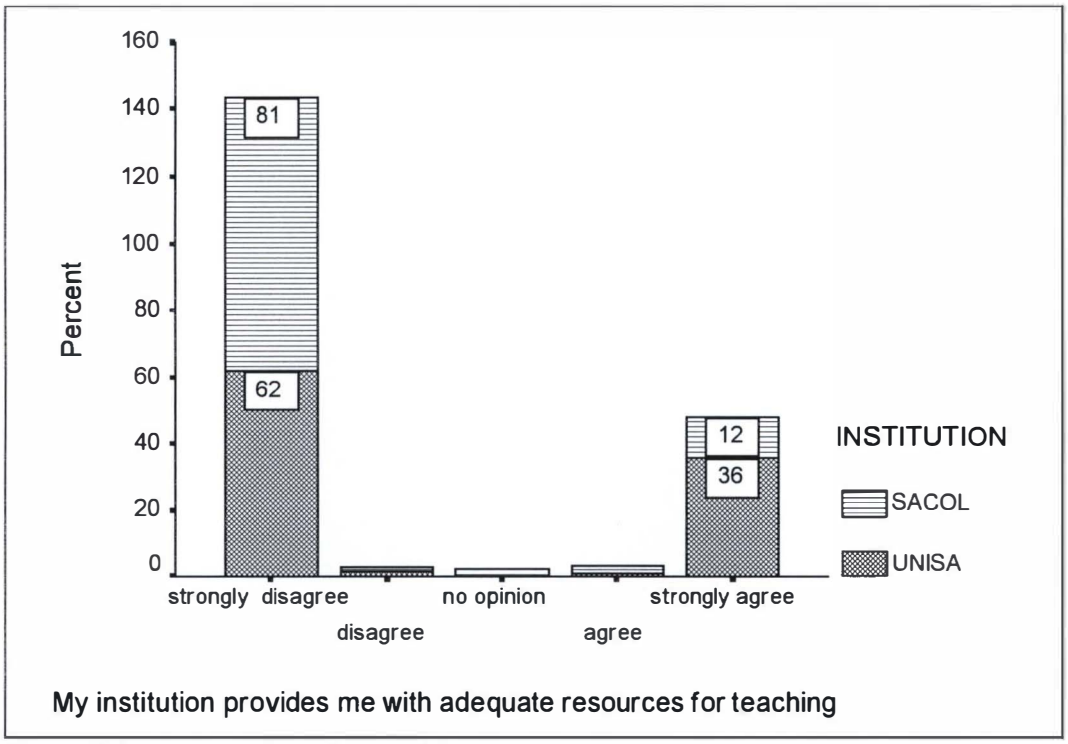

Figure 5.34. : Resources for teaching

81% SACOL and 62% UNISA staff strongly disagreed that their institutions provide them with adequate resources for teaching. 36% UNISA and 12% SACOL staff strongly agreed that they receive adequate resources to teach. These statistics reveal quite clearly that the majority of staff felt that they do not receive adequate and appropriate resources to teach. Distance teaching requires a wide variety of resources in the form of human, technical and physical resources. This could be a major factor in the poor quality of teaching as experienced by the majority of distance education institutions in South Africa. Institutions are spending less and less on resources for teaching and learning and yet these very same institutions hope to attract distance education learners

5.2.2.14. Workshops for staff

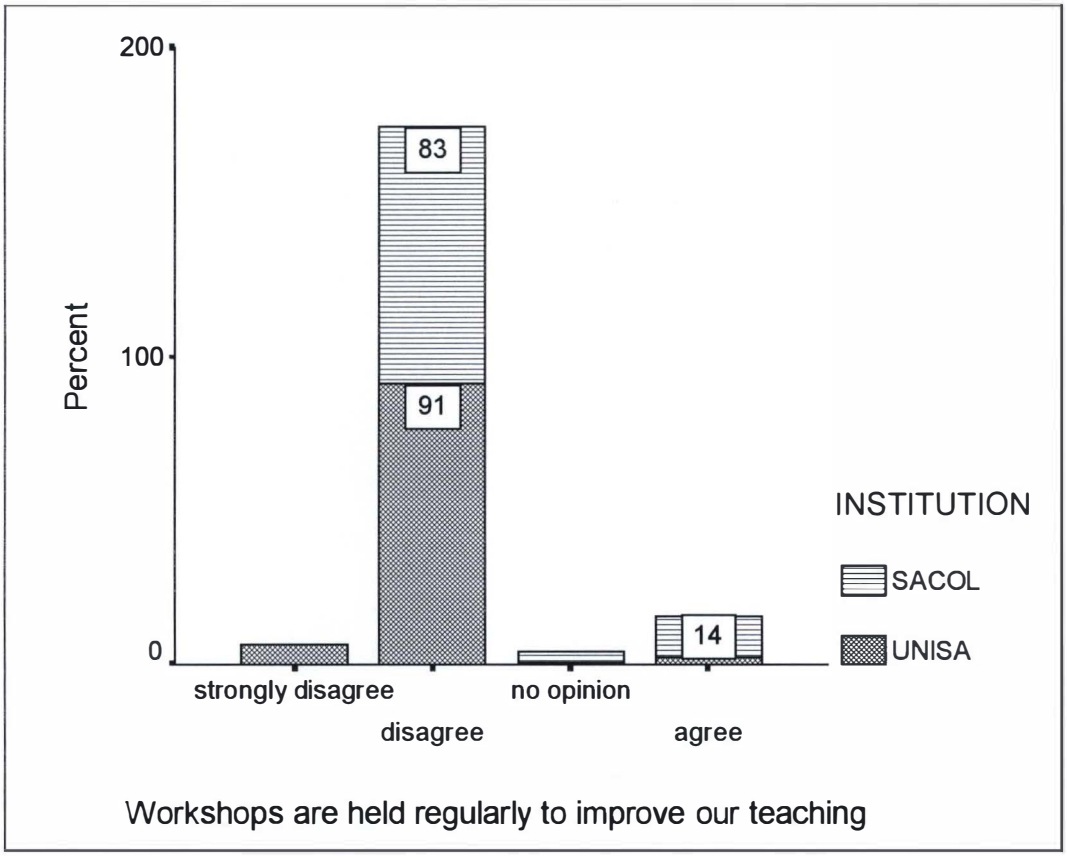

Figure 5.35. : Workshops for staff

91% UNISA and 83% SACOL staff disagreed that they attend workshops regularly which are aimed at improving the quality of their teaching. 14% of SACOL and 2% UNISA staff agreed.

Staff development is the backbone of teaching and learning. In distance education it is even more significant to hold regular workshops, seminars and micro-teaching exercises for staff to hone their skills in providing high quality teaching support to students (Woodley, 1998).

5.2.2.15. Summary of research findings: Critical question number Two:

What is the type and quality of learner support offered to tertiary distance education students in South Africa?

The study has found very conclusively that the type and quality of learner support that is currently being afforded to tertiary distance education in South Africa leaves much to be desired. The quality and type of support is of a very poor quality and standard. Students overwhelmingly indicated that they are very unhappy if not disappointed with the type and quality of learner support.

The following conclusions appear to be warranted, namely:

- ***Access to resources and information***

  Respondents were dissatisfied with their lack of access to resources, namely the library and study centres. They indicated very clearly that both UNISA and SACOL's libraries and study centres were not adequately resourced. They also indicated that the hours of operation of these facilities were far too inadequate. It must be stressed that libraries and study centres should be ideally opened 24 hours a day to cater for all those students who work

shifts and odd hours. A further reality faced by many learners in South Africa is lack of resources and inadequate living and studying conditions. Although in the South African context very little literature exists on the impact that material factors such as lack of funding have on academic performance, it is self evident that having to cope with adverse conditions combined with a poor educational background contributes to poor performance and there is an increasing awareness that many distance learners experience problems of a non-academic nature. Distance learners may also feel isolated from the institution and from fellow learners.

- ***The quality of teaching staff.***

  The majority of students were unhappy with the quality of the teaching staff. Students overwhelmingly indicated that staff were not competent to teach, staff were unknown, staff were unsympathetic to their problems. The majority of the staff also indicated that their institutions do not conduct workshops on a regular basis for them to improve the quality of their teaching. However, it was pleasing to note that the majority of students believed that their teaching staff was not racially biased towards them in any way.

- ***Access to staff for consultation and queries.***

  Once again the study revealed that students do not have full access to staff in order for them to seek advice and consult with them on various academic issues. Staff responses also indicated that indeed they do not have adequate time to support students since they had very large classes to deal with.

- ***Feedback from staff on assignments.***

  The findings support the conclusion that staff do not provide adequate feedback. The study also found that whatever feedback was forth coming, was very negative, not in-depth and lacked constructive support. Students also felt that the feedback turn around time was too long.

- ***The quality of study materials.***

  Students were disappointed with the quality of study materials that they received from both institutions, namely UNISA and SACOL. The majority of the students felt that the study materials were too theoretical, confusing, unstructured and difficult to understand. The majority of students also indicated that the study materials was irrelevant to their courses.

Generally students believed they were afforded a very low level of support in terms of the quality of study materials and teaching staff.

5.3. CRITICIAL QUESTION NUMBER THREE

What Levels Of Technology Are Employed In Distance Education Delivery In South Africa?

In seeking answers to critical question number three, the researcher firstly gleaned data on the format of study materials that students receive from their distance education institutions, namely UNISA and SACOL. The researcher then went onto to glean data about the level of computer literacy amongst students enrolled at these institutions. The reason for this was to ascertain how competent students are in the use of multi-media technologies such as the

computer and Internet. The analysis, discussions and findings of the above are thus presented under the following headings:

- Format of study materials
- Levels of Computer literacy amongst students

5.3.1. FORMAT OF THE STUDY MATERIALS:

5.3.1.1. Study materials always in the form of printed matter

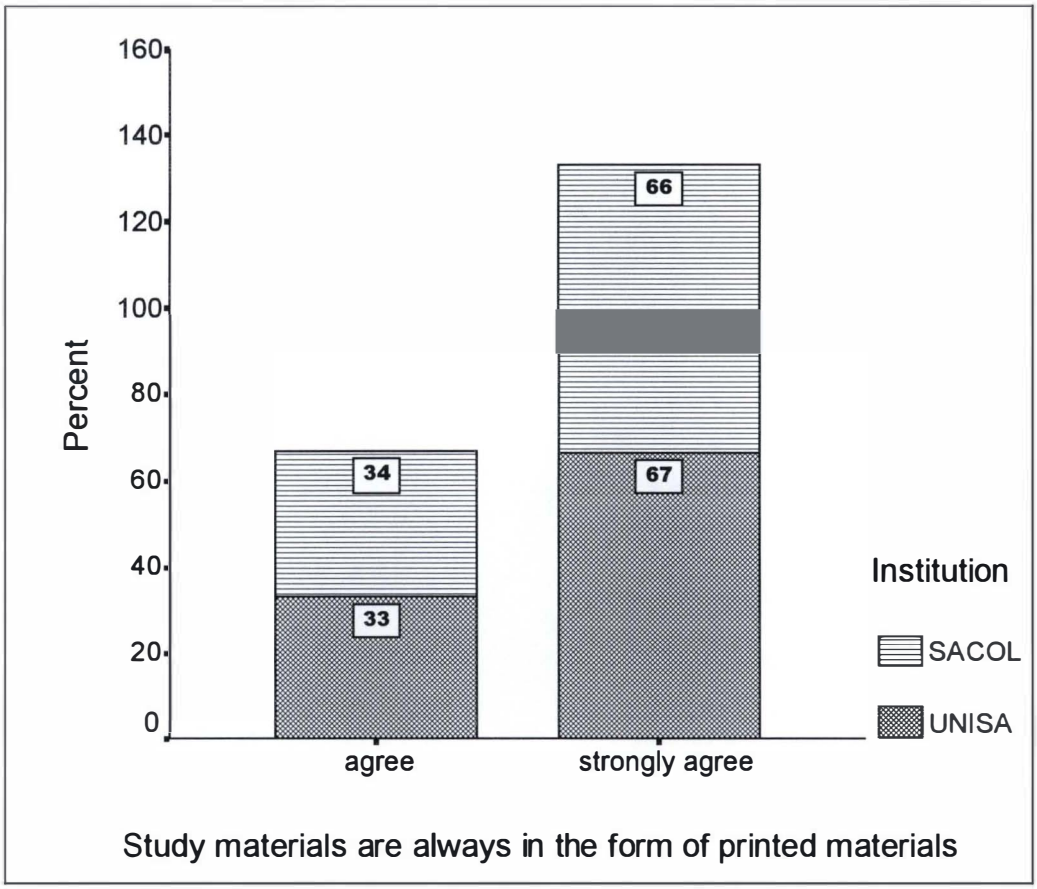

Figure 5.36. : Study materials always in the form of printed matter

All the respondents both from UNISA (34% agree and 66% strongly agree) and SACOL (33% agree and 67% strongly agree) indicated that the

study materials that they receive is always in the format of printed matter. These statistics show that the format of study materials are predominantly correspondence materials, i.e. print mode.

Indeed print is the foundation of distance education and the basis from which all other delivery systems have evolved. The first distance-delivered courses were offered by correspondence study, with print materials sent and returned to students by mail. While technological developments have added to the repertoire of tools available to the distance educator, print continues to be a significant component of all distance education programs.

5.3.1.1.1. Advantages of Print

- ***Spontaneous:*** Print materials can be used in any setting without the need for sophisticated presentation equipment.
- ***Instructionally transparent:*** The medium of delivery should enhance, not compete with, the content for the learner's attention. If the student reads well, the print medium is the most transparent instructional medium of all.
- ***Non-threatening:*** Reading is second nature to most students. As a result, they are easily able to focus on the content, without becoming mesmerized or frustrated by the process of reading itself.
- ***Easy to use:*** Given adequate light, print materials can be used any time and any place without the aid of supplemental resources such as electricity, viewing screen, and specially designed electronic classrooms. The portability of print is especially important for rural learners with limited access to advanced technology.
- ***Easily reviewed and referenced:*** Print materials are typically learner-controlled. As a result, the student rapidly moves through redundant sections, while focusing on areas demanding additional attention.

- ***Cost-effective:*** No instructional tool is less expensive to produce than print. In addition, facilities abound for the inexpensive duplication of these materials.
- ***Easily edited and revised:*** In comparison to technically sophisticated electronic software, print is both easy and inexpensive to edit and revise.
- ***Time-effective.*** When instructional print materials are created, the developer's primary focus remains on content concerns, not the technical requirements of the delivery system.

5.3.1.1.2. Limitations of Print

- Limited view of reality. Print, by its reliance on the written word, offers a vicarious view of reality. Despite the use of excellent sequential illustrations or photos, for example, it is impossible to adequately recreate motion in print.
- Passive and self-directed. Numerous studies have shown that higher learner motivation is required to successfully complete print-based courses. To a certain extent, the passive nature of print can be offset by systematic instructional design that seeks to stimulate the passive learner. Still, it takes more motivation to read a book or work through a written exercise than it does to watch a television program or participate in an audioconference with an instructor encouraging student participation and response.
- Feedback and interaction. Without feedback and interaction, instruction suffers, regardless of the delivery system in use.
- By nature, print materials are passive and self-directed. Even with print materials incorporating feedback mechanisms and interactive exercises, it is easy for learners to skip to the answer section.

- Dependent on reading skills. Thanks to television, most students have developed fairly good viewing skills by age four.
- These same children, however, often fail to develop adequate reading skills by age 12. Reading skills must often be improved. Lack of ability in this area cripples the effectiveness of even the most instructionally sound print material and must be overcome if print is to be used effectively.

5.3.1.2. Study materials broadcast on television

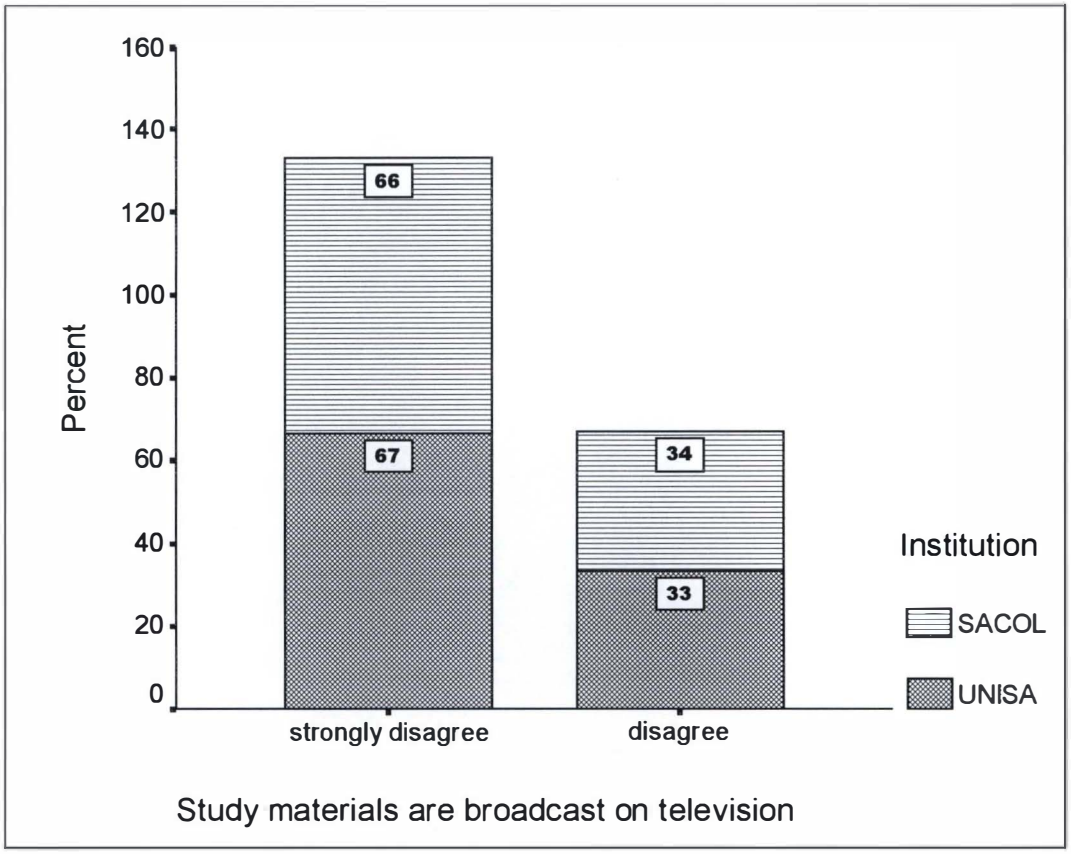

Figure 5.37. : Study materials broadcast on television

The above graph indicates that the majority of the respondents both from UNISA (67% strongly disagree and 33% disagree) and SACOL (66% strongly disagree and 34% disagree) that their study materials are broadcast on television. Indeed, both UNISA and SACOL do not make use of television

to broadcast study materials and course offerings to students. As pointed out earlier, their main source of delivery is that of printed matter. Although printed materials form the backbone of distance education, it must be pointed out that multi-mode delivery mechanisms such as multi media, computers, radio, etc, can only strengthen distance education in South Africa. The Open University of the United Kingdom (OUUK) was one of the pioneers in employing television broadcasts to supplement distance education. It achieved huge success and as a result the CCRTV University of China was born. Presently the CCRTV University has over one million students who receive distance education tuition via television broadcasts (Sagar, 1995). One can only hope that distance education providers in South Africa will begin to develop policies and frameworks of how to engage television broadcasts into their mainstream distance education provision.

5.3.1.3. Study materials are broadcast over the radio

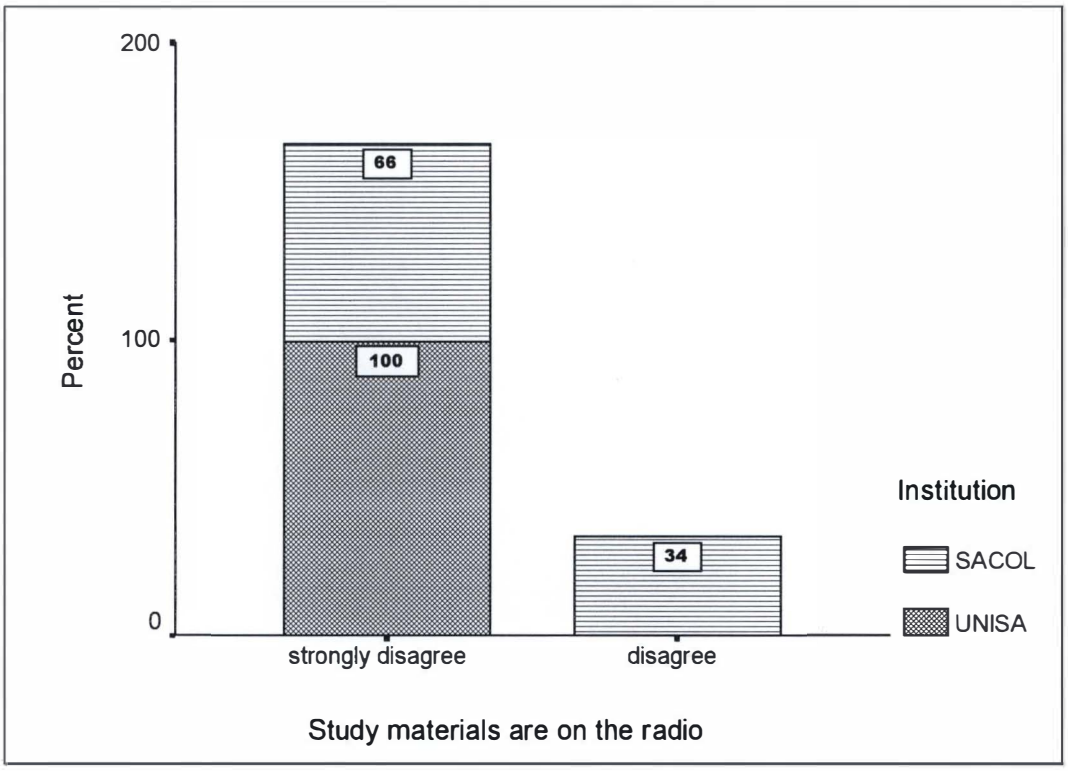

Figure 5.38. : Study materials are broadcast over the radio

100% of the respondents from UNISA strongly disagreed that their study materials are broadcast over the radio. 66% of SACOL students strongly disagreed while 34% disagreed. It must be pointed out that South Africa is a developing country and has been underpinned by the legacies of apartheid. Capital resources are very scarce and thus its educational landscape cannot afforded the immediate costs of the implementation of high technologies such as the Internet and other related technologies. Students' literacy levels in the application of high technology is also at a very low level. Distance education providers will thus do well to begin to implement low level technologies such as the radio which as various benefits.

Potential benefits of using radio broadcasts in distance education are as follows:

- Radio can reach large audiences simultaneously (Wheeler, et. al, (1999) ;
- Radios are widely available and relatively cheap (Winter and Winter, 1993);
- They are easy to use and most people are familiar with them;
- They can operate on a variety of power sources (mains, battery, solar power or clockwork).

In addition to above, radio has a number of strengths that are related to its potential educational use. The development of educational radio has seen radio used for a wide spectrum of learning groups. It has been used for schools broadcasts, adult basic education (including literacy), early childhood development, 'informal general education' and 'social action programming' (SAIDE, 1998: 45). Radio's potential to motivate listeners and possibly result in attitudinal change has been recognized (Simpson, 2000)

Reflecting on the British Open University's (OU) use of radio highlights both additional strengths and potential applications for radio. Possibly the most obvious, though not necessary the most effective, use of radio for education is to transmit lectures by experts or professors. It is interesting to note that at the peak of the OU's use of radio, only about 20 percent of its radio programmes used this lecture format (Shapshak,1998).

Kabonoki (1999) argues that radio at the OUUK was used more frequently for:

- discussions of course material or issues covered in the printed materials;
- alternative viewpoints to that contained in the printed material (e.g. guest speakers;
- source material for analysis (e.g. children's speech patterns); 'performance', including poets reading their own poetry, dramatization of literature, musical performance;
- providing aural experiences: music, language learning, analysis of sounds;
- collecting the views or experiences of specialists, experts or witnesses.

5.3.1.4. Study materials are in the form of audio tapes

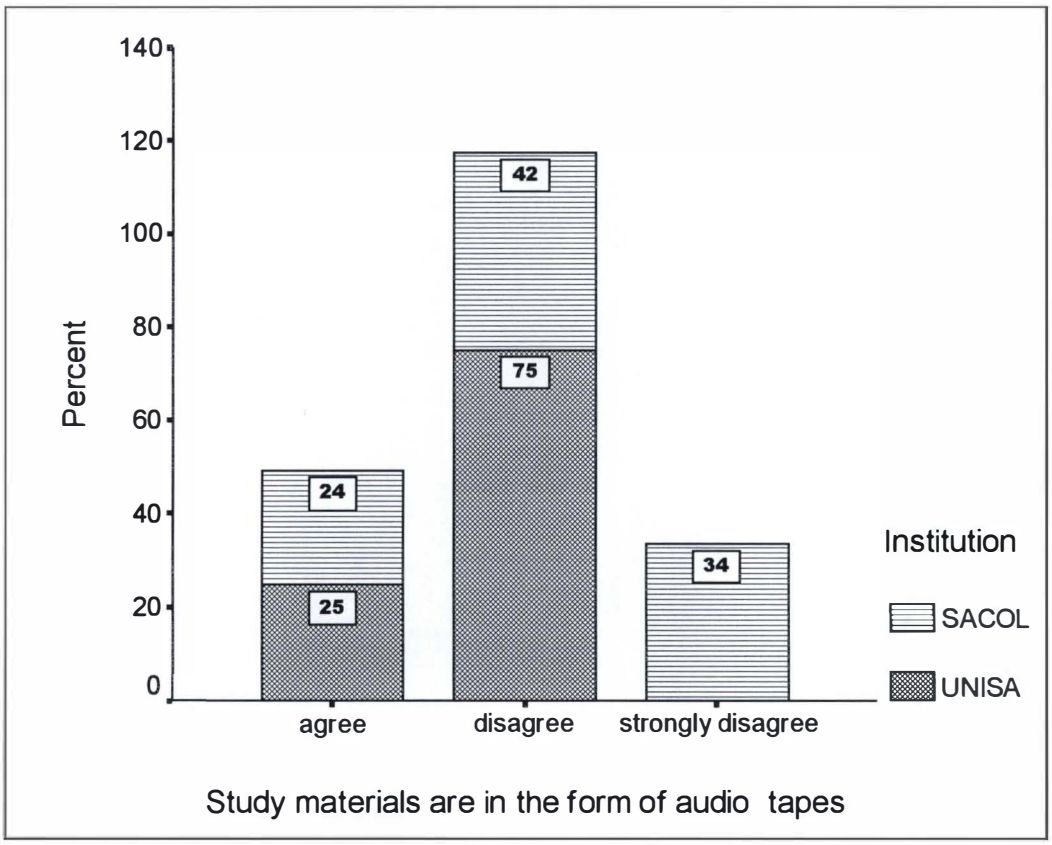

Figure 5.39. : Study materials are in the form of audio tapes

The majority of the students at UNISA (75% disagree) and SACOL (42% disagree and 34% strongly disagree) that receive study materials in the format of audio tapes. Only 25% UNISA and 24% SACOL students agreed that they receive study materials in the form of audio tapes - this is a rather small percentage especially noting the benefits of audio tapes.

In combination with print materials, audiocassettes allow for simultaneous audio and visual stimulation, while permitting students to move between media at their own pace. This flexibility is important in resource-based learning and learner-centred education. Use of audiocassettes also allows students and teachers the opportunity to have their hands and eyes free. Bates

(1984: 248) lists the following advantages of using audiocassettes as teaching and learning material:

- To analyse or process detailed visual material... The purpose of the cassette is to 'talk' students through the visual material;

- To enable students through repetition to obtain mastery in learning certain skills or techniques (e.g. analysis of language, language pronunciation, analysis of musical structure and technique, mathematical computation); and

- To analyse or critically review complex arguments, or carefully structured logical arguments.

5.3.1.5. Study materials are in the form of video tapes

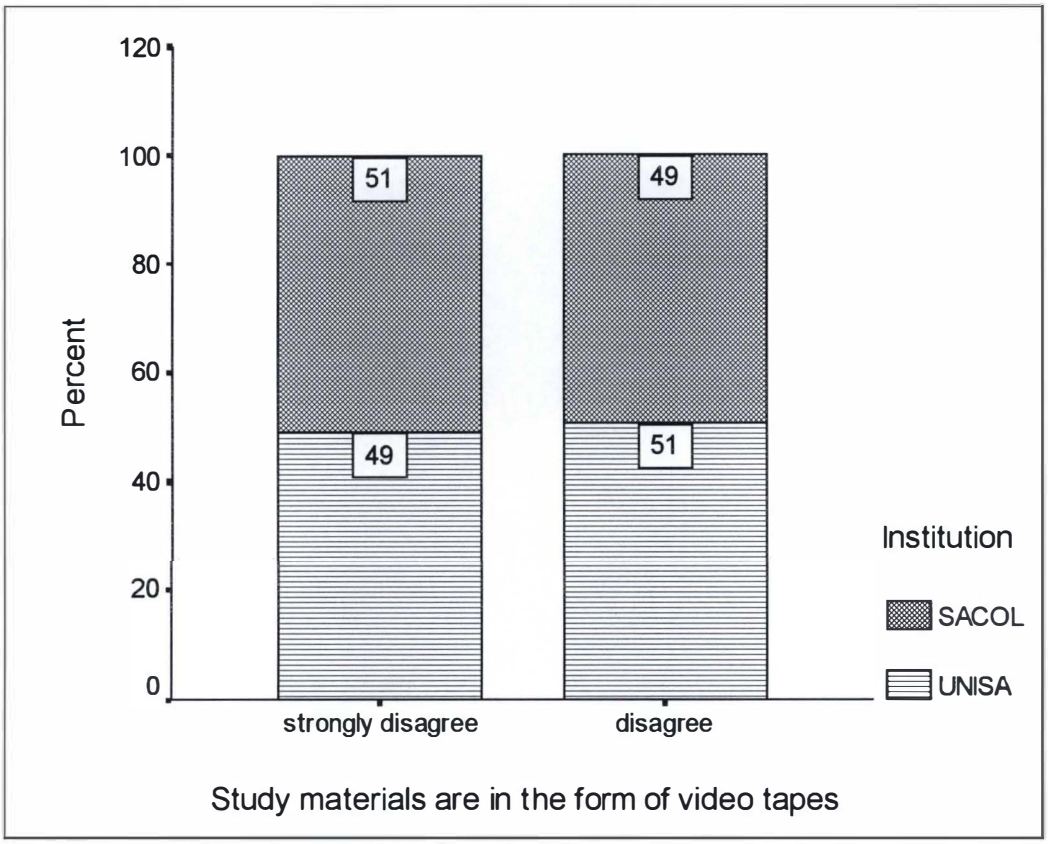

Figure 5.40. : Video format of study materials

All the students from both SACOL (51% strongly disagree and 49% disagree) and UNISA (49% strongly disagree and 51% disagree) indicated that they do not receive study materials in the form of video tapes/cassettes. As mentioned earlier, South African distance education providers must begin to utilize technologies in the delivery of distance education. Whatever the level of technology, efforts must be made to develop policy around technology enhanced teaching and learning. The benefits of video tapes are numerous and very effective in promoting distance teaching and learning. Amongst others, the following are but a few of the potential benefits:

- relatively widespread availability of technology.

- ability to record as well as replay and pause.
- Low cost of recording.
- users can choose time and place for viewing.
- motion and processes can be shown.
- viewers can see places or activities which they would not normally experience. For example, the inside of a cockpit, surface of the moon or underwater sea life.

This study has revealed very clearly that the main format of study materials used overwhelmingly by distance education providers in South Africa is that of print and correspondence. Currently UNISA and SACOL do not rely on any other format of study materials besides print. It must be mentioned that there is nothing wrong with using printed formats of study materials in distance teaching and learning. However, globalization confronts us in this new millennium and as such we need to embark on technology enhanced teaching and learning so as to foster a new kind of worker, namely the knowledge worker. Research has also pointed out the merits of technology when successfully introduced into the delivery of distance education.

It must also be stressed that they are other available distance education delivery modes which have reduced costs within the distance education framework. For example, it is far cheaper to send an email or fax instead of posting study materials.

5.3.1.6. Multi-mode student support

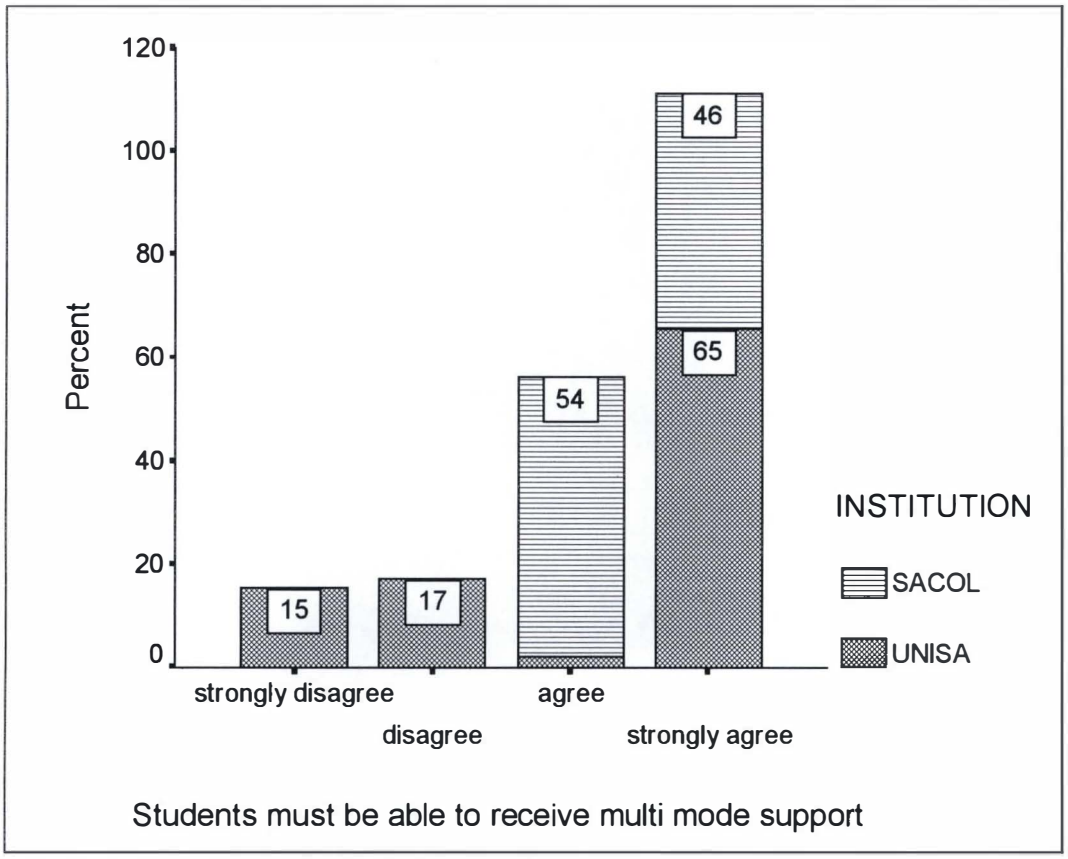

Figure 5.41. : Multi-mode student support

All of the SACOL staff (54% agree and 46% strongly agree) felt that students ought to receive multi modal support. Of the UNISA staff, 65% strongly agreed and 3% agreed that students ought to receive support in various modes incorporating multi media technologies while 17% disagreed and 15% strongly disagreed.

It was pleasing to note that both UNISA and SACOL staff overwhelmingly agreed that students ought to receive support in the form of various modes such as both contact and face to face, audio and visual and computer mediated support. There is no question that student support could be significantly enhanced if institutions begin to provide multi modal support that can supplement each other.

5.3.2. Computer Literacy amongst students

5.3.2.1. Level of computer Literacy amongst students

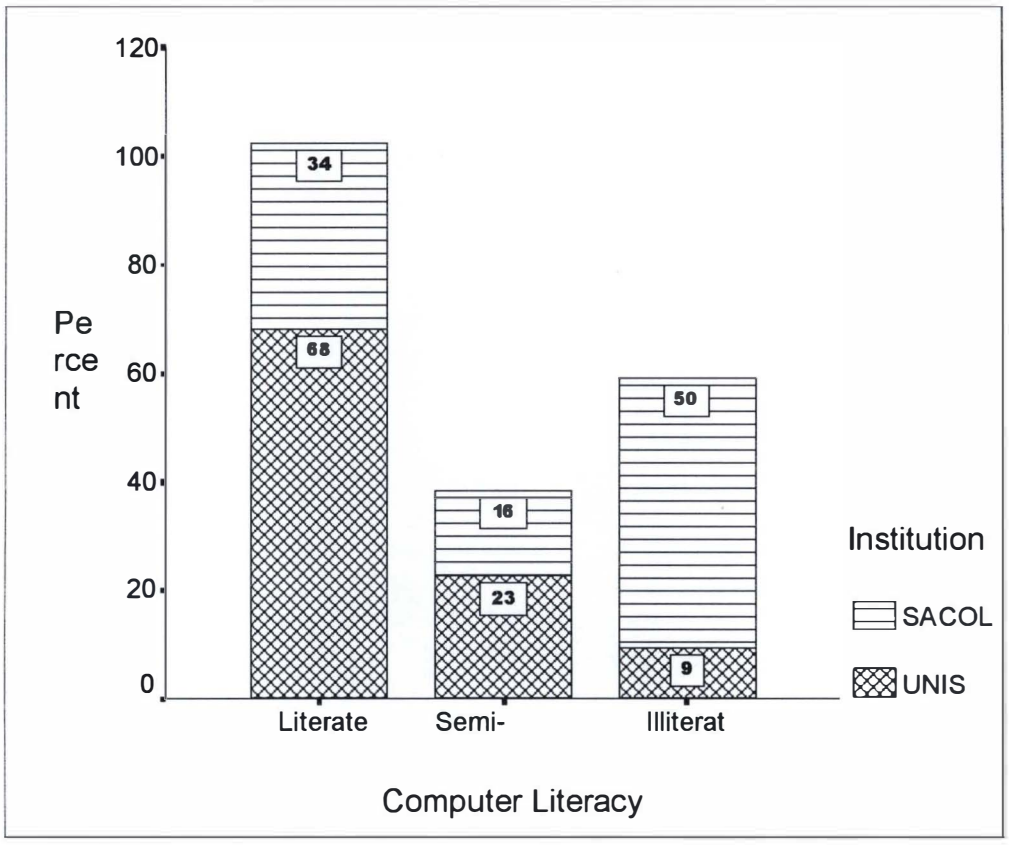

Figure 5.42. : Level of Computer Literacy

68% of UNISA and 34% of SACOL students are computer literate. 50% SACOL and 9% of UNISA students are computer illiterate. 23% UNISA and 16% SACOL students are semi literate. The above statistics reveal that the majority(68%) of the students from UNISA are computer literate while the majority of SACOL (50%) are illiterate.

It is rather pleasing to note the high level of computer literacy amongst UNISA students. This gives us much needed encouragement as to the promotion of Internet and Web based instructional delivery as regards

distance education. These statistics especially from UNISA respondents gives us hope that indeed there can be gradual movement towards the introduction of high level computer aided instruction delivery within the distance education framework of our country.

Noting that UNISA, is one of the largest distance education provider in South Africa and the world, one can assume that UNISA needs to begin to develop computer based teaching and learning en masse for its students. There is ample evidence from the findings of this study, that a large percentage of students are computer literate and as such will be able to study via the Internet and World Wide Web. The advantages of studying via the Internet are numerous to mention, however the following are but some of the reasons that justify the increased use of Web and Internet based teaching and learning:

- Increased Access
- Increased productivity
- Huge cost benefits
- Personalized education
- Allows for convergence and commodification of learning
- Develops and sustains peer learning communities
- Allows for flexible teaching and learning
- Increases time and place indpendence

5.3.2.2. Access to computers

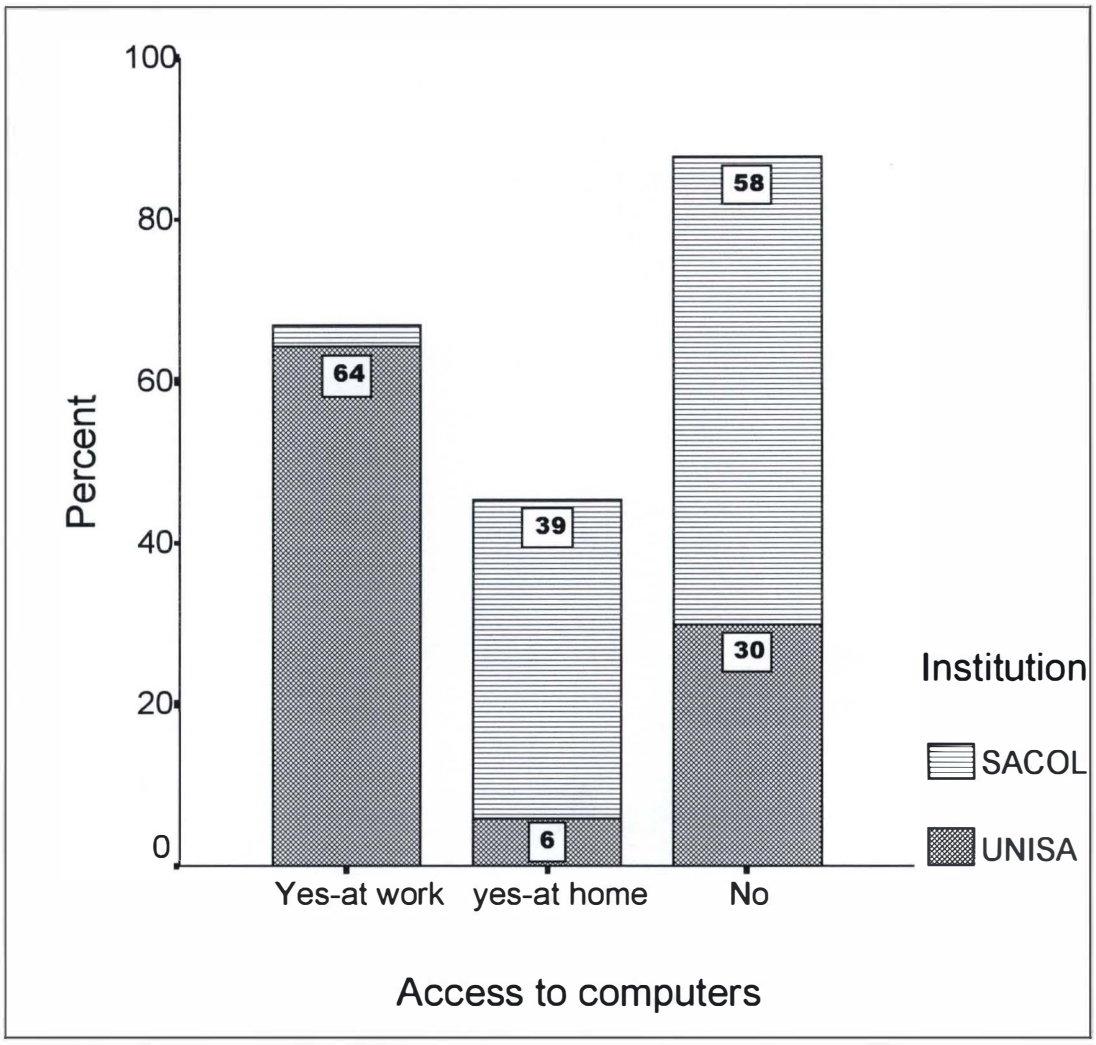

Figure 5.43. : Access to computers

64% of UNISA respondents have access to computers at their place of work while only 3% of SACOL students have access to computers at their place of work which are schools. It is rather unfortunate that SACOL students do not have access to computers at their place of work. This is a severe indictment on the provincial department of education as regards the provision of computers to schools. One would imagine that computer aided instruction at the school level is of paramount significance in that it should have been the breeding ground for the implementation of technology enhanced learning and teaching. As mentioned earlier all SACOL students are educators at schools

and have enrolled at SACOL to upgrade their qualifications. Many of the SACOL students do not have adequate training in their respective school subject and learning areas and as such have enrolled to gain further knowledge and expertise in their respective learning areas. 3% is a rather low figure and one would have to take this into account when analyzing resources at schools in the province of KZN.

UNISA students appear to be quite fortunate in that they have ready access to computers at their workplace. There is no doubt that industries and business enterprises have begun to outlay vast sums of resources in the development of their information technology infrastructures as many of them cannot operate and function without them. Knowledge and information are basic to the efficiency of business and it is thus no wonder that all UNISA students who are employed have access to computers. This partnership between institutions and UNISA could be developed whereby mutual benefits could be gained between training and staff development by way of studies.

It was quite pleasing to note that 39% of SACOL students have taken the initiative to purchase their own computer at home. This shows that students have begun to realize the value of computers. On the other hand it was rather disappointing to note that over 58% of SACOL students do not have access to computers either at home or their place of work.

5.3.2.3. Knowledge about the Internet

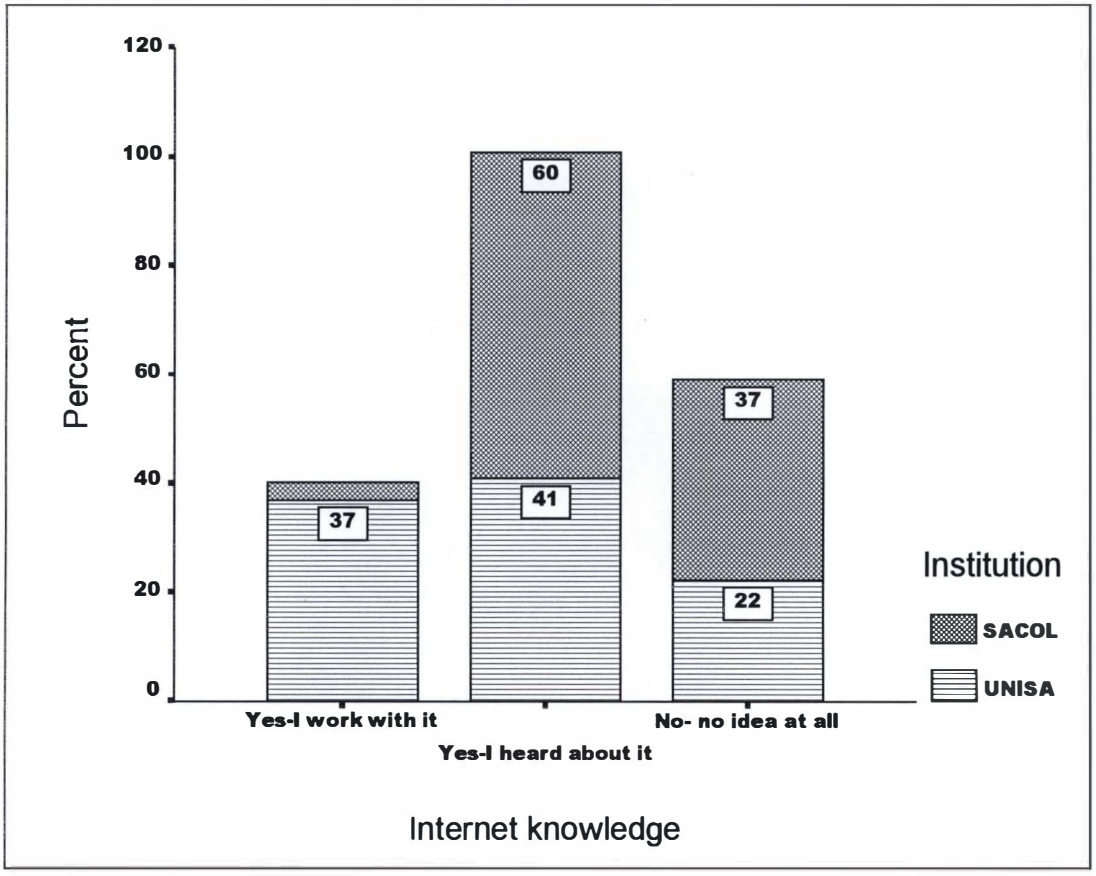

Figure 5.44. : Internet Knowledge

It was rather discerning to note that only 3% of SACOL and 37% of UNISA students worked with the Internet. This percentage is too minute and is of grave concern, especially as regards the use of Internet in our country amongst educators and students. The SACOL student's Internet knowledge is mind boggling within the context of education itself. Having noted previously that all SACOL students are educators in schools and one therefore has to ask, what level of computer usage and applications are taking place at the school level. On the other hand one also begs the question that if the majority of UNISA students are employed then how come they do not use the Internet since only 37% indicated that they do. There is no question that the Internet

and computers generally are the life blood of commerce and therefore one cannot comprehend why the so low figures as to internet knowledge amongst UNISA students who are fully employed.

5.3.2.4. Most popular communication mode between staff and students

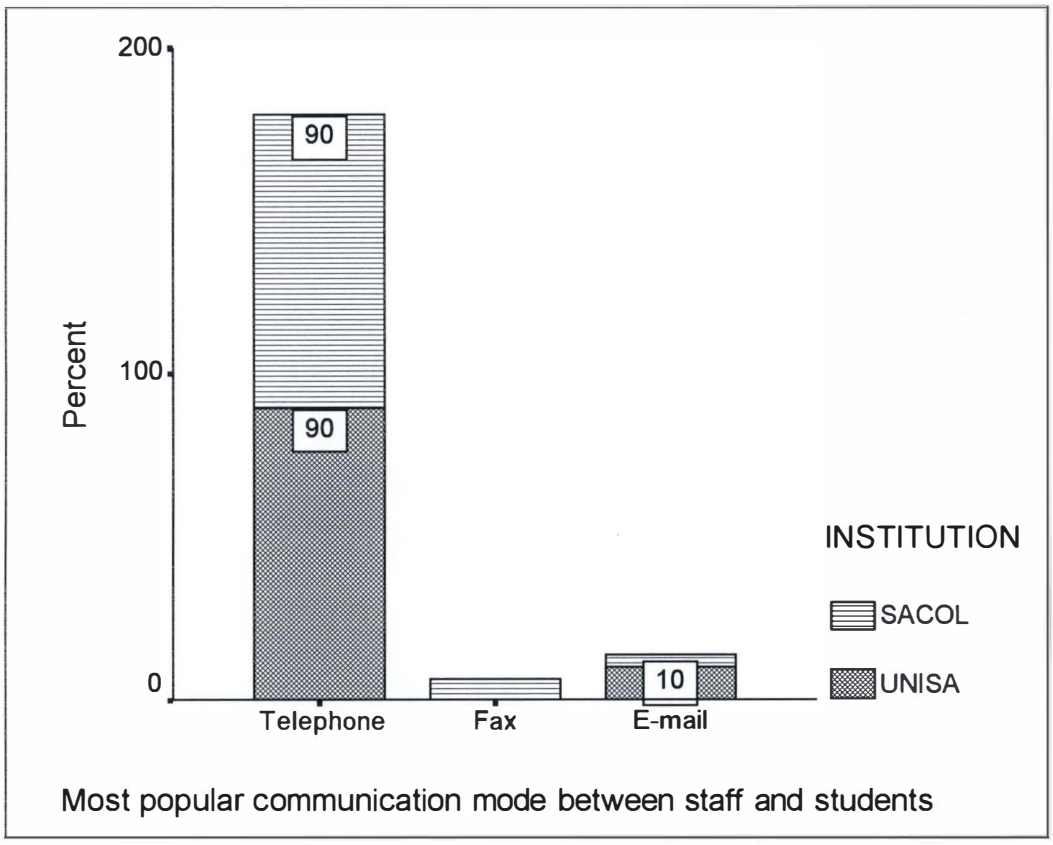

Figure 5.45 : Communication mode between staff and students

The majority of the staff indicated that the most popular communication mode between them and students is the telephone. 10% of UNISA staff indicated that e-mail communication is most popular while 7% of SACOL staff indicated that fax was the most popular communication mode. Only 3% of SACOL staff indicated that students communicate with them via e-mail.

There is no doubt whatsoever that, UNISA and SACOL ought to encourage students to communicate with them and their staff via e-mail. E-

mail is the most convenient, least costly and most effective communication medium. The majority of students, especially those from UNISA indicated that they have access to e-mail and as such this would be very convenient for them.

5.3.2.5. Contacting staff electronically

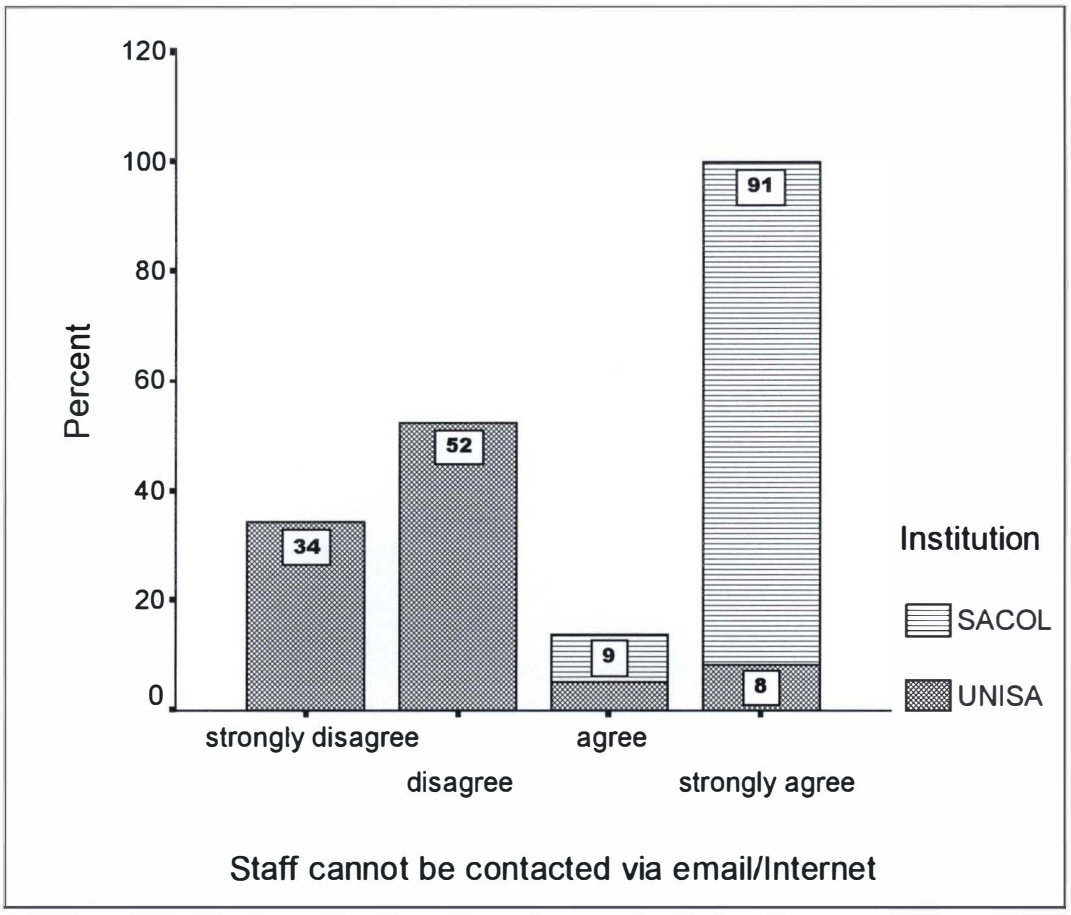

Figure 5.46 : Contacting staff electronically.

The majority of UNISA students (34% strongly disagree and 52% disagree) with the statement that staff cannot be contacted via the e-mail and Internet. 91% of SACOL students agreed while 9% strongly agreed that their staff cannot be contacted electronically. Only 8% of UNISA students felt that their staff cannot be contacted via the Internet and e-mail.

5.3.2.6. The influence of technology on the quality of teaching and learning

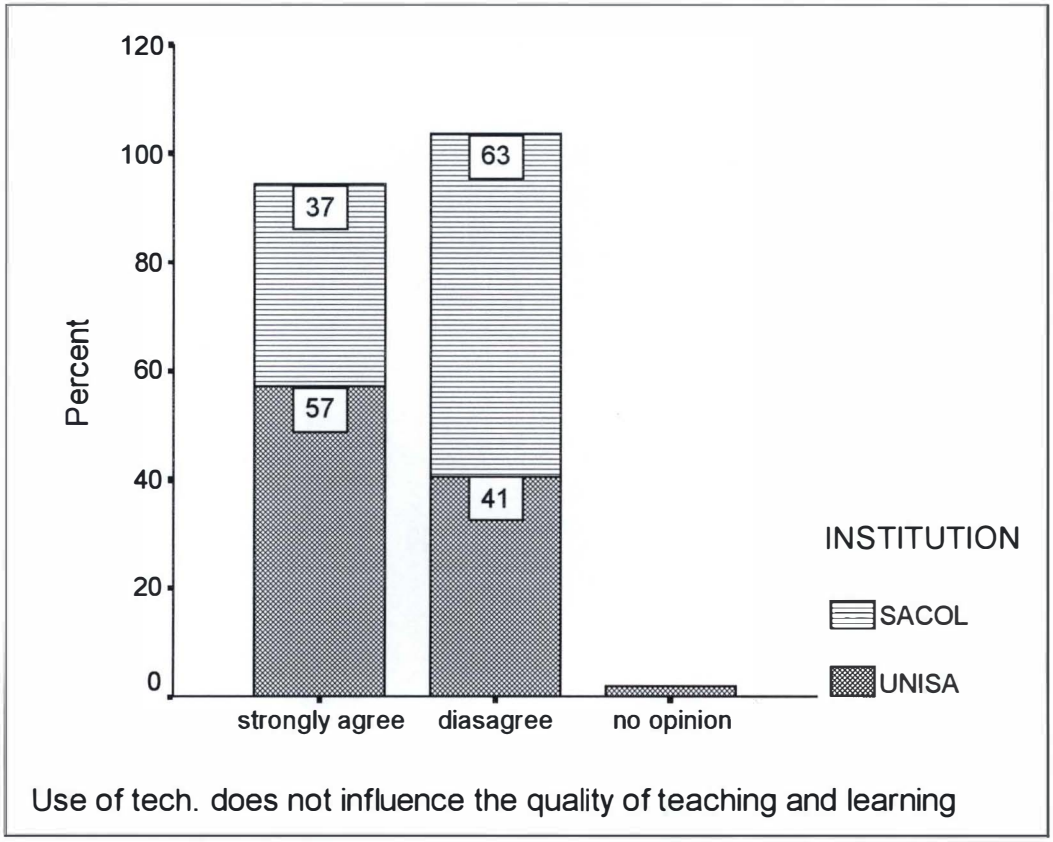

Figure 5.47. : The influence of technology on the quality of teaching and learning

41% of UNISA and 63% of SACOL staff disagreed with the notion that the use and application of technologies does not influence the quality of teaching and learning. 57% UNISA and 37% SACOL staff strongly agree with the view that the use of technology does not influence the quality of teaching and learning. 2% of UNISA staff had no opinion on the above contention, namely that the use of technology does not influence the quality of teaching and learning.

It was interesting to note that the majority of UNISA staff felt that the use of technology does not influence the quality of teaching and learning.

Research has shown that such a belief is not only foolhardy but smirks of total ignorance on the role of technology in enhancing the quality of teaching and learning. Institutions throughout the world, most notably, the Open University of the United Kingdom which is the pioneer of distance education, has shown over and over again, that the use of technological applications in the development and provision of distance education not only enhances the quality of teaching and learning but also reduces the cost of distance education delivery.

5.3.2.7. Study materials and tutorials are available online

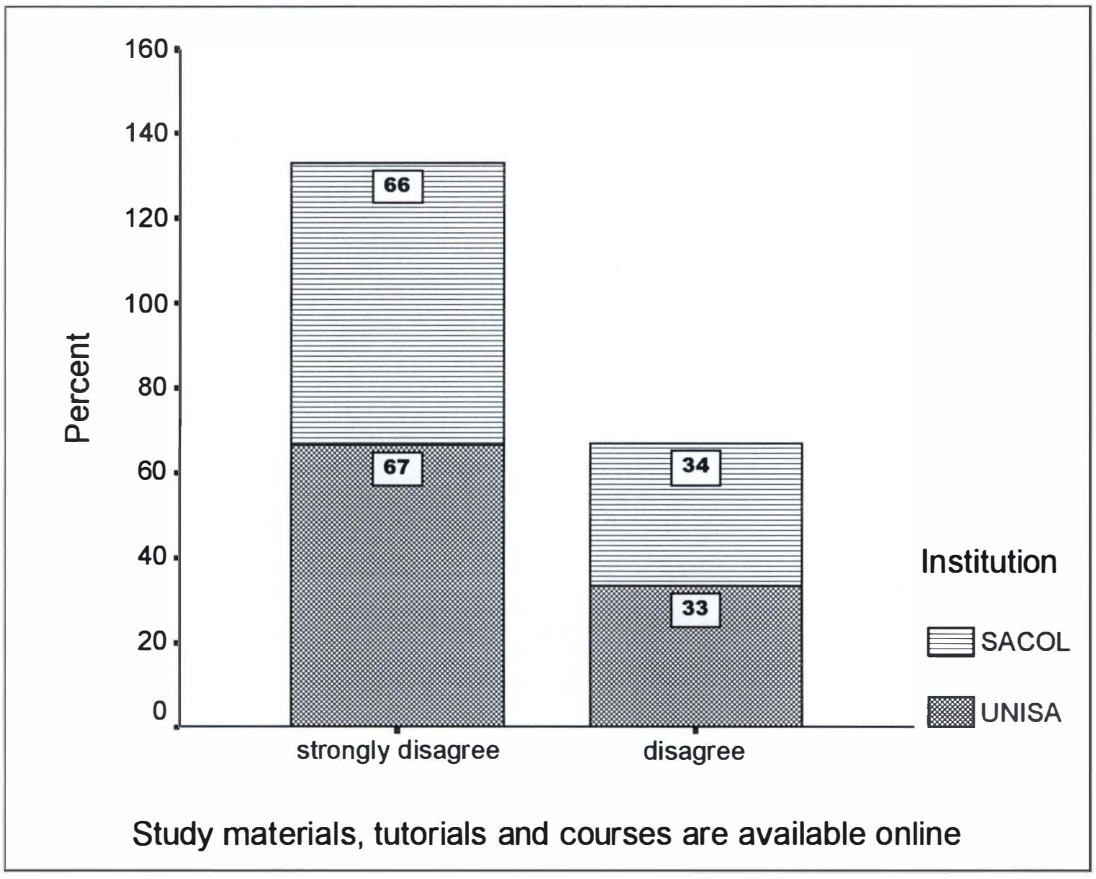

Figure 5.48 : Availability of study materials, tutorials and courses online

100% of the respondents both from UNISA (67% strongly disagree and 33% disagree) and SACOL (66% strongly disagree and 34 disagree) with the

statement that their courses, study materials and tutorials are available online. Statistics as revealed earlier on indicate that a very large percentage of students are computer literate and have worked with the Internet. This shows very clearly that, higher education institutions such as SACOL and UNISA ought to begin in earnest with the introduction of online learning and teaching. Many students have indicated that they are computer literate and thus posses the necessary skills and expertise to use computer based learning and teaching such as the Internet.

5.3.2.8. Summary of research findings: Critical question number three:

What levels of technology are employed in the delivery of distance education in SA?

- ***Computer literacy***

  Over 50% of the students are computer literate and have access to computers either at work, home or both work and at home. A fairly high percentage, especially UNISA students have worked with the Internet and as such have expertise in the application of Internet technology in so far as learning is concerned. The researcher is of the view that for far too long distance education institutions have underestimated the computer literacy level of their students and as such have used this misconception to stall the implementation of online teaching and learning modes within the distance education framework. This study has shown quite clearly that the majority of students are computer literate and they prefer very much that their study materials and teaching in general be available on-line.

- ***On Line teaching and learning***

  Both at UNISA and SACOL no online teaching is being provided for at the moment. The majority of students indicated that they

would prefer their study materials to be available on-line (via the Internet and World Wide Web)

- ***Contacting staff electronically***

  Currently, students contact staff mainly telephonically. However students overwhelmingly indicated that they would like to contact staff electronically especially via email and the Internet.

- ***Format of study materials***

  Presently, all study materials are only in the format of print/correspondence. Students do not receive even low technology formats of study materials such as radio broadcasts, television broadcasts, audio and video cassettes. However the majority of students indicated that institutions ought to begin to introduce study materials in various other formats. They went onto indicate that they would prefer study materials to be available on the Internet. The majority of the staff were also in agreement that students ought to receive study materials, viz. learner support in multi modal formats.

Finally it would appear that distance education institutions employ a very low level of technology in the delivery of study materials and teaching in general. The irony of the whole situation is that these very same institutions to increase profit, have well developed web sites advertising their course offerings, cost and requirements for study. One wonders why then do these institutions not provide online learning as such ?

Perhaps it would be most pertinent to remind these institutions of the various of employing technology driven distance teaching and learning.

According to Paul (1990), information technologies will improve learning and teaching in two distinct ways. Just as they have made workers more productive in business and commerce, they would reduce teaching costs or increase the speed with which learners acquire knowledge. Alternatively, such technologies will help improve the quality of learning, rather than simply making it faster and cheaper.

Sweet (1993) concurs with Paul (1990) by arguing that most discussions of computers in education look at how new technologies might improve "instruction delivery," a management theorist's way of saying how teachers teach and how learners learn. Therefore, as resources for higher education continue to dwindle, when most people think of information technologies, it will usually be in terms of how such technologies might reduce the number of teachers needed or cut the time (and money) it takes learners to acquire skills. A collection of cases in current practice suggests that some technologies do indeed help improve productivity.

Kabonoki (1999) also highlights the point that current successes are subject to several qualifications. Some cost savings are modest, others come with hidden prices (for example, high development costs or lower graduation rates), and all depend on careful attention to implementation in the classroom. But, although the data are still unclear, the economic logic behind the view is relatively straightforward: Cut costs by doing more with less; that is, hold student outcomes roughly constant (or improving) while displacing labor (staff) with capital (here, information technology). With technology costs continually dropping while labor costs only rise, this trade-off appears a good one for increasing productivity.

There is no doubt that online learning in the long term will decrease costs in terms of human, technical and financial resources and it is thus paramount

that UNISA and SACOL begin to develop clearly guided frameworks with the intention of developing and sustaining technology enhanced teaching and learning. The benefits of using technology driven delivery modes far outweighs conventional methods such as print modes of delivery

Computer-aided instruction (CAI) and computer-based training (CBT) have shown some ability to do more with less, by providing learners with drill-and-practice systems that replace teachers in routine coaching tasks. These systems are most frequently found in secondary schools but also play a role in remedial maths, science, and language courses at the collegiate level, as well as in business and military training. However, as convenient as they might be for self-paced learning, CBT programs often do not yield dramatic cost savings. Development costs for multimedia courseware are usually very high, often offsetting savings in delivery, and the price of a stand-alone computer system for each student is sometimes so dear that labor costs must fall dramatically before any net savings appears. The latter situation may change in the future, however, as powerful machines drop roughly to the cost of a top-of-the-line TV.

A few intelligent tutoring systems (ITS) also have reported cost-reductions in training. But, as with CAI and CBT, development costs currently impose strong limits on their productivity gains. In fact, the main attraction of ITS is that they may improve the quality of learning rather than reduce costs.

"Today, distance learning-whereby students and teachers rely on electronic and hardcopy media, rather than on face-to-face contact, for at least some of their communication (correspondence courses by postal mail are perhaps the oldest form of distance learning)--provides probably the best examples of cost savings that are at least partly attributable to information technologies"
(Sweet, 1993:23)

5.4. DISTANCE EDUCATION INSTITUTES AND ORGANIZATIONS IN SOUTH AFRICA

5.4.1. South African Distance Education Institute (SAIDE)

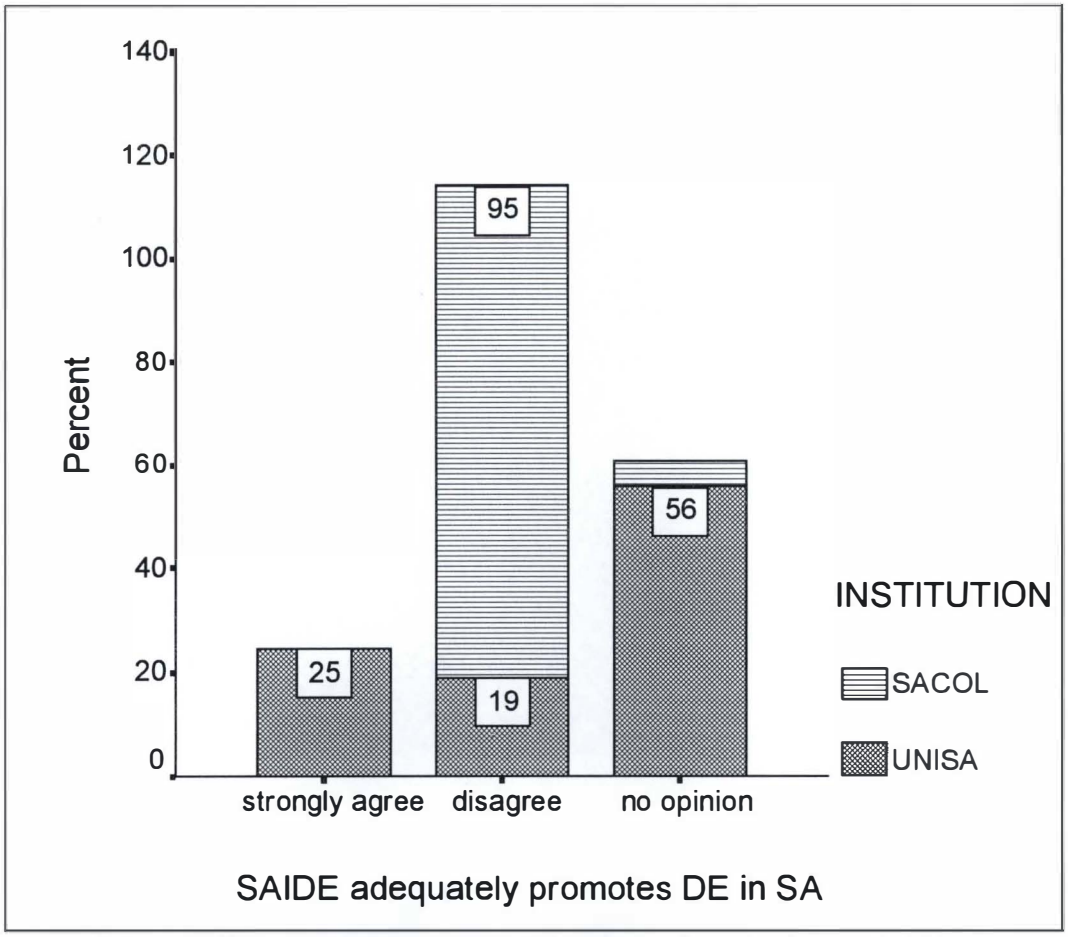

Figure 5.49. : SAIDE adequately promotes distance education in South Africa

95% of SACOL and 19% UNISA staff disagree that the South African Institute for Distance Education (SAIDE) adequately promotes distance education in South Africa. 56% of UNISA staff had no opinion on the issue while 25% strongly agree that SAIDE adequately promotes distance education in South Africa

The South African Institute for Distance Education (SAIDE) was formed as an educational trust in June, 1992, with an explicit brief to assist in the

reconstruction of education and training in South Africa by promoting open learning principles and the use of approaches and methods of quality distance education. SAIDE works closely with educational institutions, as well as national and provincial governments, to translate these approaches into practice.

Currently, SAIDE employs some twenty-five people, with its educational staff specialising in areas such as course design, quality assurance, professional development, and learner support. It should be noted that SAIDE is not an implementing agency. Rather it acts as an advocate, catalyst, and facilitator to bring about change in existing educational practices, and to design and support key new programmes.

SAIDE therefore actively engages in policy making processes, and works closely with international and regional organizations committed to open learning, existing South African distance education providers, organized groups of distance education learners, institutional clients of distance education, education practitioners adopting open learning approaches, and new distance education and resource-based learning initiatives. Services offered by SAIDE include the following:

SAIDE provides support for new distance education and/or resource-based learning initiatives by assisting - amongst other things - in planning, in orientation programmes for staff, and in the training of practitioners. SAIDE provides assistance to providers in developing and implementing appropriate quality assurance mechanisms; it also provides formative and summative evaluation services

SAIDE's Resource Centre in Braamfontein, Johannesburg - which is open to the public as a reference library - contains examples of courses, information

on providers, resources for the professional development of effective, flexible learning materials, and a range of resources developed for the South African context.

In carrying out its work, SAIDE has the following aims:

- to successfully promote and establish commitment to open learning and quality distance education in key policy areas and in different educational sectors;
- to support the development and/or transformation of identified institutions and programmes using distance education methods;
- to develop a set of services and resources to support increased openness and quality in distance education.

SAIDE's mission is to help increase democratic access to knowledge, learning and skills through the adoption of open learning principles and distance education strategies.

5.4.2. Common Wealth Learning Institute of Southern Africa (COLISA)

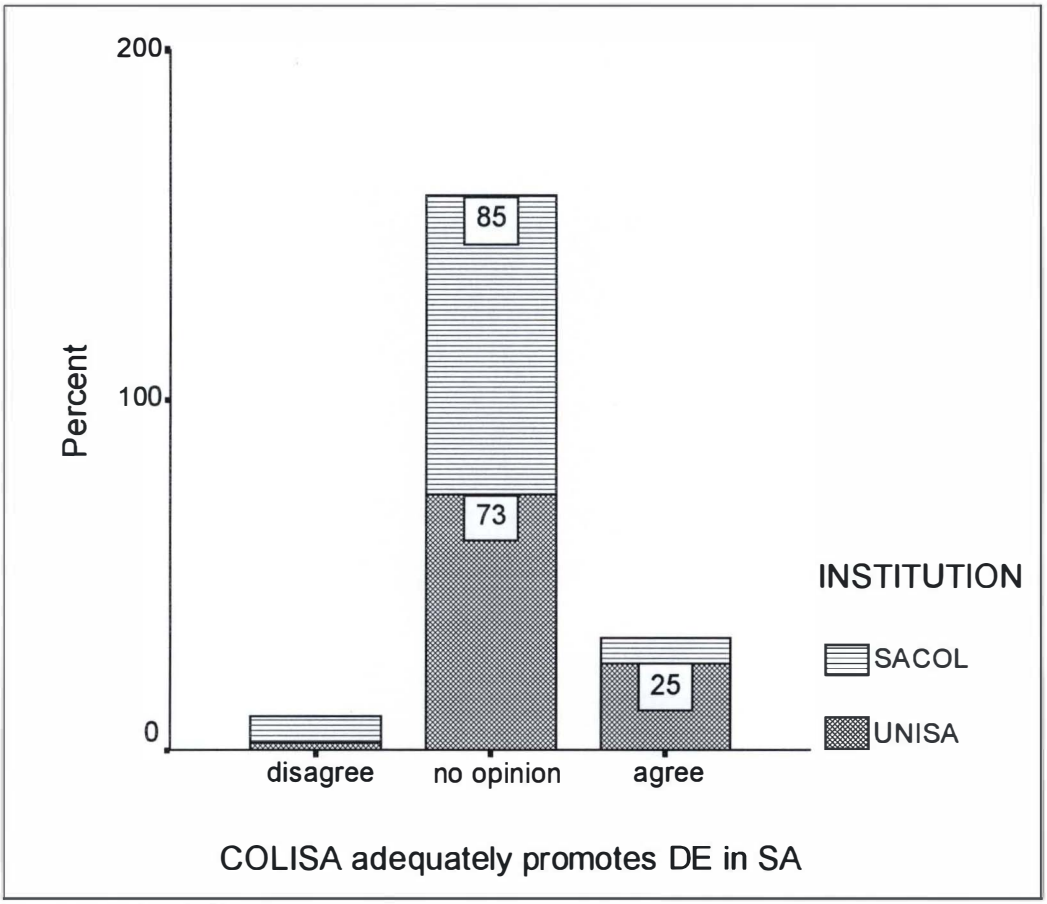

Figure 5.50. : COLISA

73% UNISA and 85% SACOL staff had no opinion on the statement that COLISA adequately promotes distance education in South Africa. 25% of UNISA and 8% SACOL staff agreed while 2% UNISA and 7% SACOL staff disagreed that COLISA actively promotes distance education in South Africa.

COLISA, a confederation of autonomous higher education institutions that aims at close collaboration by consensus, was founded by the University of South Africa, Vista University and Technikon Southern Africa. It is a national resource and reference point for providing quality higher education in South Africa. COLISA supports an integrated flexible learning system with regional nodal points within which quality distance education can be provided. It has

the potential to provide learning opportunities to a vast number of people, especially the disadvantaged, in an effective manner.

Vision

COLISA will put effective and flexible learning opportunities of quality higher education within the reach of everyone to meet the challenges of society in the twenty-first century by using and extending the capacity of its constituent members and partner institutions.

Mission

COLISA as a confederal body of higher educational institutions will provide, separately and jointly comprehensive and quality learning opportunities in terms of open learning principles within a flexible learning system by facilitating synergistic ventures in:

- teaching
- research
- community service programmes and administrative systems

to realise economies of scale and effective use of resources so as to create a culture of lifelong learning in higher education to meet learner expectations and future needs of a global and competitive society.

By cooperation and attaining economies of scale more can be attained than the sum total of individual efforts. COLISA's joint academic and technological capabilities will enhance its participation in the globalization of higher education.

Philosophies

COLISA believes in the maintenance of generally accepted national and international academic standards. COLISA also accepts that, it has a duty to

students to make quality higher education accessible to all. It also acknowledges, that the opening up of opportunities for re-education and lifelong learning must be undertaken so to provide a highly qualified workforce to employers. COLISA recognizes that it has a responsibility to government, the community and donors to offer excellent, affordable education within the confines of the economic realities of students as well as the national interest of subscribes. COLISA also believes that the interaction with the global academic community will strive to build unity and universality of teaching and research. Finally, COLISA maintains that it will aim to achieve the highest standards of scientific integrity in the interest of its staff and to foster academic freedom, democratic structures and autonomy accompanied by affirmative action.

Functions of COLISA

COLISA strives to attain its mission by :

- facilitating collaboration and communication between the constituent parties on both academic and administrative level;
- organising workshops, discussions and conferences and creating a forum for debate and the sharing of expertise amongst the constituent parties; disseminating information;
- establishing a Development Fund for the furtherance of the joint activities of the constituent parties;
- making joint submissions regarding higher distance education and open learning;
- promoting and coordinating joint research projects among constituent parties;
- cooperating with governmental and other bodies concerned with distance education and open learning;

- promoting the rationalization and consolidation, where appropriate, of the educational, academic and administrative activities of the constituent parties;
- acting where appropriate, as a representative of the parties to regional and international associations.

It is a great pity that staff do not see COLISA as playing a meaningful and active role with regards to distance education in South Africa. Although COLISA professes to have a policy framework, mission statement and philosophy in tune with expectations of distance education students and staff. It really falls far short in implementing and sustaining all these grandiose ideals that it set out to achieve.

5.5. HOW CAN THE QUALITY OF DISTANCE EDUCATION PROVISION IN SOUTH AFRICA BE IMPROVED?

With regard to the above question, students were given five statements. Respondents were asked to prioritize the five statements using a scale of 1-5. 1 being the highest priority to 5 being the lowest priority. The results were as follows:

5.5.1. Student response

STATEMENT	RATING (%)			
	1	2	3	4
Improve the quality of teaching staff			20	
Government should play a greater role in distance education provision				2
Enhance the quality of learner support	56			
In co-operate multi-media technology in delivery modes			22	

Table 5.3. : Improving the quality of distance education provision in S.A.

Table 5.3. shows that, the majority (56%) of the respondents prioritized the issue of enhancing the quality of learner support as being number one on their list in terms of promoting the quality of distance education provision in South Africa. 22% of the respondents prioritized the issue of incorporating multi-media technology in educational delivery as number two while 20% prioritized the issue of increasing the quality of distance education staff as number three. 5% prioritized the issue of government playing a greater role as number four and 2% prioritized the issue of only computer literate students be allowed to enroll at distance education institutions as number five.

5.5.2. Staff response

An open ended question was included in the staff questionnaire. The question read as follows: ***In your view, what measures could be taken to improve the type and quality of distance education provision in South Africa?***

The findings are as follows:

COMMENTS	%
Improve the quality of teaching staff by offering workshops and staff development programmes on an ongoing basis, especially Internet based teaching and learning application	15
Goverment should play a greater role in regulating the distance education sector.	8
Enhance the quality of learner support by reducing the staff - student ratio	23
Network and collaborate with other higher education institutions	5
Incorporate multi-media (Internet, Web learning and computer mediated applications) technology in educational delivery	49
TOTAL	100

Table 5.4. : Improving the quality of distance education provision in S.A.

Most of the staff (49%) indicated that the only way to improve and enhance the quality of distance education provision in SA, is to incorporate

multimedia technologies in teaching and learning such as online learning, web based instruction and the Internet. 23% of the staff felt that the quality of distance education could be improved by reducing the staff student ratio which will in turn enhance the quality of learner support. 15% of the staff indicated that efforts should be made to improve the quality of teaching staff by affording them workshops and in-service programmes, especially in the field of online instruction. These staff argued that by improving the quality of teaching staff, distance education will improve tremendously. 8% of the staff indicated that the only way to improve the quality of distance education in SA is that, the government should play a more significant role in regulating distance education. 5% of the staff indicated that distance education institutions should establish and develop stronger linkages and networks with other higher education institutions. This will pave the way towards the sharing of scarce resources and thereby improve the quality of distance education.

5.5.3. Difference between distance and open learning

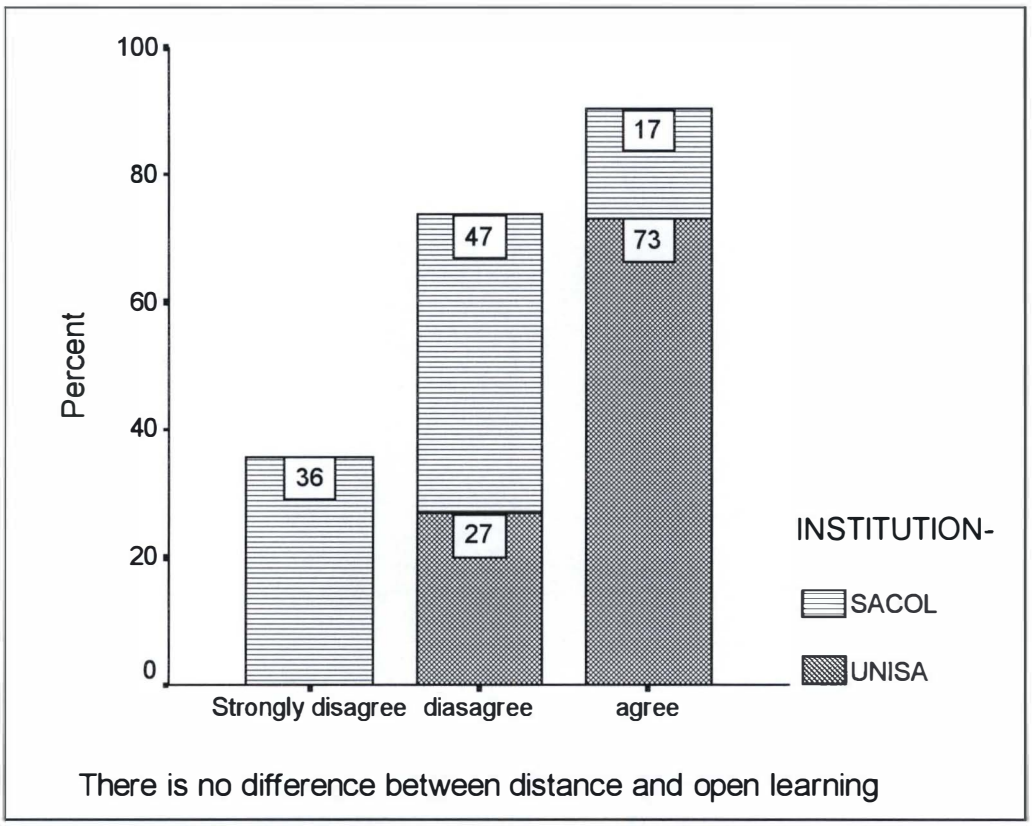

Figure 5.51. : Difference between distance education and open learning

The majority of SACOL staff (36% strongly disagree and 47% disagree) believe that there is a difference between distance and open learning. The majority of UNISA staff (73% agree) believe that there is no difference between distance and open learning while 27% disagreed. Only 17% of SACOL staff agreed that there is no difference between distance and open learning.

It was rather disappointing to note the high percentage of UNISA staff who believe that distance and open learning is one and the same thing. It is highly possible that this perception is one of the factors that adversely influences the attitude of staff towards students in terms of support, design of materials and the curricula itself. According to Bertram (1996), Open learning is a concept that is very much in a developmental stage in South Africa. Open learning is

very much different from distance learning. Open learning is underscored by its flexibility which allows a student to take courses or part of it from various institutions that s/he so wishes. In this way the student acquires the relevant number of credits to obtain the relevant qualification/certification. Open learning allows a student the flexibility to be resident at an institution for part of his or her studies and then move onto to a work site for further internship, etc. Thus open learning is a different concept altogether. However it must be pointed out that distance learning is moving in the same direction where institutions are aiming to incorporate the principles of open learning so as to promote flexibility.

5.6. CONCLUSION

- ***Popularity of distance education***

  Indeed, distance education as an alternate system of education is a very popular choice amongst tertiary students in South Africa. Students articulated many reasons about their choice for studying at a distance. Perhaps the most common reason was that they are fully employed and as a result distance education was best suited to them. Students went onto indicate that distance education was least costly as compared to face to face contact institutions. They also indicated that UNISA offers internationally credit qualifications and thus it was their popular choice of institution. SACOL students indicated that their institution was the only institution that offered their qualification. This is rightly so as was mentioned earlier in this chapter. SACOL offers inservice programmes to educators who are under qualified. The courses offered by SACOL are those that are aimed at upgrading qualifications amongst educators.

This study also concluded that distance study as an alternate system of education knows no boundaries in terms of race, colour and creed. Students studying via distance comprised of various age groups. However the age group 30-35 was most common in this study. This study also revealed that very few students above the age group 45 years were studying via distance.

Another important finding made by this study is that, distance education has a wide appeal amongst students in various employment fields such as nursing, community health, education, computers, administration, human resources and so on. The study showed that distance education is not a popular choice amongst a select few occupations.

One of the most interesting findings of this study was that, physical distance is not a key determinant in the choice for studying via distance. In this study more than 70% of the students reside less than 100km away from their distance education institution.

- ***Learner support:***
  - ***Quality and type of study materials***

The majority of the students were most disappointed with the type and quality of study materials. They indicated overwhelmingly that the study materials:

- have no relevance to the courses that they enrolled for.
- are not always sent/dispatched on time
- Out dated and confusing
- Costly to purchase

- are too theoretical
- Unstructured and difficult to understand
- Contain no clarity of concepts
- are usually not of a high academic standard
- Library and study centres are not adequately resourced

- ***Quality and type of teaching staff***

This study revealed that the majority of the students enrolled both at UNISA and SACOL felt that the teaching staff are:

- Most incompetent
- Not available when requested
- Not very helpful
- Are unsympathetic to student problems
- Are not racially biased
- Are usually unknown
- Cannot be contacted electronically

The majority of staff indicated that:

- Students do not approach them for support
- They do not have adequate time to offer support
- Their does not provide and make available adequate resources to enhance their teaching
- Their institutions do not hold and conduct workshops on a regular basis from which they can improve their teaching

- ***Level of technology employed in the delivery of distance education in South Africa***

Both UNISA and SACOL employ a very low level of technology in the delivery of distance education. In fact both institutions make

use solely of print materials without supplementing them with any other form of media. The majority of students indicated that they:

- Computer literate
- Have access to computers
- Would like to contact their staff electronically via email
- Would welcome study materials on the Internet

This study has shown conclusively that students are willing to accept and engage in technology enhanced teaching and learning. They indicated that they would very like to use the Internet to access their study materials and contact their staff. This is reason enough for institutions to begin to develop technology enhanced teaching and learning within the distance education framework in South Africa.

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CHAPTER SIX:

CONCLUSION AND RECOMMENDATIONS

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6.1. CONCLUSION

The context within which higher education operates, is currently undergoing a dramatic change. These changes have been brought about by the, increased demand for higher education and life long learning. The proliferation of information and communication technologies together with globalisation has also demanded changes in the nature of higher education provision. Policy makers and higher education providers need to examine these changes and begin to evaluate and select appropriate strategies to overcome these challenges.

The South African post apartheid higher education landscape had to contend with a higher education sector that was highly disjointed and fragmented. The cornerstone of apartheid education was built around restricted access and unequal funding in terms of education provision for the various race groups (Whites, Coloureds, Indians and Blacks). It is no wonder that the current higher education landscape is still grappling with the issues of restructuring and reconfiguration. Since 1994, three White Papers on Education and Training have emerged and yet there has been no finality on the shape and size of the higher education sector in South Africa. The challenges facing the South African higher education landscape is enormous.

In 1997, the Minister of Education elected a Task Team on Higher Education whose brief was to assist and advise the Minister on how to reconfigure the higher education landscape in South Africa. The task team concluded that South Africa has to reconsider the shape and size of its higher education landscape. Based on the various findings and recommendation of the task team, the Minister published a National Plan on Higher Education (NPHE).

The seriousness of the NPHE is underlined by the Minister's words (Address by the Minister of Education, 5 March 2001) that it is "not up for further consultation and certainly not for negotiation" and by the Plan itself where it refers (in Section 1.5) to "planning and funding levers to achieve policy objectives".

South Africa is more than seven years into the post-apartheid era and it is still, and will remain for a long time to come, a country in which there is a sharp difference between the "knows" and the "know-nots", the "haves" and the "have-nots" and the skilled and the unskilled. Education is therefore very important for this country, not only to eradicate these differences, but also as far as the economy is concerned. Perhaps the most important factor is to develop the people of this country so that South Africa can become a meaningful actor on the global economic stage. It has been argued over and over again that traditional higher education at public contact institutions is certainly not geared to make an optimal contribution to this development in its present form. The NPHE addresses these critical problems in a heavy-handed, top-down and regulatory way. The question can be asked whether South Africa's Higher Education Institutions (HEIs) should not take cognisance of international tendencies in higher education (HE) when addressing these local issues (Mackintosh, 1999: 143). HEIs worldwide tend to move towards multi-modal offerings, that is, offerings using different modes of delivery and programmes, thereby enhancing the offerings by using integrated technologies. In this way they could ensure access to lifelong learners and design and develop learner-centred programmes of high quality. These changes in the HE sector must be able to introduce dual mode institutions which in turn can promote educational delivery to both contact and distance education learners at the same time.

Upon analysis of the NPHE, it becomes abundantly clear, that the policy drive in South Africa, is to establish a single dedicated distance education institution through merging UNISA and TSA, and incorporating the distance education centre of Vista University. This seems to go against the international trend described above, since it isolates distance education from contact education, and could perhaps discourage traditional contact institutions from utilizing modern technologies to the full when re-thinking their classical "chalk and talk" approach to teaching and learning. Learners, and in particular lifelong learners, may in the process lose the benefit of healthy competition among institutions. The filling of the spectrum of delivery modes in South Africa may also be strained if only "contact" and "distance" are recognized for funding purposes. Our international contribution to education, especially in Africa where there is clearly a great need for it, may also be limited to a contribution by this single dedicated distance education institution, if the Department of Education drives this plan to the full.

Should our goal in South Africa not be to meet the educational challenges through the use of modern Information and Communication Technologies (ICTs)?

6.2. RECOMMENDATIONS:

6.2.1. Revise policy on Distance Education provision as contained in the National Plan on Higher Education (NPHE)

While the NPHE must be commended for attempting to provide a systemic framework for the development of the higher education landscape in South Africa, it nevertheless has many flaws which discredits the provision of distance education in South Africa. In attempting to provide a coordinated

plan for the Higher Education sector, the NPHE raises useful questions about quality provision and provides a framework for discussion. Specifically for the distance education sector, the NPHE makes the following provisions (Mays 2001):

- It lifts the moratorium on the introduction of new distance education programmes in contact institutions subject to the conditions that it will not fund new student places in current and new distance education programmes unless these have been approved as part of institutions' three-year rolling plans; and that approval must be sought for programmes for which subsidies are not required.

- It will not fund student places in 2002 in existing and new contact or distance programmes that are offered as part of public-private partnerships unless the programmes have been approved as part of an institution's three-year rolling plans.

- It paves the way to establish a single dedicated distance education institution from the merger, and some rationalisation, of UNISA, Technikon SA and Vista University of Distance Education (VUDEC).

While it appears that the NPHE attempts to reconfigure the higher education sector in South Africa, it must be argued that the NPHE fails miserably in addressing the distance education sector as a valuable and significant player in higher education in South Africa. The following assumptions about distance education are rather problematic as envisoned in the NPHE:

- ***"Higher education programmes ... increasingly exist on a continuum spanning distance programmes on the one end and face-to-face programmes on the other"*** **(NPHE: 60).**

Indeed the NPHE appears to offer a diluted, if not mixed message about Distance Education (DE). The NPHE does not appear to provide a clear cut stance about what it conceives distance education to be. There is no clarity on what the National Department of Education (DoE) perceives distance education to be and even more interesting is that the DoE does not see distance education has having a significant role within the higher education landscape. Mays (2001) argues that, placing DE provision at the opposite end of a continuum from contact provision, suggests a conceptualization of DE as either totally independent study or at best correspondence study. However, as the report goes on to note, DE providers are increasingly using a wide range of "other support" strategies. Thus on the one hand the distinctions are blurring, whereas on the other planning and funding reinforces the notion of a dichotomy.

There is no doubt whatsoever that distance education is a very popular choice of study mode in South Africa and it is hoped that the DoE will begin to reshape its policy around the role, policy and practice of distance education in South Africa.

- ***Concern about higher education institutions driven by "narrow market imperatives"***

The NPHE notes that there is growth in the number of private providers and public-private partnerships which offer a narrow range of services targeted at the most financially viable course offerings.

There is concern that these will not address the broader social needs of equity and transformation and that they attract income-generating students away from public institutions which are obliged to offer a wider range of courses, including those that will never be either self-sustaining on fees or profitable. Indeed, there is absolutely nothing sinister about this fact. International trends in higher education has shown over and over again, that there needs to be a strong partnership between all stakeholders and if that means partnerships between private and public institutions or even partnerships with industry and business, then so be it. A competitive higher education systems in terms of service providers is very healthy to foster good quality education. Students ought to have a wide variety with regards to choice of institution.

- ***Concerns about the impact of "virtual" universities***

The NPHE notes its concern about virtual universities by stating that:
"They cannot replace the traditional contact higher education institutions where scholarship, research, teaching and service are valued in equal measure where the focus is on the full range and breadth of disciplines. And more importantly, where knowledge generation and intellectual development are themselves the product of social interaction and engagement" p. 60.
It is rather absurd to note that the NPHE has strong reservations about the issue of virtual universities. International trends have documented thoroughly, the advantages of sustaining virtual schools and campuses. The NPHE believes that in a "virtual" university there is no scholarship, research, teaching and service, contact or direct interaction. The NPHE also goes onto to indicate that virtual universities offer a limited curriculum. This stance is a myth that must

be quelled with the contempt it deserves. Virtual universities are universities without walls. Such universities are developed by consortiums who attain resources from various other institutions and by so doing, virtual universities are in a position to provide a host of diverse and unique qualifications that are backed up by the best tried and tested curricula and staff that are available.

6.2.2. Development of Open Learning Institutions

According to Asmal (2000) numerous observations indicate that a global revolution is taking place in education. This is driven by the changing nature of work, the arrival of the information age, new global partnerships and an awareness of the need for an equal distribution of educational opportunities - within South Africa and among global partners.

It is possible to identify the following trends as characteristic of this global transformation:

- The emergence of a new open and yet not fully defined teaching/learning paradigm,
- The blurring of the distinction between face-to-face and distance learning to the emergence of the concept of flexible learning systems and
- The innovative application of technology to the delivery of education.

Indeed South Africa is no exception to these trends. It must thus be realized that if South Africa is to develop into a competitive nation in the economic global stage of the world, then she cannot maintain a ridged education and training system which was historically inherited from centuries of colonialism and apartheid. South Africa must move towards an open

learning environment – an environment that will be underpinned and characterized by:

- learner-centredness,
- lifelong learning,
- flexibility in learning,
- removal of unnecessary barriers to access,
- recognition of prior learning experiences and current competencies,
- learner support,
- expectations of success,
- cost-effectiveness and
- quality.

The translation of these principles into policy and practice is a daunting challenge that higher education in South Africa has to face. The NPHE sadly does not attempt to address the issues of open learning.

Asmal (2000: 1) correctly points out that "Open learning is not a synonym for distance education". As mentioned earlier in this chapter, the distinction between contact and distance education is increasingly blurred. It must be argued that many contact institutions would have to introduce DE provision in response to demand from learners for more flexible ways of accessing higher education. It does make economic sense for contact institutions to simply refuse students access because they cannot allow flexibility. The National Qualifications Framework (NQF) together with the South African Qualifications Authority (SAQA) allows for a new and rational qualifications framework in our country. The NQF allows for flexibility and portability of modules that students can take from various institutions towards the

completion of their set qualification. For example, a student wishing to complete a degree in Business Administration, may take a few courses from UNISA, University of Pretoria, Wits University, University of Natal, etc, which in total must give the student the required number of credit points. The number of credit points for a four year degree is 420. Thus the students may make up the required number of credit points from various institutions as long as the credit points are from institutions that have registered the courses with SAQA.

6.2.3. Government intervention in promoting technology enhanced distance teaching and learning

The approach to overcome the burden of employing technology enhanced teaching and learning could in great part be addressed by the government in various ways. Perhaps one way could be to free up the telecommunications market and thereby provide an enabling market to foster growth of technology and technology related industries within the economy of South Africa.

Countries and economies that have moved towards telecommunications privatisation and deregulation have reaped enormous benefits and are also in a strong position to penetrate markets in other countries as market opportunities arise (Green:1998). The obvious example of this is the United States, where information technology is the driving force behind the economic growth of the last decade. Other, perhaps more applicable examples include Latin America and Ireland, where telecommunication deregulation and privatisation have produced enormous economic benefits. Deregulation and privatisation of the telecommunications industry in South Africa should be done completely and cleanly and not half heartedly through the setting up of semi-state companies or other similar government run or influenced bodies.

According to Green (1999), technological change in the telecommunications industry is rapid and often brutal and companies operating in this competitive field have to be completely flexible and innovative to survive. Government or government related organisations simply cannot operate effectively in this environment.

The government policy should focus on reducing the cost of information technology to the end user. Import duties and value added tax (VAT) should be immediately removed from computer hardware and software (this is already the case in Mauritius). Mathews (1998) argues that, special corporate and personal income tax deduction should be introduced to allow individuals and companies to offset the purchase of computer equipment against earnings, at perhaps two times the purchase price. Soft loans should also be made available to higher education institutions and individuals to purchase computer equipment.

For distance education to reap the educational potentials of the information technologies, the instructors should be re-trained on how to use Internet related technologies. They should also assume a new role of a facilitator in learning and adopt a more learner-centred pedagogy in their instructions. In this perspective, Constructivist theory seems to be the right choice. According to Driscoll (1994), ...constructivist theory rests on the assumption that knowledge is constructed by learners as they attempt to make sense of their experiences. Learner actively seek to make meaning of experiences, learning by doing activities in context, and developing knowledge over time. However, distance learners are required to learn how to manage their own time and to take responsibility for their own learning.

Although the Internet related technologies are of huge benefits to distance education, integrating them with other media such as print, video conferencing, radio and television broadcasts would form a new learning domain. Bates (2000) therefore argues that this so called new domain of learning would enable distance education educators and students to engage in learning interactions more effectively thereby developing new and different forms of educational interactions. This integration of multimedia would thus appeal to a variety of learning styles and students will learn more effectively than they would from one medium alone (Rumble:1989).

Knowledge is key to development " the new technology can't solve the fundamental problems we face as a global community; poverty, marginalisation, environmental deterioration. But it can be integrated in our strategies for solving these problems" (Rumble,1997:23). Information and communication technologies have the potential for increasing access to knowledge for all (Spira:1999). Education, training, debt relief, democratisation, investment in infrastructures, improved and cheap telecommunications all have a part to play in an eventual narrowing of the information gap. But the opportunities offered by the Internet are also identified as positive elements in an already unequal world: clearly the South has much to gain form increased access to information and no time to lose.

6.2.4. Increasing the quality of learner support

This study has concluded that both UNISA and SACOL:

- engage students with poorly designed materials.
- rely on single modes of delivery, totally inappropriate for students.
- show very little if not no evidence of the creative use of multi-mediated modes of delivery.
- lack research into needs and contexts of learners.

- provide study materials that bear questionable relevance.
- study materials focus on the theoretical rather than the practical.

The following recommendations are provided to overcome the above pitfalls:

- ***Incorporating more face to face contact sessions***

It is strongly recommended that every effort be made to increase face to face contact sessions for distance education learners in South Africa. This could be achieved through two ways, namely conducting regular face to face sessions at the study centres in each of the regions where such facilities already exist. At the same time distance education institutions ought to develop and establish study centres in each of the regions. Perhaps these institutions could embark on a strong linkages and network drive where accords of understanding could be endorsed which will pave the way for the sharing of resources such as libraries and study centres. Partnerships with other tertiary institutions could be established. For example, UNISA could develop partnerships with schools and community libraries in the various communities and regions. UNISA and SACOL could also share resources with the University of Natal and Durban Westville in KwaZulu Natal. Both University of Natal and University of Durban Westville could also share UNISA's and SACOL's resources for their students as well.

Off course, the other way of increasing face to face contact sessions would be the employment of multi-media technologies such as satellite broadcasts, video and telephone conferencing. The use of real time Internet technologies is also a very good option that lends itself well to real time image and audio that resembles face to face and virtual reality.

- ***Provide more study centres***

  Distance education institutions ought to provide better quality libraries and study centres for its students. These centres should be based on service excellence where students can access them 24 hours a day. It was evident from this study that the majority of the students are in full time employment and as such their hours of work does not allow them to access these support services during normal hours of operation. It is thus recommended that distance education institutions begin to be more pro-active and sensitive to the needs of their students. One way of increasing the number of libraries and study centres is to engage in partnerships and networks to share available resources in regions.

- ***Employment of tutors***

  Distance education institutions must begin to provide more tutorial support to their students. This could be done by employing post graduate students from their institutions to provide support to undergraduate students. Tutors can be given rebates on their student fees as part of their remuneration to serve as tutors. Staff from other tertiary institutions in the region could be employed on a part time basis to serve as tutors. Arrangements and accords of understanding could be negotiated with tertiary institutions where staff could be inter-changeably employed to serve both institution's needs. The study has shown very clearly that most programmes offered by both UNISA and SACOL do not have the required number of staff to promote quality distance teaching and learning. Staff themselves from both institutions indicated that they have very large classes and cannot provide timeous and adequate feedback.

6.2.5. Employing Integrated educational technologies in distance education delivery

Worldwide there have recently been several phases of development in the use of a variety of educational technologies for the enhancing of teaching and learning, and which can contribute to a more learner-centred and accessible learning environment. According to Raymond (2000), these developments assist lecturers with the achieving of one of their primary objectives – the transmission of knowledge to others. We would rather refer to it as developments that would assist the lecturer in the facilitation of learning. The use of different educational technologies also help to create several learning environments outside the traditional lecture halls and laboratories, whereby different forms of communication between lecturers and learners are encouraged and nurtured for several reasons. According to Ridge and Waghid (2000:77), distance education has developed in to three phases which can be termed generations, namely:

- Printed materials characterize the first generation, sometimes called "correspondence study" or single medium, in which study guides are sent by mail from lecturers or tutors at correspondence institutions. Learners are given assignments, such as essays, letters or a reading list with a list of questions to complete, that correspondence tutors are required to mark.
- In the second generation a greater range of one-way communication media characterizes education - predominantly print, television, radio broadcasting and cassettes, or limited two-way communication via correspondence tutors or by means of face-to-face tutorials.

- The third generation, or telematic education, emerged in the 1990s. This requires the use of electronic information technologies such as telecommunications, computer conferencing networks, and audio and video conferencing. Two-way communication between lecturers and learners is therefore enhanced. Universities are increasingly using these resources to fulfil their goals of equity and access. By using these types of Information Communication Technologies, modern distance education is thus able to serve a larger and heterogeneous group of learners working in widely separated areas. It can be argued that South Africa's higher education institutions have already progressed to the next generation, the so-called mixed mode in which a new dynamic interaction is negotiated between the electronic information technologies and "face-to-face" lecturing.

- The fourth generation: In this generation, the distinctions between distance and contact education fade, and the focus is centred on providing learner and learning support in a number of ways. Although not all of the distance and traditional HEIs in South Africa have progressed through the different generations mentioned above, we are in a position where we can forge ahead and develop strategies that can implement and integrate different technologies in a variety of ways in order to facilitate learning. Technology-supported learning, which is learning enhanced by different ICTs, can consist of a variety of forms that augment the interaction between the lecturer and learner(s), even though they may not be in the same location at the same time. These ICTs can be divided into several categories, depending on the criteria used to distinguish between them. It is also important to note that some

of these categories vary between different sources and although they can be distinguished, they cannot be separated, as they are linked in an integrated manner.

6.2.6. Choosing the most appropriate technology for distance teaching and learning

There are different types of educational technologies that can be used either separately or as an integrated system of delivery. The combination and integration of these technologies depend on many factors, such as the target population, learning environment, the formulated learning outcomes, types of learning activities that should be completed to achieve the learning outcomes, assessment criteria and cost effectiveness of the technology applied.

The following three categories can not be clearly separated from each other and should be used in an integrated way in different combinations. However, for our discussion we have segregated them.

6.2.6.1. Computers and networks

Higher education institutions ought to focus on computer-based (also sometimes referred to as computer–assisted), computer–supported and computer-mediated teaching and learning, which can be used either synchronous or asynchronous. Computer-based education entails interactive computer applications which allow the learner to select a variety of functions within a programme. It also makes provision for the learner to access information in non-linear ways. Depending on the type of application, learners can also obtain information concerning their performance (Raymond, 2000:2). Although there is no actual interaction with the lecturer or tutor, the learner interacts with the instructional units, presented through the computer

(for example CD-ROMs and interactive video-discs (IVDs)). Computer networks (for example internet) make it possible for learners to access information from data sources throughout the world, and they also enable lecturers to interact with individual learners on campus or in remote locations. For example, lecturers can use e-mail to communicate with learners concerning their assignments, for feedback on assessment activities and answers to specific questions. Web-based courses that are offered in their entirety over the internet, are currently mainly text-based and asynchronous. These courses should be differentiated from web-supported courses, which use the Internet to augment and enrich teaching and learning environments. Another example of computer-mediated education is the use of interactive compressed video (ICV) systems. ICV systems combine computers with telephone lines so that they can transmit signals, and this involves the use of Codecs - (Codecs are devices that compress or decompress the signal on both sides of a digital phone line). There may be a slight delay of sound and some impairment in video quality, depending on the type of equipment used (Raymond, 2000:3). Another application using networks is the use of cell phones in the education environment. Through the use of wireless application protocol (WAP), learners can access the internet with cellphones. The current developments worldwide and the expansion of networks in South Africa ought to contribute to the implementation of communication applications between lecturers and learners and amongst learners (for example through SMS messaging).

6.2.6.2. Audio-visual communication systems

The second category that institutions ought to focus is on the different applications of audio and video communication technologies that can be used either synchronously or asynchronously. This type includes audio- and videocassettes as well as audio- and video conferencing, where rich multi- and mixed media environments are included.

This type of media can either be presented asynchronous (for example via audio- and videotapes), or synchronous when using audio- and videoconferencing in real time (two-way audio- and video communication). It is, however, possible to record these sessions so that they can be screened at a later stage over a computer network for asynchronous learning (audio-and video-on-demand). However, current limitations on bandwidth do not make this a feasible option in South Africa.

6.2.6.3. Interactive satellite communication

Higher education distance institutions must begin to plan the integration of all the types of technology available. This will become more and more possible as the current limitations on bandwidth (with landlines) and less expensive new developments become available. The privatisation of Telkom will also play a large role in providing different services at more competitive rates. This could lead to the use of presentations in which multimedia rich simulations occur, and radio and satellite broadcasts prevail. This combination is useful for the interaction and integration of computers with text, graphics and animations and audio and video clips. The use of satellite communication systems to convey signals may make interactive television systems for educational purposes a reality, as there is almost no limitation on bandwidth. Currently however, this is too expensive to implement on a large scale. There are already different ongoing projects supported from abroad to expand current networks so that they reach people in remote areas. Green (1989) argues that another recent and exciting development is "Bluetooth" – a wireless technology that will be able to connect a growing number of personal gadgets to one another, for example a cellular phone, a notebook computer, and PDA (Personal Digital Assistant). Although it is theoretically possible to connect these devices, each of them has its own communication language. Back in the office you also find a similar problem where PC's are connected

to networks, printers and scanners via cables which are connected manually and are usually designed for single usage. Bluetooth aims to give the solution by inserting a tiny chip and an antenna into each device, thereby wirelessly linking them when they are in close proximity. The previous paragraphs give an overview of current available technologies for educational use. The integration of all these types of technologies is already a reality, although the application and use thereof is still dependent on different factors that should be taken into account when sound educational decisions are to be made.

What lies ahead for higher education? Will it survive in a world where technology has changed everything overnight? An extreme view of our future is offered by Green (1999), who believes that "universities won't survive ... higher education is in deep crisis. Already we are beginning to deliver more lectures and classes off-campus via satellite or two-way video at a fraction of the cost ... . The college won't survive as a residential institution." (Green, 1999:15). Initial responses to this prediction were that it is premature. The fact, however, is that higher education institutions need to change.

6.2.7. Encouraging and promoting technology enhanced distance teaching and learning

Higher education institutions that previously focussed on either contact or distance education, must now begin to adapt their modes of delivery in order to meet the needs of their new clientele. The effects, wants and needs of globalization dictates that higher education landscapes ought to reconfigure their structures in terms of developing a new type of worker, namely the knowledge worker. The emphasis on technology and its role in the economic sector cannot be overstated. Research has proved that technology based teaching and learning practices have resulted in huge benefits to both

institutions and students alike. The returns on quality, provision and access have been the most significant benefits in terms of technology enhanced teaching and learning. The role of the learner has now shifted to the epicentre of teaching and learning. Learner needs and support are now central to any paradigm on teaching and learning. It is therefore of paramount importance that higher education institutions begin to adopt and facilitate a learner centred approach in terms of adopting technology enhanced teaching and learning systems.

It must be recognized that the South African learning population is diverse, and has therefore diverse learning needs. The need for technology literacy (as reflected in the critical cross-field outcomes for South Africa), as well as the fact that many of our learners are already experienced technology users, have to be taken into consideration. These experiences provide them with new expectations from technology-supported learning. Distance education institutions will have to consider the application of technology in their teaching and learning endeavours. Amongst others, the following principles serves as a guideline towards technology adoption:

- Quality digital infrastructure and appropriate resources.
- Adequate bandwidth, access, computer power and support for interactive multimedia web-based applications.
- The opportunity for asynchronous learning even if they are residential learners.
- Show respect their different learning styles and provide individual opportunity for growth and development.
- A partnership in the designing of the teaching and learning process as well as learning activities.
- Policies and procedures that encourage, motivate and facilitate learning activities.

- Adaptable processes that can help them to personalize learning based on their talents, abilities and styles.

These expectations can be seen as great opportunities to encourage, understand and involve the net-generation in building strong bridges for education in the 21 st century. We cannot, however, deny the fact that we also have learners who see the lecturer as a partner in their learning process and activities, and the institution as a place to acquire skills and knowledge required to prosper in their jobs and lives. They are socialized in the physical world and very isolated in the digital world. They are comfortable with synchronous learning, as they grew up in an environment that was dominated by passive learning. These learners will have a hard time adapting to technology and technology-supported education. They need the lecturer's support and access to support staff in case of problems and questions related to technology (Nasseh: 1997).

Additional training in technology literacy is seen as an important way to address these learners' needs. Higher education institutions should plan teaching and learning at a macro level by integrating learners' learning needs and their technological skills development. The so-called mixed mode of delivering education must include encompassing learner support. The aim is to develop self-directed learners who can access other resources whilst relying decreasingly on the lecturer. Programmes should also be designed in an integrated manner that will ensure that different media and technologies are utilised to their full potential in order to achieve the desired and stated learning outcomes.

6.2.8. Establishing Benchmarks (Norms and standards) for the employment of technology enhanced distance teaching and learning

The following benchmarks distill the best strategies used by colleges and universities in the USA that are actively engaged in technology enhanced teaching and learning. It is recommended that distance education institutions adopt the following list of benchmarks that focuses on teaching and learning and learner support within the technology enhanced teaching and learning framework:

- Learner interaction with lecturers and other learners is an essential characteristic and must be facilitated through a variety of ways, including the use of various media such as the radio and television broadcasts, email, internet, video and telephone conferencing, etc
- Feedback to learner's assignments and questions must be constructive, positive and provided in a timely manner.
- Learners are instructed in the proper methods of effective research, including assessment of the validity of resources. Learners receive information about programmes, including admission requirements, tuition and fees, books and supplies, technical and proctoring requirements, and learner support services right from the onset
- Learners are provided with hands-on training and information to aid them in securing material through electronic databases, interlibrary services, government archives, and other resources.
- Throughout the duration of the programme, learners have access to technical assistance, including detailed instructions regarding the electronic media used, practice sessions prior to the beginning of the course, and convenient access to technical support staff.

- Questions from learners directed to support personnel are answered accurately and quickly with a structured system in place to address learner complaints. But, one has to take cognisance of the possible pitfalls of technology-supported learning.
- There is a temptation for instruction to become excessively didactic, with the instructor presenting with a minimum of instructor feedback or learner interaction.
- Informational, with the learner viewed as having received the important information, yet without demonstrating an ability to utilize it experientially and creatively in novel situations.
- Disjointed, with feedback delayed for extended periods or non-existent; with instructors simply lecturing and learners taking a test or doing a project devoid of ongoing feedback. It should also be kept in mind that learning at home is lonely. A dedicated electronic mail (e-mail) list supplementing a web-course can however provide interaction and overcome logistical problems of geographically dispersed learners.

  (Adapted from The Institute for Higher Education Policy, 2000: 25-26)

6.2.9 Reconsidering distance education learner needs

Progressive education is epitomized by natural learning processes (ie. the learner has a natural desire to learn, and given the opportunity, willingly engages in the learning process), contextual learning (learning, like life, has little meaning in isolation), immediate and continual feedback (learning occurs most rapidly and with greater generalizability when learners receive immediate feedback from interacting with the environment), and knowledge leading to adaptability (learners are said to have knowledge when they have the ability to utilize fundamental skills creatively in novel situations) (Dewy,

1910 in Spira, 1999: 2). Experience confirms that active learning exceeds passive lecture and in-class delivery of content in its effectiveness, and that understanding comes from involvement. Higher education institutions should thus employ technology to facilitate learning (Cronje & Clarke, 1999: 219). Technology-supported learning should therefore include:

- Exploration and problem-solving, both individual- and team-based, using both information resources and access to masters and experts.
- Multimedia and multi-sensory presentations of material to learners.
- Creation of simulated learning environments such as science laboratories, geographic and economic models, and language immersion simulators.
- Learner presentations to lecturers and fellow learners to enable them to "learn by teaching".
- Enhancement of class discussion, made possible by electronic availability of study materials.
- Teamwork, facilitated by technology-based collaboration.
- Lecturers to serve as mentors and coaches, not content deliverers.
- Communication outside the class by means of electronic mail between the lecturer and the learner, among learners, and beyond the class to fellow learners.
- Evaluation of the course processes and individual progress and assessment activities should be incorporated within the course.

Learner support is not related to distance. Learners form support groups irrespective of geographical boundaries. Instrumental, rather than social supportive grouping is possible, because factors such as professional and academic interests can be taken into consideration. The learner can suffer from an information overload and learning then becomes the aimless

exploration or simple retrieval of information. Attention should be given to information literacy. Asynchronous learning programmes provide too much, not too little learner control. The flexibility of asynchronicity can result in procrastination for those learners who are too busy to log on regularly, which in turn leads to their falling behind with respect to deadlines. Essential learning factors such as personalized feedback and interaction is required to break the barriers of learner control. Without these learner support structures, distance can be dark. If contact time is reduced, programmes should provide information on learning management issues such as clarification of the outcomes, and available resources (Cronje & Clarke, 1999: 214). It can be concluded that an effective educational model for South African institutions of higher education should:

- Be learner-centred including learning-centred.
- Be in line with global education.
- View lecturers and learners as teams to accomplish the task of learning.
- Provide educational opportunity that is independent of time and place.
- Support empowerment and self-directed learning.
- Include interactive multimedia and adaptive educational resources.

The revolution of technology development certainly causes imperatives on the development of quality teaching-learning programmes in a modern HEI. Technology remains a tool, indeed a very important one, through which modern offerings of programmes can be enhanced considerably if planned and implemented properly. The most important features of the process to get there is to make sure that delivery methods and teaching-learning processes:

- Are not restricted by national strategies.
- Are using a variety of technologies in an integrated manner.
- Have sound quality assurance and adhere to minimum guidelines and benchmarks?

- Accommodate diverse learners' and learning needs.
- Is supported by a sound strategy which is based on a clear institutional vision.
- Balances centralization with decentralization.

6.2.10 Summary of recommendations:

- ***Revise National Policy on Distance Education provision in SA***

  The Minister of Education needs to rethink government policy on distance education provision in SA. The NPHE needs to be revised in order to strengthen distance education initiatives such as:

  - the unbundling of distance education institutions (Vista, UNISA and Technikon SA) instead of clustering them.
  - Privatize the telecommunications industry so as to promote competition which in turn could lead to lower costs in telecommunications.
  - Promotion of Open Learning Institutions in South Africa in order to develop a flexible higher education system which will encourage students to access tertiary education in SA.
  - Exempt computer hardware and software from value added tax (VAT) and customs (import duties). This will make computers more accessible to students which in turn could help sustain and develop technology literacy amongst South African students.

- ***Study Materials:***

  The format and quality of study materials must take into account the type of learners and their appropriate needs. The study materials must be

relevant, current and up to date. Curriculum together with materials development specialists must be enlisted to develop study materials that will be interactive and supportive to students.

- ***The use of technology enhanced teaching and learning***

  Learners are supported to become independent learners through the use of various forms of technology for tutoring at a distance, contact tutoring, teaching on assignments, mentoring (where appropriate), counselling (both remote and face-to-face) and the stimulation of peer support structures. Levels of technology to be employed must be carefully and systematically selected so that they cater for all types of students, namely those that are technology literate and also for those who are not literate in the use and application of technology.

- ***Tutor and staff support:***

  Tutors are selected and trained for their role of facilitating learning. The training places particular emphasis on equipping tutors to analyze and assist learners with language and learning difficulties. Tutors are accessible to learners for individual tutoring. Tutors are trained to teach on assignments by giving constructive feedback. Adequate administrative and professional support is provided to tutors. Tutor performance is monitored regularly.

- ***Provision of adequate contact sessions:***

  Sufficient contact sessions are arranged to enable learners to use the course materials effectively for learning.

- ***Feedback***:

  The turnaround time on assignments is kept to a minimum and specified to the learners so that they can use feedback to inform their learning on an

ongoing basis. Feedback is sought from tutors for the review of courses and programmes. Administrative staff are trained to be helpful, clear and consultative in the way they relate to, and make arrangements for learners. The obligations and responsibilities of the learners and the educational provider are made clear at registration. It is clear what resources and equipment the provider will supply, and what the learner will have to possess.

- ***Learner support systems:***

  There are functioning systems for follow up and support of learners throughout the duration of their study. Learners have access to the facilities (for example, libraries) and equipment that are necessary for their successful learning. Learner structures such as student representative councils and faculty associations are established, recognized and empowered to represent learners on structures of institutional governance. Satisfactory and cost-effective arrangements are made to meet learners' needs for physical facilities for study, tutorial, and resource space. Learners have access to counselling before and during their course or programme, as well as after its completion. Academic support is built into the design of the course materials.

The study has concluded that distance education is very popular amongst South African students pursuing a tertiary education qualification. Given this finding, it appears that distance education is well placed for expansion in both the public and private sectors. However, it must be pointed out that, expansion cannot take place without additional investment, especially in learning technology, staff development and student support. The study has provided considerable evidence indicating that the quality of distance education in SA is of a very poor quality, the teaching staff are also of a poor quality and

further, the levels of technology employed in the provision of distance teaching and learning is unacceptably low. Generally, the study has revealed that institutions lack the investment in integrated curriculum and course design and other development processes in terms of supporting distance education staff and students. The study also showed that higher education institutions have underestimated the need for a well-developed system of student support and well trained professionals in the distance education curriculum.

Indeed there is considerable work to be done in terms of modernizing distance education courseware, improving student support, and undertaking essential efficiency reforms. With proper government intervention and institutional support, distance education can become a vibrant and significant contributor to the higher education landscape and make an invaluable contribution to the development of human resources in South Africa.

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GLOSSARY

ABE Adult Basic Education

Algorithms Specific, well-defined rules for solving a problem, many times including diagrams or flow charts. Although originally the term came from mathematics, computer programming brought it into linguistic use -computer programs were referred to as algorithms.

Amplitude Size of voltage or magnitude of wave form in data or voice transmission --AM radio is amplitude modulation. FM is frequency modulation. In AM radio it is the magnitude or height of the light wave that is used, while in FM it is the frequency or closeness of the waves to each other that is used.

Analog signals Audio/video signals currently used in broadcasting where the signal performs transmission tasks by translating continuously variable signals (physical variables such as voltage, pressure, flow) into numerical equivalents, continuously varying and representing a range of frequencies. Current TV and radio signals and phone lines are analog.

Artificial Intelligence Computer systems which perform functions normally associated with human reasoning and learning, processes such as imagination and intuition.

Audiographics Computer-based technology that permits simultaneous transmission of voice and data communication and graphic images across local telephone lines in a way that is interactive between instructor and all participants.

Asynchronous Literally not synchronous or at the same time. A transmission method in which each byte of character of information is individually synchronized, usually by the use of "start" and "stop" bits or elements. Allows characters to be sent at irregular levels. Used in lower speed transmission (manual data input). (See Synchronous).

Bandwidth In telecommunications, the maximum frequency (spectrum) measured in Hertz or cycles per second, between the two limiting frequencies of a channel, or in computers, the speed at which data can be transmitted on a communications frequency.

Baud (or baud rate)	Bits per second (bps) in a binary telecommunications transmission
Binary code	Scheme or numbering system having only two numbers, 0 or 1, for encoding data using binary digits (either 1 or 0, on or off)
Bit	One binary digit, the smallest part of information with equally likely values or states, 1 or 0, yes or no, on of off--in electrical communication, represented by the presence or absence of a pulse.
BOU	British Open University. Also known as OOUK - Open University of the United Kingdom. One of the pioneer tertiary distance education institution of the world
Byte	A group of contiguous bits, usually 8, that form a character.
C-band	Satellite uplink/downlink frequency operating on the lower end of the micro-wave spectrum, shared with terrestrial microwave services
Cable Television	Use of a broadband coaxial or fiber optic cable to deliver video signals directly to TV sets. Current systems can deliver signals in both directions.
CAD	Computer aided/assisted design
CAI	Computer-assisted instruction--instruction mediated by computer in which the system allows for remediation based on answers but not for a change in the underlying program structure.
CATV	Community Antenna TVN now known as cable TV
CBT	Computer-based training-instruction primarily delivered by computer, with a more complicated branching program of remediation and answering. (See Hypertext media).
CCTV	Closed Circuit Television - usually in house network and broadcast
CD-ROM	Compact Disk-Read Only Memory laser-read data, video and audio disks
Channel	In communication, a signal path or section of the electromagnetic spectrum which is uniquely assigned for a particular use.

Chip	An integrated circuit made of silicon and containing electronic components as small or smaller than 1cm.
Coaxial Cable	A thickly insulated metallic cable for carrying large volumes of data or video, consisting of a central conductor surrounded by a concentric tubular conductor. Typically used in networks covering a limited geographic area. Gradually being replaced by fiber optics.
Codec	Device used to compress a signal on both sides of a digital telephone line
Compressed Video	System by which a vast amount of information contained in a TV picture and its accompanying audio signal is squeezed or compressed into a fraction of its former bandwidth and sent onto a smaller carrier, with some information sacrificed in transmission, resulting in some diminishing of color, clarity and some "ragged" motion. It can be delivered over land lines, broadcast or satellite, but results in many more signals being sent more economically. The compression ratio of 234:1 can make a Matchable picture deliverable at 384 kilobytes per second, which is .043% of the original information in the signal.
CPS	Characters per second measure of speed of printers and other output devices
CPU	A computer's central processing unit which directs most of the computer system's activities, consisting of the control unit, the arithmetic/logic unit (ALU), and the processing registers.
CRTVU	China Central Radio and Television University. Largest Distance Education Institution in the World.
DoE	Department of Education. National Department of Education of the Government in South Africa
DDS	Digital Direct Satellite
Desktop Publishing	Programs that enable the user to use a microcomputer and a laser printer to produce relatively high-quality publications.
Digital signals	**A**udio/video signals that are discrete points of data--representing the future of video products and transmission, which perform transmission tasks by noting the presence or absence of physical signals in a particular position: this on or off conditions represents binary data

DE	Distance education. Subset of distance learning that includes evaluation by distance educators and two-way communication with them which usually includes the structuring of media content and use by the educator.
Downlink / Uplink	Programs are "uplinked" to the satellite transponder, and "downlinked" to the ground receiving dish.
EMDE	Electronic Mediated Distance Education. The use of electronic media in distance education
E-lecture	Lecture (text) delivered via electronic mail to networked individual computers
E-mail	Electronic mail sent via computer to other networked computers
Electronic Bulletin Boards	Information services that can be reached via computers connected to telephone line that allow users to place or read messages from other users.
End-user	Ultimate consumer of a service
Fiber Optics	Newer, high-tech delivery system using attenuated glass (quartz) fiber hardly thicker than a human hair, which conducts light from a laser source. A single glass fiber can carry the equivalent of 100 channels of television or 100,000 telephone calls, with even more capacity possible by encasing many fibers within a cable. Developed by Bell labs and Corning in the later 1960s, it offers many advantages carries tremendous amount of data at high transmission speeds, does not experience signal degradation over distance as does coaxial cable, and is a multipurpose video/radio/phone/digital computer data system.
Frequency	The number of recurrences of a phenomenon during a specified period of time --- in communications, the number of recurrences of light and electricity or the number of times the signal repeats the same cycle in a second-the measurement of electrical frequency is the Hertz.
FTP	File Transfer protocol. Enables a user to copy one file to another file on the Internet
HEIs	Higher Education Institutions

Hertz	(Hz) Unit of frequency--one Hz is equal to one cycle per second. Named in honor of Heinrich Hertz, first to detect such waves in 1883. Megahertz is one million hertz.
Hypercard	Brand-name for Apple/Mac product--simple authoring system for lower level interactive computerbased instruction or information management. A PC-based hypertext system is **Quest or Linkway**.
Hypermedia	Multi-level interactive computer-based instruction or information management system that includes video, slides, graphics, sound, and other systems controlled through the hypermedia system.
Hypertext	Multi-level interactive computer-based instruction or information management system
ICTs	Information Communication Technologies
HTML	Hypertext Markup Language. A series of codes used to format information such as Web pages, hypertext, etc
I/O Operations	Input / Output operations, instructions provided by a program for inputting data into internal memory and outputting information.
Interactive Video	In authoring and using interactive video, there are four production/use levels considered industry standard.
Intranet	An internal or in house network. It is a ype of local area network
ISDN	Integrated Services Digital Network - A digital service which includes phone, high fidelity audio (including audiographics), massive computer data relays, video (NTSC and HDTV), with all services on fiber optic.
ITFS	A low-powered, over-the-air broadcast system operating at a frequency above that of normal TV. The signal travels only a short distance (20 miles--then a "repeater station" is used) and offers a degree of confidentiality over broadcast. Often called "wireless cable," ITFS requires special equipment (downconverter) to receive the signal and change the frequency to a normal TV signal for viewing on a regular TV set. The ITFS system has great potential, because wired cable installation is becoming prohibitively expensive in densely populated areas.
Ku-band	Most popular format for satellite uplink & downlink reception. It is used exclusively for satellite communication.

LAN Local Area Network communications network connecting computers by wire, cable or fiber optics link that serves parts of a company located close to one another, generally in the same building or within

Laser Discs Played on a compact player using a low-power laser, each side of the videodisc contains 54,000 individual frames, which can be viewed continuously as motion or individually as still frames or signal pictures, pages of information like computer screens. Each frame can be searched out and viewed by the user through the player's remote control, the disc stopped at any time, played in slow motion forward or reverse, of "step" through the material one frame at a time. Since no physical "needle" or "head" touches the disc, stopping and repeating will not harm the disc. Two audio tracks are also available--one of which could be recorded at different levels of information complexity, in different languages, or with different instructions to different users (students & teachers). Currently discs are "read-only," meaning that once the video/audio and data information are mastered on the disc, it cannot be changed (see CDROM). Newer technologies such as optical memory systems are now widely available for WORM (write once read many), so that changes in the information can be done without reproducing the entire disc. With the addition of digital compressed audio systems, audio messages can also accompany still frames, with a maximum audio message of 40 seconds per frame. The videodiscs can and more often today are used with a computer, resulting in a Level 4 interactive video system (See Levels of Interactive Video), where computer images can be displayed directly on the screen or on a separate computer monitor.

LCD Liquid Crystal Display used in many laptop or portable computers, it uses a clear liquid chemical trapped in tiny pockets between two pieces of glass. Each pocket of liquid is covered both front and back by thin wires. When current is applied to the wires, a chemical reaction turns the chemical a dark color, thereby blocking light. The point of blocked light is called a pixel.

Listserve A programme that administers a mailing list

MEU Mind Extension University: Mega University located in the United States

Microwave High-frequency radio waves used for point-to-point transmission, by using line-of-sight towers, higher frequencies than AM or FM or shortwave.

MIS	Management Information System-computer-based processing and/or manual procedures within an organization to provide useful and timely information to support decision-making on all levels of management.
Mbps	Megabits per second. One million bits per second, the digital bandwidth occupied by a signal (See DS-1).
Multipoint Distribution	When one origination site sends the same programming simultaneously to many different reception sites.
NCHE	National Commission on Higher Education. This Commission led to the establishment of the Council on Higher Education.(CHE) It is a statutory body in SA entrusted with Higher Education.
Network	Two or more computers are connected together
Newsgroup	A type of discussion group found on the Internet
NTU	National Technological University--a consortium of engineering, science and technical colleges with a satellite delivery system of graduate and professional courses in the sciences.
NUTN	National University Teleconference Network (1982), created to provide a means of information sharing and exchange, primarily by satellite delivered teleconferences, with approximately 260 higher-education institutions as members
ODE	Open Distance Education
OFDE	Open Flexible Distance Education
OFDL	Open Flexible Distance Learning
ODL	Open Distance Learning
OUUK:	Open University of the United Kingdom
PAD:	Personal Access Device
PAL	European engineering standard having 625 horizontal video resolution lines
PRTVUs	Provincial, Autonomous Regional and Municipal Television University located in China. There are about 43 such universities in China. These institutions are affiliated to the CRTVU.

SAIDE South African Institute of Distance Education. It is a non governmental organization in SA which promotes distance teaching and learning.

Satellite Satellite age began in 1957 with Sputnik, and commercial operations in 1974 with Westar launched by Western Union, and RCA with Satcom. These and other satellites orbit approximately 22,000 miles above earth at speeds coinciding the earth's rotation, thus providing a fixed target for signal transmission and distribution. Each satellite has a number of transponders which receive the signal and bounce it back to earth, where it is received by any of the dish-shaped earth stations (satellite dishes), then transmitted via cable, phone lines, or microwave to its final receiver TV set. The more powerful the transponder, the smaller the dish required to receive it, leading to a new development, direct broadcast satellites. Approved by FCC in 1982, this now permits satellite programming direct to homes, schools, industry. Satellite technology has been a major influence on educational telecommunications and instructional programming, and will likely to be the next major technological step for education, as costs continue to decrease.

Satellite Dish An earthbound parabolic antenna used for receiving satellite signals.

Star Schools Program mandated by Public Law 100-297 in the to expand educational opportunities to elementary and secondary students in isolated, small and disadvantaged schools in the US. Primary objective is to provide opportunities in math, science and foreign language instruction for students who otherwise would not be able to enroll in such classes.

Synchronous A transmission method in which the synchronizing of characters and bits is controlled by fixed timing signals generated at the sending and receiving stations. Both stations operate continuously and are maintained in a desired phase relationship. Any of several data codes may be used for transmission, so long as the codes utilizes the required line control characters. Usually used in high speed circuits because there is less overhead than for asynchronous transmission (See Asynchronous).

Teleconference Simultaneous multi point program usually distributed via AUDIO only (phone or other audio). Some call conferencing via satellite on video a "teleconference." To distinguish more accurately between two well used technologies, we shall call one using video a "videoconference."

TELI	Technology Enhanced Learning Investigation. It is a Report presented by the National Department of Education in SA in 1996. The Report outlined the policies and plans for the use of technology in education and training in SA. It was compiled by Mr Vis Naidoo, the Director: National Centre for Education Technology and Distance Education
UNISA	University of South Africa
URL	Uniform Resource Locator
USDLA:	US Distance Learning Association
Videoconference	Simultaneous multi-point program distributed via VIDEO and AUDIO (either I-way video, 2-way audio; I-way video, 2-way audio; or 2-way video/audio
VR	Virtual Reality. It is a computer created sensory experience that allows a participant to barely distinguish a virtual experience from a real one.
WAN	Wide Area Network
WWW	through the Internet

APPENDICES

APPENDIX ONE

QUESTIONNAIRE
DISTANCE EDUCATION STUDENTS

Dear Respondent

I am undertaking research on distance education as an alternate system of education in South Africa. Therefore, it will be highly appreciated if you could please complete the attached questionnaire and post it in the self addressed envelope that has been enclosed Presently there is a paucity of information about South African distance education. My study is thus aimed at providing valuable information about the popularity of distance education amongst South African students and the levels of technology that are being employed in the delivery of distance education in our country. There is no doubt, that your responses will definitely enhance the value and quality of my research findings.

PLEASE TAKE NOTE OF THE FOLLOWING:

1. All your responses will be treated with strict confidentiality
2. Your identity will not be divulged under any circumstance
3. You must answer all questions
4. There are no right and wrong answers
5. Respond to each question in a manner that will reflect your very own, personal and honest opinion.

Thank you for your support, co-operation and valuable time.

Best wishes

Devan Govender
Student No: 8320277
Faculty of Education
UDW

STUDENT QUESTIONNAIRE

A. For each of the following statements, tick the box which indicates the extent to which you agree or disagree about distance education

Reasons For Enrolling At A Distance Education Institution	Strongly disagree	Disagree	No Opinion	Agree	Strongly Agree
1. I had no choice in the matter	1	2	3	4	5
2. It is cheaper to study at distance education institutions	6	7	8	9	10
3. There is no face to face/full time institution close to my home	11	12	13	14	15
4.The quality of tuition is far superior than full time institutions	16	17	18	19	20
6. I have a full time job and thus distance learning was my only alternative	21	22	23	24	25
7. It is easier to pass courses via distance education	26	27	28	29	30
8. My course is not offered at full ime institutions	31	32	33	34	35
Quality And Type Of Study Materials					
9. Study materials are always sent on time	36	37	38	39	40
15. Study materials are usually out dated and boring	41	42	43	44	45
10. Study material always comprise of printed materials	46	47	48	49	50
11. Study materials are too theoretical	51	52	53	54	55
12. Study materials are unstructured and difficult to assimilate	56	57	58	59	60
13. There is no clarity of concepts in the study material	61	62	63	64	65
14. The study materials are usually of a high academic standard	66	67	68	69	70
15. The study material has no relevance to the course content	71	72	73	74	75
16. The library is very poorly resourced	76	77	78	79	80
Format Of Study Materials					
17. Study materials are always in the form of printed materials/ tutorial letters and books	81	82	83	84	85
18. Study materials are very rarely in the form of audio tapes	86	87	88	89	90
19. Sometimes the study materials are in the form of video tapes	91	92	93	94	95
20. Study materials are always online via the Internet and E-Mail	96	97	98	99	100
21. Study materials are broadcast over the radio	101	102	103	104	105

22. Study materials a re broadcast via the television	106	107	108	109	110
Teaching Staff					
23. The teaching staff are very helpful	111	112	113	114	115
24. The teaching staff are always available when requested	116	117	118	119	120
25. The teaching staff are most competent	121	122	123	124	125
26. The teaching staff are unsympathetic to student problems	126	127	128	129	130
27. The teaching staff are racially biased	131	132	133	134	135
28. The teaching staff cannot be contacted via the Internet and Email	136	137	138	139	140
29. The teaching staff are always very courteous and helpful over the telephone	141	142	143	144	145
How Can The Quality Of Distance Education Be Improved ?					
30. There should be more satellite campuses	146	147	148	149	150
31. There must be increased use of media in instructional delivery	151	152	153	154	155
32.Only Computer literate students should be accepted at distance education institutions	156	157	158	159	160
33.Distance Education should also include face to face contact	161	162	163	164	165
34. Study materials should be available "on line" via the Internet and via E-Mail	166	167	168	169	170

35. Do you think the use of technologies such as the Internet, e-mail, video, audio tapes, television, etc, will definitely enhance the quality and access to distance education in South Africa?

Yes	171	No	172

Give a reason/s for your answer_____

_____

_____

_____

_____

_____

36. In your view what are the major shortcomings in the present distance education programme that you are currently enrolled for?:

_____

_____

_____

_____

B. GENERAL INFORMATION:

37. Age:

18 - 24	173	25 - 29	174	30 - 34	175	35 - 39	176	40 - 44	177	45+	178

38. Gender:

Male	179	Female	180	Other(specify)	181

39. Institution that you are currently registered at.

UNISA	182	SACOL	183
Other (Specify) 184			

40. Occupation: _____

41. What degree or diploma are you presently enrolled for?

DEGREE				DIPLOMA			
BA	185	MBA	188	Banking	191	Commerce	194
B.Ed	186	B.Com	189	Computers	192	Human Resources	195
B.Sc	187	LLB	190	Education	193	Management	196
Other (Specify)			197	Other (Specify)			198

42. Are you computer.....

Literate	199	Semi - literate	200	Illiterate	201

43. Do you have access to a personal computer?

Yes - at work	202	Yes - at home	203	Yes - both at work and home	204	No	205

44. Do you have any knowledge about the Internet?

Yes - I work with it	206	Yes - I heard about it	207	No - I don't have any idea at all	208

APPENDIX TWO

QUESTIONNAIRE:
[DISTANCE EDUCATION STAFF ONLY]

Dear Respondent,

I am undertaking research on distance education as an alternate system of education in South Africa. Therefore, it will be highly appreciated if you could please complete the attached questionnaire. You may either:

- Forward it to me via email as an attachment
  Email address: govy@pixie.udw.ac.za
- Post to: Mr D. Govender, University of Durban Westville, Private Bag X54001, Durban, 4000 or
- Fax to: Mr D. Govender: Fax No: 031-2044866

Presently there is a paucity of information about South African distance education. My study is thus aimed at providing valuable information about the popularity of distance education , the type and quality of learner support being offered to distance education students and the levels of technology that are being employed in the delivery of distance education to students in South Africa. There is no doubt that your responses will enhance the value and quality of my research findings.

PLEASE TAKE NOTE OF THE FOLLOWING:

1. All your responses will be treated with strict confidentiality
2. Your identity will not be divulged under any circumstance
3. You must answer all questions
4. There are no right and wrong answers
5. Respond to each question in a manner that will reflect your very own, personal and honest opinion.

Thank you for your support, co-operation and valuable time.

Best wishes

Devan Govender
Lecturer
School of Education Studies
UDW

STAFF QUESTIONNAIRE

A. FOR EACH OF THE FOLLOWING STATEMENTS, PLACE A CROSS IN ONLY ONE OF THE BOXES.

General	Strongly Disagree	Disagree	No Opinion	Agree	Strongly agree
1.There is no difference between distance learning and open learning	1	2	3	4	5
2.The use of technology does not influence the quality of teaching and learning	6	7	8	9	10
3.SAIDE adequately promotes distance education in SA	11	12	13	14	15
4.COLISA is a very strong association which encourages research and development of distance education in SA	16	17	18	19	20
5. I would like to see greater input from the Council on Higher Education as regards distance education in SA	21	22	23	24	25
6. There should be stronger linkages between the various distance education providers in SA	26	27	28	29	30
7. Full time face to face institutions must begin to establish with distance education providers	31	32	33	34	35
Institutional Support					
8. My institution provides adequate resources to offer the best quality teaching	36	37	38	39	40
9. My institution encourages strong interaction between staff and students	41	42	43	44	45
10. My institution holds and conducts many workshops and seminars on strategies to improve teaching	46	47	48	49	50
11. My institution allows freedom and flexibility in designing curricula	51	52	53	54	55
Institutional Support					
12. I am always available for student consultations	56	57	58	59	60
13. Very few students approach me for necessary support	61	62	63	64	65
14. I always give prompt feedback after assignments and student queries	66	67	68	69	70
15. I schedule time on task with my students	71	72	73	74	75

16. Ideally, I should provide more face to face contact sessions with my students	76	77	78	79	80
17. I do not have adequate time to provide student support on a regular basis	81	82	83	84	85
18. Students should be able to obtain support via e-mail, telephone, fax, teleconferences, Internet, etc from staff	86	87	88	89	90

19. Would you like to participate in any additional staff development programmes?

Yes	91	no	92

20. If yes (to Q27.) State the type and duration of staff development programmes that you would be willing to participate in.

21. What are the major shortcomings / benefits of the present learner support that you offer your students?

22. In your view, what can your institution do to increase the popularity of distance education amongst tertiary students in South Africa?

B. STUDENT SUPPORT

23. State the type/kind of support you offer your students and the frequency thereof.

5. SUPPORT		6. FREQUENCY
Example: Face to face Tutorials	**X**	**Three times per module**
Correspondence only	93	
Regular face to face contact sessions	94	
Occasional face to face contact sessions	95	
Individual Tutorials	96	
Small group discussions	97	
Other (specify)	98	

24. Other than correspondence, what is the most popular mode of communication between you and your students

Telephone	99
Fax	100
E-Mail	101
Other(specify)	102

25. Besides correspondence, what other modes do you employ to deliver your course/s to students?

Audio and Videotapes	103
Radio Broadcasts	104
Television Broadcasts	105
Satellite Broadcasts	106
Online Instruction (Web based; Internet, Email)	107
Other (specify)	108

C. GENERAL INFORMATION

25. Name of institution employed at.

UNISA	109	SACOL	110

27. Number of years employed at above institution...

1-5	111	6 -10	113
11 - 15	112	20+	114

28. Your present rank at this institution

Junior lecturer	115	Associate Professor	118
Lecturer	116	Professor	119
Senior Lecturer	117	Other (specify)	120

29. State your highest qualification.

BA	121	MA	126
B.Paed	123	M.Ed	127
BA (Hons)	124	D.Ed / PhD.	128
Other (specify)		125	