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Towards a model for technology-enhanced Distance Education

By

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Research Report

submitted in fulfillment of the requirements for the degree of

Doctor of Philosophy

in the

Department of Teaching and Curriculum in the Faculty of Education

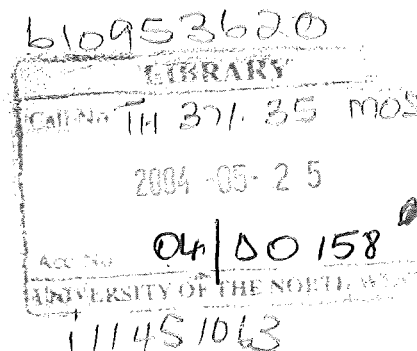
at the

University of North West, South Africa.

Supervisors:

**Prof. S. A. Awudetsey
Prof. M.W. Mwenesongole**

SEPTEMBER, 2003



DECLARATION

I, **Modiehi Sophia Mosime**, declare that the thesis for the degree of Doctor of Philosophy at the University of North-West hereby submitted, has not previously been submitted by me for a degree at this or any other university, that it is my work in design and execution and that all material contained herein has been duly acknowledged.

SIGNED:




.....
MODIEHI SOPHIA MOSIME

CERTIFICATE OF ACCEPTANCE

This thesis, titled “Towards a model for Technology-enhanced Distance Education “, written by Sophia Modiehi Mosime and presented to the Department of Teaching and Curriculum, Faculty of Education, University of North-West, is hereby recommended for acceptance for examination.

SUPERVISORS


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Professor S.A. Awudetsey


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Professor M.W. Mwenesongole

DEDICATION

The Lord, our God, is always uppermost in these things. This thesis is dedicated to my late husband, *David Mosime*, who urged me on till the last day...*thanks to you once more, Daddy Cool, for climbing the mountains with me, and crossing the oceans with me..., and for travelling that last mile with me....* My three daughters, Ruby Puseletso, Michelle Naledi, Gilda Boitumelo, and my sons, Serg'e Segona, and "SBK" Seboka Pheko share this dedication with you, Sharon, and our lovely grandchildren. Thanks to you, Pastors Monty and Anne Mabale for your spiritual guidance. This Life is a marathon; so let's continue to run the race.

Mom

MODIEHI-WA-PHEKO SOPHIA MOSIME

ACKNOWLEDGEMENTS

We need to remind ourselves each day that we are not getting younger. Yet who are we to conclude that it is too late to venture into some of these youthful endeavours? After all, we all seek depth and wisdom, and it is by faith that we reach the goalpost. *The Lord watched over this work throughout its journey, and only He knows the fruits of this seed.* And so to everyone who contributed to this work, may I hastily say thanks for a job well done, as I single out my mentor, professor Awudetsey, and my advisor, Professor Mwenesongole, for their mountain-moving patience. Thank you, my good teachers, for encouraging me to run the race. Even during that hardest of times, when my heart was pounding with grief, you patiently supported me, and when I lost my-head, you quietly instilled in me the virtue called "Patience". God's speed.

MODIEHI-WA-PHEKO SOPHIA MOSIME

SEPTEMBER, 2003

ABSTRACT

This research investigated the total situation of the ABET grade 12 “night schools” in the disadvantaged areas of the North-West Province, and the learning needs of the young drop-out learners and adults who attended these classes. At the same time, the study explored a suitable technology-enhanced distance education model that could be used by the University of North-West. A total of 75 grade 12 ABET learners participated in a needs assessment survey, while 100 members of the University of North-West participated in a rigorous survey that set out to investigate the most suitable and acceptable technology-enhanced model of distance education to meet the needs of these target learners. The survey explored and established a technology-enhanced model of distance learning appropriate to these target learners from less privileged backgrounds. In a follow-up survey that used direct individual and focus-group interview sessions consisting of senior education officers, ABET educators and officials, school managers, village leaders, university faculty members, members of the digital and telecommunications fraternity, and shopping mall visitors, a total of 120 people supported the model identified by the university community and accepted by the target learners. General comments from the survey were subjected to content analysis. The findings of the survey indicated that a technology-enhanced distance education model that utilised print, contact lessons, and the modern electronic modes of distance learning, supported by the university and village communities, and adequately funded by participating stakeholders from the provincial government and other business partners, was feasible. The model, also founded on historical and modern evidence which leans on the established criteria of access, support and funding of technology-based distance education for the less privileged, was supported by evidence relating to the latest e-learning collaboration plans between the University of North-West and the provincial department of education. It was concluded that, based on latest developments within the e-learning strategic plans nationally and provincially, and the burning desire on the part of authorities from government to bridge the digital divide between the historically advantaged and historically disadvantaged persons across the board, the model has the potential for early implementation within the North-West Province.

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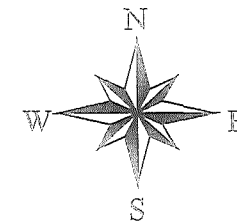
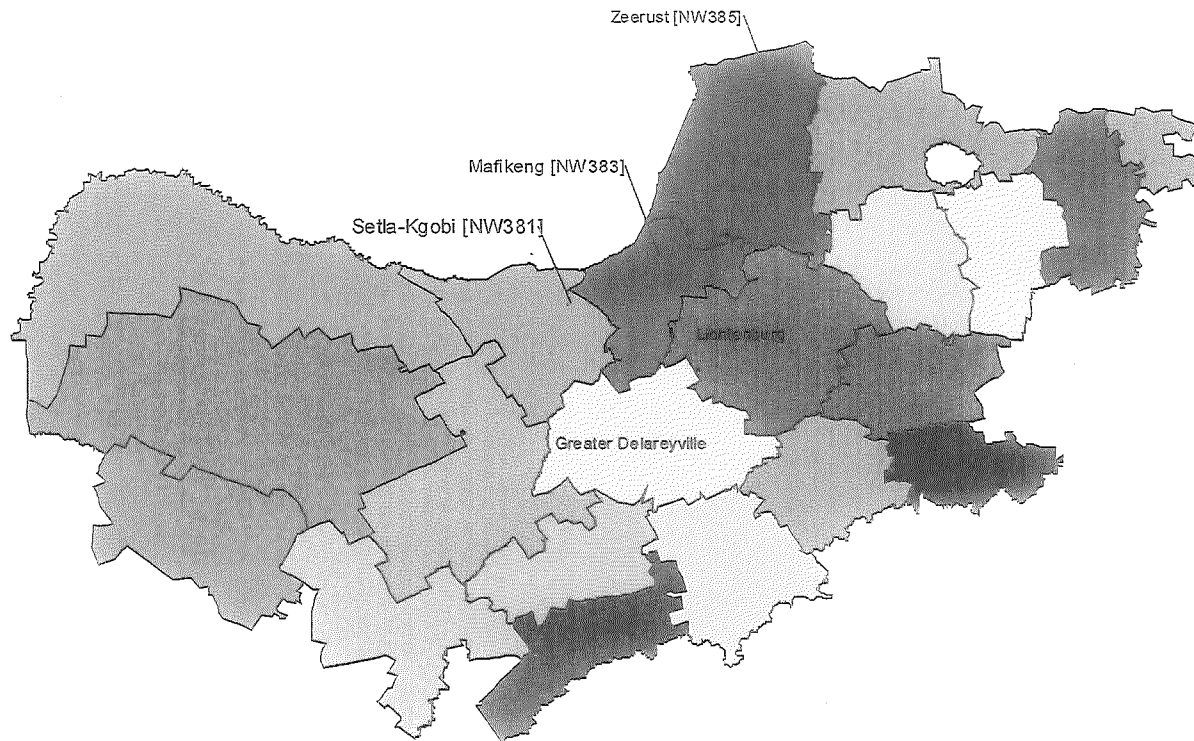
THE REPUBLIC OF SOUTH AFRICA



NORTH WEST PROVINCE

NW MUNICIPALITIES

-  Christiana/Bloemhof [NW396]
-  Greater Delareyville [NW382]
-  Greater Taung [NW394]
-  Kagisano [NW391]
-  Klerksdorp [NW403]
-  Lichtenburg [NW384]
-  Mafikeng [NW383]
-  Markwe-Madikwe [NW376]
-  Maquassi Hills [NW404]
-  Motopo [NW395]
-  Moretele [NW371]
-  NW372
-  NW374
-  NWD MA37
-  Naledi [NW392]
-  Potchefstroom [NW402]
-  Rustenburg [NW373]
-  Schweizer-Reneke [NW393]
-  Segonyana [NW1 a1]
-  Setla-Kgobi [NW381]
-  Ventersdorp [NW401]
-  Zeerust [NW385]



Chapter 1

1. Introduction

1.1. Orientation

The phenomenon of distance education has been motivated all over the world by circumstances. Among these are geographical and social circumstances, educational imbalances, the emergence of adult education units and departments in universities, the emergence of communication systems, especially the postal system in Africa, the diffusion of colonial practices, and, as Adekanmbi(2001) puts it, "the dogged tenacities of many protagonists in the system of instruction". Colonial influence and the growth of communication systems stand out as early motivators of this genre` in Africa. The present study looks at the need for and the exploration of a technology-enhanced distance education system at the University of the North-West which addresses the needs of the learners who have been left out of the education system by circumstances beyond their control.

Learners from poor backgrounds often do not enjoy the privilege of a good second chance after failing their matriculation examinations at school. This is often the case in the poorer and under-resourced rural schools of South Africa. The North-West Province, mostly rural, has seen young matriculation dropouts leave the school system to fend for themselves. A few lucky ones make it to adult evening classes, but the rural setting makes it difficult for, especially female and disabled learners, to make it through this

class. Those who end up with a job may not even have a chance to attend the Adult Education and Training (AET) "night school". Urban learners are often at a better advantage than their rural counterparts in this regard.

Learners from historically less privileged backgrounds, particularly those from rural areas, have always been deprived of the type of education that would be enriched through access to information, teaching resources, learning materials and training courses. The memorandum of understanding between the Industry, Canada and the Ministry of Education in South Africa, signed in 1998, was precisely about this type of redress, where both learners and educators from historically disadvantaged backgrounds would benefit (Burger and Fourie, 1999). However, so many have been the education problems in rural South Africa that a lot of work still needs to be done to address rural education problems.

Two categories of learners are the concern of this study: the employed non-matriculant adult learners who cannot access the adult education programme on offer by the department of education, and the young school-leavers who cannot access the traditional full-time classroom and the one offered by the Adult Education and Training Programmes near their homes. For the former, constraints of time and distance from the centre of learning seem to be part of the problem, but for the latter, many more problems, apart from distance, make it impossible for them to access the "night school", especially in the remote rural areas.

The North-West Province is one of the nine provinces in the new democratic South Africa, characterised by vastly rural landscapes surrounding the main cities of

Klerksdorp, Stilfontein, Potchefstroom, Lichtenburg and Rustenburg (the Platinum City). Mafikeng, is the capital city. The province boasts two universities, the Potchefstroom University for Christian Higher Education and the relatively younger University of North-West (formerly called the University of Bophuthatswana). The two universities are presently in the process of merging into one institution of higher learning. The latter was established according to the University of Bophuthatswana Act of 1978, stated in the Univ. of Bophuthatswana Calendar(1989:17). That university would

serve the needs of the region and its people, and while its nature demanded that it be an open university, the ideal would be that of an open university in an open society as propounded in the Lekhela Education Commission of 1977.

The main university campus in Mafikeng still admits most of its learners from the disadvantaged and rural backgrounds.

According to Glennie (2001) “The 1999 Plan for Higher Education has called on institutions to increase their enrolment of non-traditional students, among whom are workers, mature students and the disabled”. Glennie, of the South African Institute for Distance Education (SAIDE) observed that this call reflects the increasing proportion of high-skill labour required in our economy, and is in line with South African policy statements that note that the overarching goal of policy must be to enable all individuals to value, have access to, and succeed in life-long education and training of good quality.

"Internationally, 40% of higher education students in some countries are non-traditional students"(Glennie in The Mail and Guardian 22-28 June, 2001). In order to prepare itself for other modalities in its education provision, the University of North-West needs to have non-traditional classes at pre-graduate level so as to have its own pool of recruits for the undergraduate programmes in Science and Technology and in the area of Commerce (Information Systems), which have been highlighted in the 1999 UNW Strategic Plan. There are indications that this move is already in place and showing healthy signs of growth and support from the Provincial Department of Education and the Youth Commission in the North-West as highlighted in the Annual Report of the North-West Provincial Youth Development Trust (Mosime, 2001). The target groups outlined above are but a few privileged learners identified for educational development. The remainder of the learners may not be studying Science or Commerce subjects and may not have access to alternative programmes already in place.

While the University of Potchefstroom has introduced telematic learning systems (TLS) at undergraduate and graduate levels (<http://www.puk.ac.za>), the University of North-West has so far only managed to provide upgrading classes for matriculants at residential level(<http://www.uniwest.ac.za>). This means that at the latter university, technology-supported distance learning has not enjoyed serious consideration. The residential learning mode therefore still dominates the learning scenario even for undergraduate and graduate learners. This includes matriculation upgrading classes, which are also residential. Because of poverty, distance and other social circumstances, some deserving learners still do not get access to programmes offered by the university. This study

looked at these issues very closely in order to get a solution to the problem of the less privileged matriculation candidate.

1.2.Statement of the problem

The core of the study lay in the development of a model for technology-enhanced distance learning provision for matriculation learners who have dropped out of the traditional school and cannot access ABET (Adult Basic Education and Training) centres provided by the Department of Education in the North-West Province, including those employed adults, whose employment limits their access to "night schools". The University of North-West has provided higher education to several students from deprived rural backgrounds but so far, it has not developed a distance-learning programme internally. The opportunities are many and the need to develop a distance learning model with modern electronic technologies has been demonstrated in this study.

The study set out to identify the large residue of non-matriculants in less privileged areas of the North-West Province who cannot easily access "night schools" in their areas for several reasons, and to seek the solution to their access problems via an alternative model, technology-based distance learning in this case, in order to identify the most viable and acceptable elements of such a model, and to establish the possibility of putting in place the support systems to make the model function. Matsepe-Cassaburi, Minister of Broadcasting and Telecommunications in the South African government, in 1998, alluded to the utilisation of the multi-purpose centres in the villages as distribution centres for broadcast education in rural areas. The need to use technology in those centres needed to be probed.

The idea to have a bottom-up model of technology-based distance learning for disadvantaged grade 12 youth and adult learners, working in collaboration with donors and expert authorities, also made this study extremely necessary.

There was also the need to find out whether the University of North-West was well poised (in terms of human potential and physical resources, including training potential and the facilitation of educators) to face the challenge of a technology-enhanced distance education model for the less privileged, or to offer relatively positive support to such a project as partner. The subjects were extremely enthusiastic, especially those staff members who had served the university for many years. The student body also showed interest in the study and its objective of benefiting those disadvantaged young dropouts and adults, commonly known as ABET learners, studying to pass grade 12.

The 1998 Register of Needs, compiled by the Human Sciences Research Council for the Department of Education, gives results of a study completed in 1998, in which the plight of ABET schools was investigated. In the 1998 ABET Report, were cited problems relating to a high dropout rate after a few months of enrolment at "night schools". The possibility that weather and season may be some of the factors responsible for such dropouts, that in some urban areas, the high crime statistics are responsible for dwindling numbers of "night school" attendants, and many other factors, had to be confirmed. This study was to establish the facts as well as find other facts, some of which were found to be the formidable geographical terrain, extreme distance from schools, attitudes of

schools toward repeaters, and several other problems experienced by employed learners as a result of attending school at night. In general, “night school” attendance has never been a practical solution for this target group.

The study explored a technology-based model for distance education in order to reach the bulk of the less privileged rural and peri-urban settlements, where several matriculation candidates do not have access to the ABET (Adult Basic Education and Training) classroom. The Chinese model, using radio and television universities, and cited in the literature (Keegan, 1993) has accounted for the high literacy rate for that country, and actually served as significant reference point in this study. The problem is however not that simple, as comparisons can be unfair. The main question was : “what do we do to find an effective alternative strategy for the delivery of technology-enhanced pre-tertiary distance education to the less privileged and rural out-of-school learners and employed adult learners?”

The research questions cited below formed the subset of questions that needed to be answered in order to address the whole question of an alternative education strategy and a suitable, appropriate and all-embracing technology-enhanced distance education model towards the solution of the problem facing those out-of-school learners in the disadvantaged schools in the North-West Province.

1.2.1. Research questions

The fundamental questions that had to be answered by this research investigation were:

1.2.1.1. What are the common problems experienced by the target learners (dropout grade 12 learners, employed adult learners) identified for this study? Out-of-school youth of school-going age and employed adult learners have unique problems in their own geographical areas. These needed to be spelt out so that a solution is found.

1.2.1.2. Are the number of problems experienced by out-of school youth and adult learners attending "night school" in the rural areas of the North-West Province significant enough to warrant intervention through intensive and extensive assistance to these historically disadvantaged learners?

1.2.1.3. How ready is the university to accept this social responsibility and how much capacity has it to offer assistance towards a technology-based distance education so that these underprivileged young out-of-school learners and employed adult learners may benefit from the assistance offered?

1.2.1.4. What relevant, most suitable and most acceptable and cost-effective technologies can the University of North-West use for the development of a technology-enhanced system of distance learning provision for these identified youth?

1.2.1.5. How ready are the schools and education fraternity, including the department of education (and other relevant structures/partnerships) to support the move to establish

technology-enhanced learning and education dissemination centres for ABET learners in the remote and less privileged areas of the North-West Province?

1.3. Purpose of the study

The study aimed at achieving three main goals:

1.3.1. assessing the extent of the need for technology-enhanced distance learning among the less privileged out-of-school grade 12 youths and unemployed adult learners resident in the most disadvantaged and less privileged areas of the North-West Province.

1.3.2. finding out if the University of North-West would have the capacity to deliver a technology-based distance education to the identified target learners through suitable identified centres both at campus(distance education centre) and in the remote rural districts, which would serve as training, dissemination and distribution centres.

1.3.3. looking into possible and /or existing technologies within the University of North-West for exploration and development of non-residential modes of learning for disadvantaged learners, in order that the latter may be able to access the most effective technology-enhanced matriculation courses.

To achieve the above, all relevant stakeholder institutions and personalities (among whom were officers within the department of education in the province), media service

providers and institutions of adult basic education and training, matriculation ABET learning sites, as well as several other stakeholders in the rural villages, were investigated. The variety of models that could be explored was also probed in the study.

1.3.4. In summary, the study aimed at

1.3.4.1. establishing, through situational analyses, interviews, opinion surveys, questionnaires, and exploratory methods, the need for, and possibility of a technology-enhanced distance learning system and

1.3.4.2. developing a suitable and acceptable model at the University of North-West to offer technology-enhanced distance matriculation courses to underprivileged out-of-school youth and employed adults who cannot access "night schools" or benefit optimally from the existing night school AET (Adult Education and Training) system.

The establishment of these technology-enhanced quality courses that are cost-effective, efficient, and obtained in a distance mode would offer a flexible and open learning model to these youth. The emphasis would be on those target audiences deprived of the normal opportunities of access, and those technologies deemed suitable and appropriate for these ABET targets. The model would be endorsed by a significantly large number of participants in the study. What the university community would find possible and feasible as a model would be matched with what the ABET learners themselves discovered that they needed. The study achieved all these steps.

1.4. Rationale for study

The birth of the matriculation upgrading class at the UNW Institute of Education and subsequently at the Faculty of Science and Technology (UNW Year Plan 1999), and the several Winter School programmes around the province have been some of the attempts to assist learners to get a good matriculation pass. However, repeat classes through correspondence have evidently never been attempted at this campus, and therefore it is necessary that the residue of learners who drop out from the mainstream learning system be probed. Where do these learners end up? How do they then complete their matriculation? How long do they take to attain a good matriculation grade? There is a possibility that most learners who drop out of the mainstream programmes are left to their own cognizances after failing to access alternative programmes. The study, in its attempt to solve this problem, has thus raised the pertinent question of the role of distance education for these target audiences.

The University of South Africa and Technikon RSA have been the anchor of distance education in South Africa for many years, and later the Vista campus in Pretoria entered the foray of distance learning for a special target group (black urban dwellers). Its satellite campuses offered contact classes to the urban complexes in Soweto, Bloemfontein, Welkom, Sebokeng and Port Elizabeth. UNISA established its satellite campuses in large metropolitan areas like Johannesburg, Durban and Cape Town (Burger and Fourie:1997).

Some of the work done by established institutions like UNISA can now be extended to the previously black-only campuses. However, the University of North-West still

delivers most of its programmes in the residential mode, and therefore the campus is challenged to innovate in the distance education area because one may argue that in the North-West Province, particularly in the extremely remote rural areas, the less privileged matriculation-level learners never had a chance to access distance learning programmes on offer by private and public institutions because of several impediments and constraints emanating from factors like:

- a. the weak postal system in the villages
- b. poor infrastructure (roads, telecommunications, and electrification)
- c. lack of information among rural and poorer youth
- d. distance and separation from the modern influences of art, culture, science, technology and sports.
- e. socio-economic factors impacting on learners, among which are poverty, cultural constraints and discrimination against girls and women, farm labour, repression, and several other factors. Thus both social and political factors may have denied the youth the opportunity for a quality matriculation certificate (Welch and Mays, Mail and Guardian 24th April 1999), in spite of the many schools being built around the province.

This study serves to challenge the University of North-West to experiment with technology-based distance learning provision to the bulk of the historically disadvantaged young learners from the vast remote rural villages and the decayed urban and squatter locations in the province. It hopes to establish the basis for the most effective distance education model for reaching matriculation candidates in the remotest rural regions as well as the least privileged urban settlements, where several potential matriculants cannot

access Adult Basic Education and Training (ABET) programmes already in place.

Reaching these learners positively should go a long way in alleviating the problems of poverty and ignorance among these disadvantaged people in the villages and informal settlements.

1.5. Delimitation of the study

1.5.1. Target Audience

The study is restricted to the less privileged young rural matric learners who have failed to obtain a matriculation pass, or cannot study at an ABET centre for the matriculation examination, and those adult workers who cannot attend ABET matriculation centres because of the constraints placed by their circumstances. All of these learners have one open option available to them: that of distance learning through technologies.

1.5.2. Appropriate Technologies

The technology utilisation dimension has been included in the study as an intervention to be explored in order that a unique and genuine solution is found, which would benefit those people who would otherwise never benefit from the system of education during their most crucial stage of transition into higher education. There is no limit to the number of technologies available for use to enhance distance learning, but the study has to ensure an effective system using only appropriate technologies that are affordable, effective and easy to use, as assessed by the participant subjects of this study, and validated by the other stakeholders outside the study.

1.6. Assumptions of Study

The separation of educator from learner is often bridged with occasional contact encounters of a face-to-face nature within the organisation (e.g. vacation classes and group discussions). Tutorials may feature in print and in electronic form as open learning. The target audience for this study consists of flexible, open and distance education learners who cannot access the traditional residential mode of learning. These are the many youth who left school after failing to obtain a matriculation certificate for various reasons and cannot access contact classes because of their unique circumstances of deprivation and lack.

The mass media have proved that education is not only the domain of the school educator and the campus lecturer within the confines of a residential institution. The study assumes that the UNW can innovate within itself in the area of technology-based distance education to provide access to the historically less privileged out-of-school-youth and working adults engaged in adult matriculation classes.

The study also assumed that several matriculants are barred from full-time and adult classes because of socio-economic and cultural constraints. The university, it was assumed, is socially responsible to all those struggling matriculation candidates, who cannot access the ABET class for various reasons, and whose chances of entering the higher education arena are lessened. This study aimed at exploring a more innovative model which utilises available technologies and the distance education delivery at local level to the out-of-school and employed adult matriculation candidates. The study has

noted the move by government to merge the distance learning institutions in South Africa, namely UNISA, Vista and The RSA Technikon. The study also noted the move made by other residential campuses (already mentioned) to experiment with and establish their own distance learning programmes for their own needs, based on their diverse target audiences. The success of the innovations at the mega-university of South Africa, namely UNISA, has inspired the present study.

1.7. Definition of key concepts

1.7.1. Distance

The term has two connotations. The geographical distance denoting that learners are separated from educators by space. The second one relates to learners whose distance from the educator has been mediated through technologies that give instant knowledge. Dhanajaran (1998) refers to technology-enhanced education through tele-systems that have managed to reduce the distance between the learner and the provider of education, as in teleconferencing.

1.7.2. Distance Education

Distance education is regarded as education through means that afford learning of prepared self-paced course materials with assignments and tests specifically designed for non-contact learners who cannot access contact classes. Initially termed correspondence education, the distance mode of education delivery was for non-resident learners. Bell and Tight (1993:9) define distance education as:

the forms of organised learning which are based on, and seek to overcome, the physical separation of learners and those (other than the learners themselves) involved in the organisation of their learning. This organisation may apply to the whole of learning or to certain stages or elements of it. Some face-to-face contact may occur but its function will be to supplement or reinforce the predominantly distant interaction. A good deal of private study will typically be expected of the student. Distance education offers one set of methods for opening up education to those who are unable or unwilling to regularly attend educational institutions.

1.7.3. Delivery system(mode)

The terms system or mode are used interchangeably, as in delivery mode or system through which education communication is transmitted. The conventional face-to-face mode is contrasted to the mode that uses transportation through wheels or through the modern technologies of broadcast, NetWare and combinations of these, including sound and visual modes of delivery.

1.7.4. Technology-enhanced learning

Learning mode supported by hardware and software, rather than by the methodological elements of organisation and management cited in the definition according to the AECT (Association for Educational Communication and Technology; Wilkinson:1980).

In the U.S.A. The term “technology-enhanced” may not be used interchangeably with the term “technology-based”, but may rather supplement it. Technology-based education may sometimes relate to the strategies that use print and modes other than hardware and software for delivery of learning packages (Knirk and Gustavson:1986).

1.7.5. Educational Technology

The system encompassing gadgets, methods, means, organisation and management of educational delivery to specific target audiences and the means to ensure that the design factors, the human resources factors and the management factors are properly synchronised for the attainment of the educational goals. All these elements are mentioned in the classical definition of educational technology formulated by the Association for Educational Communication and Technology in 1977, which states that educational technology is

a complex and integrated process involving ideas, devices, and organisation, for analysing problems and devising, implementing, evaluating, and managing solutions to those problems, involved in all aspects of (human) learning(Wilkinson,1980:9); Knirk and Gustavson, 1986:19).

1.7.6. Less Privileged learners

Those learners who previously have not benefited from enriched learning systems for various reasons. The current political term refers to learners in the less privileged areas (including remote rural and informal settlements) in South Africa or those whose parents may be employed in white farms. The less privileged learner is often denied access, resources, time and sometimes suitable learning settings.

1.7.7. Model

Model in this study is used to describe a system of educational organisation, management, design and delivery of learning programmes specifically designed for a specialised target group, with the goal to satisfy the needs of the group, and the openness that lend it to change and modification depending on the circumstances and the temporal-spatial environment. The distance education models mentioned in this paper have been evaluated as flexible and open to change and modifications based on emerging technologies, the influence of markets and the industrial revolution and are subject to certain common constraints. They may collapse or be sustained, depending on whether the fundamental principles of technology-enhanced learning and of educational technology are observed or not. Lack of funding has been identified as the problem associated with most models of technology-based or mediated education projects (Schramm:1977).

1.7.8. Open Learning

The type of learning designed to be accessible to all. This type of learning is delivered by correspondence through packaged programmes designed to offer evaluation and assessment at will. The most recent form of open learning is now found in the Internet by browsing through several websites, which offer a vast spectrum of information to whoever has access. Open learning ensures that the learners are not discriminated against because of the circumstances that prevent them from registering for the residential mode of learning.

1.7.9. Technology-based learning

A learning and instructional mode used to supplement technology-enhanced methods of software and hardware. It relates to designed and organised modes of print based learning e.g. visuals and graphics.

1.7.10. Adult Basic Education and Training (ABET)

The area of ABET is a very broad and difficult area. Because of the many legacies and inequities of the past, the black learner from age 15 may enter an ABET programme and be defined as an adult learner. Indeed, the National Multi-year Implementation Plan for Adult Learners in the North-West, published in 1997, indicates that

For purposes of Adult Education and Training, adults are defined as "all persons aged 15 years and older". Estimates are that there are a potential 9-10 million adults who require ABET and over 7 million potential participants for Further Education and Training sector (1997:76).

Adult learners who form our target audience for this study are young drop-outs from the matriculation programmes of the public school system in South Africa. Often this group is eighteen or above. The second category of adult learners, for this study, comprises all those employed adults above age sixteen to any working age.

1.7. 11. “Night School” is the phrase commonly used to describe the afternoon and evening classes attended by ABET learners. In Setswana “night’ may also mean “late’ (school for late learners).

1.8. Organisation of the research report

The report for this research survey features in Chapter 1, Chapter 2, Chapter 3, Chapter 4, Chapter 5 and Chapter 6.

Chapter 1 serves as background to the entire study.

Chapter 2 gives the literature survey.

Chapter 3 outlines the Research Design, Procedures, Methods and Instruments used in the study. The section has highlighted the procedures followed, instrumentation used, constraints and practicalities of the study, some field experiences, supplementary procedures and replication modes.

Chapter 4: Presentation and analysis of data.

This part of the report has been divided into four sections.

The first section gives details of the report based on responses from all questions targeted at the ABET learners from the rural and disadvantaged schools. In this section, the responses to the survey questionnaire on ABET learners, their learning situation and general problems were analysed.

The second section is a detailed report based on the questionnaire to the university community regarding the plight of the grade 12 rural and disadvantaged learners and the interventions through the use of technology as solution to their many problems. In this section, responses to the survey questionnaire were analysed.

The third section gives responses based on individual unstructured and structured interviews by several stakeholders and persons involved in education in general, and in adult basic education and training, as well as those involved in community development within the disadvantaged rural areas. It is in this part of the research report that responses from the focus groups were recorded.

The fourth section contains all the other work done to validate the findings of the three sections above. In this section of the survey, details of direct interview responses are reported, as well as some of the responses from content analysis of general comments by various participants.

Chapter 5 describes the model that significantly represents the consensus regarding technology-enhanced distance education solution for the target audience of this study. The model is described elaborately as well as represented diagrammatically. The conclusion of this chapter is an elaborate discussion that weighs the feasibility and possibility of the explored model against the latest technology infrastructure and technology-enhanced model developments in the North-West Province in general, and the University of North-West in particular.

Chapter 6 of the research report gives recommendations and suggestions towards establishment of a sustainable technology-enhanced distance education model which would serve as solution to the problem of out-of-school and adult grade 12 learners in the less privileged ABET schools which have been probed in this study. The recommendations are based on the needs as highlighted, the model as identified, the general problems as outlined, and the positive developments within the University of North-West and in the general ICT (Information, Communication and Technology) scenario in recent years.

Chapter 2

Literature Survey

1. Introduction

The domain of this study was mainly the plight of the young adults, employed or non-employed. These target subjects from the disadvantaged areas of rural North-West have had to grapple with the problem of Grade 12 studies and content after dropping out of the traditional school for several reasons. The main reason has always been the pressure brought upon day schools to produce good matric results. Often these schools refuse to admit second chance learners. Some of the problems of these young people from disadvantaged backgrounds were often defined around lack of electricity, lack of telephones, poor socio-economic conditions, and general lack of resources, both human and material, to make the education of these youngsters effective.

The Honourable Tolo, Member of the Executive Council for Education in the North West Province, observes that "the North-West is one of the rural provinces in the country, and has therefore, been the most marginalised in as far as resource provision is concerned". He cited, in his address at the Information and Communication Conference held at Potchefstroom on Tuesday 11 May 2000, "many of our schools that have no electricity, telephones, no computers, water and other basic needs". His ten-year rollout plan starting from 2003/2004 looks to the provision of basic infrastructure needs in the more disadvantaged and rural areas of the North-West Province in order that schools can be afforded e-learning, a technology-based form of learning through networked computer

systems, including the Internet, the intranet and e-mail as well as other compatible systems like the cell phone for instance. This introduction of technology-based systems is considered a solution for the many problems already cited. This study aimed at looking for a model of technology-enhanced learning, which would serve as solution to the problem of the target learners cited at the beginning of this paragraph.

The researcher's assumption was that, in order to solve the problems of young adult learners, it is essential that technology-based distance education systems be explored so as to evolve an alternative education model for these young target learners in order to address their matriculation problems. The study therefore also looked into a distance learning solution, using educational technology, to solve the problem of the young out-of-school learners and their employed counterparts, who, it has been observed, have a problem completing their last matriculation grade after dropping out of the traditional school. The study would hopefully eliminate some of the rigid elements of formal education typical of grade 12 learning in the village "night schools".

Coombs(1978:20) defines formal education as "the deliberated and systematic transmission of knowledge skills and attitudes (with the stress on knowledge) within an explicit, defined and structured format for space, time and material, with set of qualifications for teacher and learner, such as is typified in the technology of schooling". The more diversified and more flexible elements of informal and non-formal education should typify the envisaged education for the young dropout grade 12 learners through distance and technology-enhanced means of education delivery.

Informal education, whose elements are included in technology-enhanced distance education, is defined by Coombs (1978:22) as

the incidental transmission of attitudes, knowledge and skills (with the stress on attitudes) with highly diverse and culturally relative patterns for the organisation of time, space, and material, and also for personal roles and relationships, such as are implicit in varying configurations of the family, household, and community.

On the other hand, non-formal education is, like formal education in the deliberate and systematic transmission of knowledge, attitudes, and skills, but here the stress is on skills. Thus in terms of process it avoids the technology of formal schooling, permitting a more diverse and flexible deployment of time, space and material and accepting a relaxation of personal qualifications, in response to the structure of the workplace, and in response to the human resource development model. The grade 12 learner is either preparing for higher focused learning, or intends to join the workforce to earn a living. The rural learner is often, but not always, placed in the latter category. This exclusion of others from the mainstream learning is a problem that South Africa has still to grapple with.

An alternative education is often the result of barriers emanating from hostile socio-economic conditions like poverty, war, disease, adverse geographical and climatic conditions, politics and many other factors associated with bridging the gap in educational provision. In her submission, Stromquist (1988) asserts that women integrate into the education system under conditions of subordination. She observes that these conditions do not allow women to attain full range of social and financial benefits produced by the collectivity, and which oppresses them through unfair social division and labour that assigns them home and child-care responsibilities and restricts the range of

occupations they may fulfill outside the home. Disadvantage, in this case is spelt out from the political perspective of inequities and unfair discrimination. Women, the disabled, and the rural folk are often the victims of education discrimination, which is often bridged through distance learning in most developing countries, or through technology-enhanced means in the more affluent first world. Stracker(1992) refers to the extreme violence, in black townships, which militate against the education of the poor.

Apartheid South Africa made education almost impossible for most Black Africans living in the rural backyards of the land by depriving them of basic infrastructure for schooling, namely housing, sanitation, roads, electricity, telephone lines (Parliamentary Speech, Minister of Education, South Africa, 1996:www.rsa.gov.za). The reconstruction and development plan ensured that by 2005 all schools have the basic infrastructure. The North-West Province, mostly rural, is still grappling with solutions to ensure that their intended e-learning plan is in place by the next decade, and the prospects are very good indeed.

According to Karodia, General Superintendent of Education in the North West Province, equity and redress are the cornerstones of a technology-based system of distance education provision that seeks to solve the problems of access and to bridge the digital divide. He articulated this observation in his opening address to the 11th May 2002 Potchefstroom Information Communication Technology in Education Conference.

According to Coombs(1978) emphasis on equitable distribution as well as creation of benefits is the basis for balanced social and economic development. This is fundamental to his theory on rural development.

The RDP (Reconstruction and Development Programme) is about equitable access to arable land, more equitable distribution of income, widespread improvements in health, nutrition, and housing. Coombs (1978) goes beyond physical resources. He asserts that individuals must be given greatly broadened opportunities to realise their full potential, through education, and a strong voice for all rural people, in shaping the decisions and actions that shape their lives. This way top-down structures are eliminated.

Learning adults have to use a non-traditional alternatives to conventional education. They have to learn independently, and are expected to perform, qualitatively speaking, the same as the learners from the mainstream education arena. However, if their situation differs from that of the others, where "love" does not exist, then their peril is obvious. Freire(1972) asserts that "love" is at the same time the foundation of dialogue and dialogic itself. It is thus necessarily the task of responsible subjects and cannot exist in a relation of domination.

The president's national address on education service delivery and efficiency referred to e-government, a government run on Information and Communication and Technology systems, and its role in education and e-learning, where learners are accessed electronic information and communication systems to enhance their learning. The reason why e-(electronic configurations)exists, is because of organisation. Organisation and

management of electronic systems is made difficult by the fact that it is driven by economies we cannot compete with. Structural changes and the economy call for Computer Technology and *e*-Organisation of industry and business. Social changes demand that we use Communications Technology (Mbeki, 2002:www.gov.za).

All these are relevant to education. *e*-Government hopes to transform the public sector. The reference to technology in this era infers that learners without technology-based systems to back up their learning are in peril. This reference also has implications for in-service education of educators in the Information, Communication and Technology field.

The direction and outcome of this study has been informed by the tried and tested experiences cited in the vast literature across the world, and has grounded its recommendations on the developments in both the technological and the socio-cultural worlds of the ABET educators and learners in the historically disadvantaged sectors of the North-West population of young grade 12 dropout learners and their employed young adult learner counterparts. A lot of constraints and obstacles beset most geographical areas in the North-West Province. Lack of electricity and telephone lines in most localities where schools are run under these circumstances militate against the idea of the intended and much talked about *e*-learning system in the province. However, there is hope, in the long term, that the South African National Departments of Communication and Education will mobilise resources for the funding of telecommunication and other infrastructure for connectivity to the network (Discussion Document on Electronic Media in Education, Department of Education, 2002, p.27.).

1.1. Overview of the scope of the study

The literature reviewed in this discourse was selective. It emanated from the backgrounds of distance education, adult education, educational technology, and sociology of education. The trends and models of education mediation throughout history were noted, together with their weaknesses and strengths. The literature that has been reviewed has ensured that what was appropriate to the study was used to analyse and outline the significance of an alternative model to the existing model of adult education in the North-West Province. It has been useful in giving direction to this study, especially in the area of model formulation and recommendations towards a technology-enhanced distance education for grade 12 ABET learners in the North-West Province.

The most important aspects of this study included the development of a distance education model that ensured

- i. the bridging of the digital divide between the haves and the have-nots in education.
- ii. assisting targeted youth with relevant and suitable material resources to ensure optimum benefits from distance learning
- iii. utilising all resources available to the community through partnerships and strategies to make adult basic education an asset of the community rather than that of the government
- iv. reducing tensions between providers of adult education and the administrators within the Provincial Department of Education in the rural districts
- v. utilising the University of North-West as a vital partner and driver of the system through partnerships that will ensure avoidance of monopolistic tendencies

- vi. democratising adult education and evolving a people's model acceptable to all, through a system that ensures change for all
- vii. support of the formulated technology-enhanced distance education model for grade 12 ABET learners targeted in this study, by all the relevant stakeholders, based on its relevance, timeliness, appropriateness, feasibility and possibility.

Evans (1994) has observed, through her many studies, that "with regard to distance education, ...ideas concern understanding the distance between distance educators and their students, not just as static distances which can be measured in kilometres or miles. Rather they are complex and fluid "distances" in the teacher-learner relationship. These are not just matters of geography or even time; the social, economic, spiritual, political, experiential, and personal dimensions add many interwoven layers to the distancing of the teacher from the student. However, understanding something of these layers does allow for some distances to be bridged by distance educators and trainers, rather than being ignored and for others to be recognised as salient, if potentially problematic features of distance education processes"(1994:18). The model of distance education established through this study has assessed this and other statements, and considered all the variables needed for an effective technology-enhanced distance education for disadvantaged young adults in the North-West Province. There are other problems. Schwann and Spady (1998:16) have observed and poignantly exposed constraints to learning when they noted that

the bureaucratic age culture thinks and acts in terms of time programs, procedures, means teaching, and resources rather than standards, achievement, purposes, ends, learning, and results, while the industrial age delivery system operates like an assembly line with students and teachers moving from segment to segment through the curriculum at a uniform rate for the prescribed amount of time. The Agrarian age, "runs from September until June" around which everything is defined, including opportunity to access to instruction, curriculum, grade levels and reporting systems, credit, teaching assignments, and contracts and finally the Feudal Age agenda sorting and selecting the faster from the slower, the academic from the practical, and the motivated from the uninspired, all under the assumption that only some ...can learn the hard stuff.

These constraints alluded to above, influenced by human systems of the industrial age, do not get resolved as populations increase and life gets more and more industrialised and commercialised, removing the older systems that are culture-driven, and causing confusion among those audiences in the simpler cultures, where there is very little "noise", and the pace is determined by technophobia or by the complete lack of technology, as opposed to the more technophilic nature of the modern age and suburbia, where "noise" characterises the learning milieu, to which new technologies are introduced daily, impacting on learning methodologies. This is the view expressed by Servaes and Lie (1994).

According to Schwann and Spady (1998), the system of education has always been challenged with seeking solutions for the masses. The amount of disregard for individual needs of learners within inflexible and grossly traditional modes of curriculum designs, learning modes, protected educator interests and attitudes, and learner neglect, are factors that often cause problems in education in general and educational technology in particular

Schwann and Spady (1998) and other scholars have articulated the desire to do away with an education system that still lacks flexibility, is bound to tradition, and effectively deprives most learners of the opportunity to tap in to formal and informal elements of learning and instruction in a schooling system that refuses to respond to the call of the industrial and technological revolution, resisting change, and promoting obsolescence. As proponents of Outcomes Based Education, these scholars have sought the convergence of methodologies that suit all individuals for effective utilisation in the technological age. On the other hand, adult education itself has its own methodology, approach and limitations grounded on the definition and essence of the adult learner, whose duty is to learn how to learn so that learning may be meaningful. Gravett (2001) refers to dialogic learning. Teaching and learning, especially for adults, is a process of negotiation, involving the construction and exchange of relevant and viable meanings. Garrison (1989) says the basic meaning of independence within the adult learning domain is “freedom from influence”.

1.2 . Reflection on adult education and technology-enhanced learning situation in the North-West Province

Most of the adult learners in the North-West Province are at a disadvantage. However, recently the Department of Education in this province reduced the ABET learning sites from 22 to 8 in the Atamelang Circuit (Rantlha, The Mail, May 30th, 2002), and thus some learners have complained they would not have access to far-away schools, and will drop out (Bop TV News Tuesday 22nd May 2002). This event points out some of the problems being experienced in the vast and sparse rural areas of the province. Digital or

electronic learning models of the smart schools of the world have indicated that good planning, funding, public-private partnerships and learner support systems are some of the necessary elements in technology-based learning systems of the day. Rural districts of the North-West Province and the other disadvantaged areas often do not have even the manpower or the infrastructural support for such systems. This study looked at an experiment that would put in place elements from the entire system to ensure expertise, technology, and support to evolve a suitable model for young adult learners identified for the study. Many have been the questions often posed for a co-ordinated system of technology-enhanced learning. How to make the system sustainable, to keep the well-trained technicians in the school-based business, to avoid movement of trained educators to more lucrative posts outside the system or the country, were some of the questions encountered.

A comparison of two conferences in South Africa, one held in Cape Town a decade and a half before the end of apartheid, titled "The Role of the University in Continuing and Adult Education"(August 20-21, 1980: compiled and edited by Millar and Walker) and another in 1998 titled "The SABC Educational Broadcast Conference", have some interesting facts regarding paradigm shifts and points of commonality pertaining to adult education through distance on the one hand and through technology on the other. The obvious difference is that the debate of the eighties was about the role of the university with regard to the community, and its social responsibility towards the communities it served, and the position of the private sector regarding the use of universities for training of their incumbents. The participants in the first instance were historically white

universities, Wits, Free State, Cape Town, Stellenbosch among others, the black universities, Medunsa, Transkei and also the distance University of South Africa, UNISA, and the University of New Zealand, Canterbury and Manchester as visiting universities. Other participants were from institutions like the Human Sciences Research Council. Exclusion and privilege seemed to stand out clearly during the debates. The conclusion of the panel discussions in the debate has been recorded by Millar and Walker (1980:22) and reads thus

For certain black communities, it was stressed, the image of a university might be projected primarily by its continuing education programmes dated in the training of adult education programmes or adult education projects, and their public relations role should therefore not be underestimated. Black communities did not want handouts; they wanted to participate in and contribute towards the life of the university in their area. Nor did black communities approve of being the subjects of research into their problems by outsiders. The key question such communities were able to ask was whether universities were able or prepared to address the real needs of black people in South Africa.

This gives the impression that at that stage the debate around adult education within the black population group was at a relatively underdeveloped level. While white campuses were looking at partnerships between themselves and the industry in adult education, whose definition was then also not so well-developed, the black universities of that era were still struggling with getting adult education courses and extension classes in their campuses, and also to have a model of education extension or lifelong education classes in those campuses. Content was the main focus of the debate, and thus mode of delivery was still not an issue at this stage. This means that adult education and distance education as concepts were still being treated as separate issues. However, the present study looks

at both, in order that a model evolves, which suits an intervention tailored for and with a specific audience with specific needs, at a specific institution, which is also undergoing transformation and will be merged with the more historically advantaged institution, namely the University of Potchefstroom.

What is the picture of adult education at the University of North-West, and what are the thoughts pertaining to broadcast and Information Technology education in South Africa?

The present broadcast system of education is not well integrated, and as part of the e-learning system, it cannot fall out of the domain of our present study. The Olset model of education through radio has been at experimental local level since around 1995, and would not necessarily satisfy all the requirements of the target audience of our choice here, because of lack of access. How can the new model accommodate some of these aspects of learning? Abject poverty typifies the target audience of our study, and thus some other elements of technology and delivery mode are important in the support of such learners so that an effective model is developed. Among suggested pilot programmes have been the Masterplan for IT in Education, tabled in 1997 by the National Department of Education.

On the 11th April, 2002, at another conference held at Potchefstroom, Superintendent General of Education, Karodia, noted the following developmental initiatives outside the North-West Province:

- **Gauteng on-line**, where the Provincial Cabinet , as part of its Blue IQ Project to develop the infrastructure for a "smart" province has earmarked R500m over the next four years to put computers in all schools in the province.
- **Khanya Project** of the Western Cape Education Department, the budget for which is also in the hundreds of millions. This year Khanya hopes to spend some R40m in the first phase of rollout. The emphasis of this project is the sustainable development of Information and Communication Technology in the province for educational purposes.
- Another large-scale provision is being undertaken largely by parastatal and private sector involvement. This includes **Thintana/Telkom** in all provinces, Telkom infrastructural development to all schools in the Northern Cape, MTN in Mpumalanga, Kwa-Zulu Natal and the Limpopo Province, Marconi in Gauteng, Free State and North-West and SCOPE in the Northern Cape and Mpumalanga, to name a few. These developments have not reached ABET rural classes in the North-West Province.
- Most recently the announcement from **Microsoft** to donate free software to schools will have a significant effect on the penetration of software into schools.
- The most significant NGO development in the ICT sector is **SchoolNet South Africa**. Their website demonstrates that they have taken up the challenge and are making the difference. North-West adult schools still do not have access.
- Cost-intensive deployment of laptop computers in some of the independent schools in the country. While the high cost of this experiment precludes a wider rollout, it is an

interesting experiment of the integration of computers into the curriculum and it deserves careful appraisal.

- The Shoma Project at Multichoice is an example of teacher development based at a number of teacher centres that use satellite technology to transmit interactive courseware developed in collaboration with various units in the higher education sector. Teachers need to be computer literate for learners to benefit from ICT.
- In the field of content delivery, a host of players are already active. These range from web-sites that serve as portals to other parties' information across the entities such as the Learning Channel and M-web that are generating their own courseware.
- Lastly, but very significant is *the development of modes and content by individual schools, universities, and technikons.*

Karodia (2002) agrees that the biggest problem is to find this information. “ It is hoped that *Thutong* will assist in bringing this valuable information to the wider community”, he says (11th April, 2002 Potchefstroom Conference). Above statements have lots of significance for this study.

From the list cited above, it is clear that there is visible evidence that in several quarters in education, efforts are being made to bridge education through technologies and therefore the North-West Province has an opportunity to tap from the list and many other innovations for its own appropriate model.

1.3. The Socio-economic Situation of Youth in the North-West Province

A study by Kalule-Sabiti (2001) of the University of North-West reveals that youth, (mostly male) in urban and non-urban areas of the North-West, are mostly absent from home, seeking jobs in urban areas. The province, they observe, is one of the three in the entire country with positive migration rates for Africans. This is an indicator of poverty, which is predominant in both the urban and non-urban areas in the North-West Province. Poverty also affects education, and thus the school drop-out rate, both at day school and night school level, is a function also of poverty, among other variables to be identified. Females head most households, an indicator that male migration is very high in the province. All studies on unemployment in South Africa have found that the rate of unemployment amongst youth is far higher than that of the older population. And therefore poverty among youth is a major issue in the North-West, Kalule-Sabiti (2001) reports.

A sentiment has been expressed that the gravity of the crisis facing youth has to be recognised and a concrete plan of action has to be put in place. Stracker (1992) observes that the dire situation of youth was not prioritised adequately during the transition period after the April 1994 elections. He also noted that very little definite policy has been developed to deal with the crisis facing this section of the population. He observed that in the 147 pages of the Reconstruction and Development Programme Document, only six paragraphs were devoted to youth, and that few concrete suggestions were made.

The area of post-school or adult education for out-of-school youth and employed young adults is a significant area of concern in this country, especially in less privileged areas of the vastly rural North-West Province. The study looked at the total situation relating to the high drop-out rate, which according to the 2001 Report (Kalule-Sabiti) reflects mostly young women and the disabled as accounting for the highest drop-out figures. Because of the high rate of dropouts from adult schools, the alternative to the conventional method of schooling had to emerge, and the study looked to the University of North-West to offer the solution with alternative means for a partnership delivery of distance education through technology and for strategies to accommodate the rural communities in the model.

A background of the University of North-West adult education approach is included here in order to illustrate the background scenario. The 1998 Report of the North-West Department of Education on ABET reveals that the dropout rate in adult learning centres is extremely high. There are several reasons why the present adult education model is failing in most areas of the province. A lot of these are found in the project study literature that analyses how ambitious education departments put things together for political reasons. The North-West Province has however, put in a lot of effort in studying the adult education scenario, and hence the decrease in the many ineffective adult schools after 1994. However, some problems that are encountered in the remote rural districts relate to administrative flaws as well as the low attendance rate among learners.

Corporate private markets ensure the dynamism of the entire adult education movement before they enter higher education. The high dropout rate at school leaving level among rural youth is cause for concern. Ways to assist youth in transition have been devised; hence the upgrading classes to assist matriculation passes and to facilitate examination enrolment. However, the rural youth still do not access these programmes.

For purposes of Adult Education and Training, adults are defined as all persons aged 15 years and older. Estimates are that there are a potential 9-10 million adults who require ABET and over 7 million potential participants for Further Education and Training sector (Report of the North-West Department of Education on ABET,1998:76).

The key components of target setting for the present study looked at this broad definition of ABET targets, and then singled out those who entered the ABET programme after failing matriculation examinations in the school system. The rural learners have to join the ABET programme because they cease to have a special classroom for repeaters in their own school. They cannot be accommodated because of heavy class loads, according to the 1998 Report. In the ABET class they begin to encounter several problems, which have been discussed in this study.

It is also important in the discourse on rural ABET education to ensure that we note the assertion by Coombs (1978) that rural areas have consistently reaped the fewest benefits from "modernisation". This study aimed to turn things around through a new collaborative home-grown model.

1.4. The Rural Adult Learners in the North-West

The province is characterised by rural schools in the villages and in and around white-owned farms. These are clearly the problem areas for the department of education. The matriculation failure rates in these areas are reported as comparatively higher than in the better-resourced urban schools. The village and farm school scenario, although gradually improving, still shows many discrepancies in the area of resources and other forms of support, like transportation, electrification and water resources. The bulk of the rural schools may be classified as providing for learners with special needs.

The National Commission on Special Needs in Education and Training (NCSNET) and the National Committee on Education Support Services (NCESS), established by government in 1996, have attempted to identify barriers and needs in all aspects of education, providing guidelines for transformation of all levels and aspects to ensure that all learners have access to quality education.

The proposals included guidelines on the development of enabling mechanisms for this purpose. The vision proposed by the NCSNET and the NCESS is that of an education system that promotes education for all and fosters the development of inclusive and supportive centres of learning that enable all learners to participate actively in the education process so that they can develop and extend their potential and participate as equal members of society. The principles guiding the broad strategies to achieve this vision include:

- acceptance of the principles and values contained in the constitution and White Papers on Education and Training
- Human rights and social justice for all learners
- participation in and social integration
- equal access to a single, inclusive education system
- access to curriculum, equity and redress
- community responsiveness
- cost-effectiveness

In spite of these attempts, the ABET centres in the rural villages of the North-West still reflect a number of discrepancies, and are therefore under-resourced in several areas in general. Most are without libraries, laboratories, and equipment. The human resource factor is another area that still needs to improve, thus educators may not necessarily be able to utilise resources like the libraries, laboratories, or the more modern technologies presently being promoted by SchoolNet South Africa, for instance.

It is reported that "many colleges turn learners away because of limited resources. At some colleges, staff have reported barriers, which learners experience in gaining access to the institution, because of the problems of language proficiency, accommodation and transport. And thus access and selection criteria are becoming more formalised and linked to the matric examination", according to the Report of the National Business Initiative (2000:10). Indeed the University of North-West reports a very high failure rate for English in the first year, which means that already, part of the problem from the

school system spills over into higher learning. Remedial measures are needed even more for the learners at the pre-tertiary level of “night school’ learning.

A suitable technology-enhanced model to assist out-of-school youth (matriculation drop-outs) from the rural schools of the North-West in the critical areas of academic subjects was explored in this study. The model was expected to utilise the combination of distance delivery and educational technologies to enhance the education of these target learners, and the suggested incubation centre for this model would be the University of North-West campus. This would have immediate implications for training of trainers in the technology-based domain of education and learning. The output of diplomates in Information, Communication and Technology would not meet the demand of *e-learning* in South Africa, according to the HSRC report of 1999. Multi-skilling and strategic partnerships have thus become essential, but these are just some of the problems.

2. The target group for the present study

The typical rural learner under investigation has been, in the first place, any young person who has dropped out of school because of a failed matriculation examination, or an entry into the traditional school because of socio-economic reasons, and in the second place, an adult learner who is employed and can therefore not attend the day school. This particular student has moved from the traditional school system to the ABET (Adult Basic Education and Training) system, which admits adult learners to prepare them for the examinations. Clearly the emphasis at most ABET schools is the syllabus, which has to be covered within a given deadline period (Schwann and Spady,1998). Learners often

find themselves faced with the difficult task of adjusting to a system of "night schools" with learning that is more fast-paced than the school learning because of the shorter hours (between 15h00 and 19h00, or between 16h00 and 20h00). The evenings are dark, especially in winter, as there is no road lighting in the villages. Some learners have to walk long distances to the learning site and back. The harsh winter conditions and rainy weather often affects attendance levels, which are low during the harshest winter months when nights are dark and dangerous. Bushveld areas harbour dangerous reptiles and other animals like snakes, and rivers that are completely dry during the dry season and full to the brim during the floods may traverse the villages. Most of the villages use weakly constructed footbridges to cross rivers. Many are the problems which beset rural ABET learners, who have always had to wait for the day learner to vacate the school before they could access the classrooms (Dimpe:2001). These problems were reported to be real by respondents in this study.

3. Examples of the rural ABET educators' and learners' problems

The ABET learners are in a unique position of disadvantage, and indeed the problems they encounter are felt more poignantly by their educators, whose performance cannot match that of the day school educator. There is an indication that the adverse adult education situation in the North-West Province has been building to a climax, with adult educators complaining about lack of facilities, delayed supplies and pay cheques, infra-structural support and other issues. The adult educators also do not have a union, according to the education spokesperson, Ms. Patricia Boikanyo. The latest reports on

the adult education situation in the province indicates that the administration is not healthy (Rantlha, The Mail 30th May, The Mail 24th May 2002). Other problems point to corruption by top officials. This has been reported in the media.

An unfortunate situation in developing countries is this corruption and maladministration of development funds, including donor funds, as has been reported in the past. Domatob, Jika and Nwosu (1987) report on dumping of technologies by the first world into third world countries without any follow-up on equipment update. The systems are simply dumped and left there. The multipurpose centres are a case in point, and the respondents of this study have alluded to them being underutilised or wrongly utilised, hence the negative attitudes towards their possible usage as distance education distribution centres.

4. Exposure to enabling environments

The rural learners in the North-West are aptly described as typically disadvantaged because of limitations placed upon them by lack of the variety of literature available to the urban learners, lack of exposure to visual technologies of video and television, lack of exposure to cognitive enrichment because of the restricted environment in which they live. Studies indicate that areas like *Mathateng* village near Mooifontein, *Mmammutle* village near Taung, and *Pudimoe* village near Vryburg are some of the villages where television sets are not known, and radio sets are very few as observed by Phatse(1999). In *Mmammutle* village, posing for photographs was a new experience to some villagers encountered by Gaanakgomo (1998). The studies conducted in the Department of Communication at the University of North-West between 1998 and 2001 indicate that

lack of electronic media of communication has an impact on development, particularly for younger learners, whose only resource is the school educator and the home environment. The “digital divide” has indeed been cited as the reason for disparities in education of urban and rural targets. Hence Dhanakaran’s (1998) assertion that the number of telephone lines in Africa are much fewer than the number of children born in the villages.

5. Cultural factors

The cultural barriers to formal learning are many. Interaction between adults and children in rural areas is more restricted by the culture among the *Tswana* people. More communication between the generation groups is found at the *Kgotla*, which is the place for court disputes, government information, and interaction, mostly between male members and the traditional leaders. The modern *kgotla* has seen some improvements in cultural activity within the rural communities, with traditional and school music as well as traditional performances featuring prominently as a result of the activities within government that are promoted as deliberate intervention to re-ignite the culture and to educate the tribes. *The Cultural Calabash*, an event showcasing the *Tswana* culture and originally staged in Taung is a typical example of one such activity, which is also designed to promote tourism. The smaller and poorer villages experience very few such activities. Similarly, they do not become educational hubs. Females may not have freedom of movement in these villages, and the idea of the “night school” can be problematic for female persons. Foster (1973) observes that not all cultural elements or institutions can be easily combined. Between some there is logical compatibility, between

others, a logical incompatibility. When logical compatibility exists, change comes about with difficulty. Many cultural practices are responsible for resistance to change.

6. Social Factors

Poverty is prevalent in the rural North-West. Unemployment is very high among the youth, with almost two thirds of the youth in the age group 20-24 unemployed, while three quarters aged between 15 and 19 could not find a job (Census '96). Most of the youth are unskilled and there is a total collapse of the youth labour market. The high teen pregnancy rate and the prevalence of HIV-AIDS are other factors that may pose several social problems in the rural areas, including the decline in education figures.

7. Geographical factors

Many more barriers to learning are prevalent, some of which emanate from geographical factors, which make it difficult for learners to travel to school. Lack of electrical infrastructure and water resources and road systems are an indirect barrier to access to those technological resources the urban learners are likely to access easily at home and sometimes in the school, as well as within the community in which they live.

A day in the life of a rural learner is quite different from that of the urban learner. Distance from school, lack of transport and the home environment are some of the factors that make learning difficult. Coombs (1978) adopts a systems perspective in addressing rural growth. The view, he explains, "equates rural development with the far-reaching transformation of the social and economic structures, institutions, relationships, and processes in any rural area. Rural development also includes emphasis on equitable

distribution as well as creation of benefits. The rural development model was also harnessed in building the model for technology-enhanced distance learning that would solve the problem of the disadvantaged ABET grade 12 learner.

8. Technology-enhanced learning as solution

The redress of education for rural learners looks to technology-enhanced learning as a solution, and throughout history, models have been developed to assist the learners from developing backgrounds through technological means. Some mistakes have been done though, since politicians did not take a lot of variables into account. Thus some projects actually collapsed. The erstwhile Bophuthatswana EDUTEL project introduced by Welch (1985) and predicted unsustainable by Moja (1985) closed down abruptly in 1995. The SABC education project has progressed very slowly, and is thus not accessed by most rural areas to date. The EDUTEL radio project was halted in 1995, and the Ulwazi radio project, an experiment in mass scale provision of ABET, only managed to assist few areas during its short-lived broadcast period of five years from 1994 to 1998. However, the Olset programmes are still being used in some rural primary schools, although not enthusiastically (Naidoo:1998).

The video production model was very successful in areas of English literature, and the radio cassettes delivered for Setswana, English and Afrikaans were very effective in the study of the languages at the EDUTEL project. This study sought to establish a model for technology-enhanced learning to young adults and out-of-school rural matric learners in the ABET schools. The model promotes the idea of simple affordable materials of

electronics and print to assist learners, in order to expose them to those areas they would otherwise not understand within the domain of the traditional learning delivery systems of the text book and congested notes.

Al Gore, former Vice President of the United States, supported by former President Clinton, tabled the American National Plan for Access to 21st Century Technology in 1996, named "Every child in America deserves a 21st century education and access to 21st century technology" after it had become evident that there was far-reaching public support for the increased use of technology in elementary and secondary education. It was noted that 69% of Americans believe that the use of computer technology had improved the quality of instruction in their local schools and 82% believe that schools should invest more in computer technology for instructional purposes. Net courses for high schools have been offered in schools supported by the Federal Technology Innovation challenge Grant in the Virtual High School project (Gore: 1996).

While the North-West Province is gearing itself for the use of technologies in its schools, studies like the present one would isolate certain factors in technology-enhanced learning in order to give direction to how it could be applied in distance learning for rural and other disadvantaged learners.

9. Past Solutions

Butcher (1998:38;www.saide.org.za) observed that "the key challenge facing South Africa in this period is the need to transform an education system that was ravaged by

many years of apartheid educational policy and international isolation". Distance learning centres are not found in most of these areas, and where they are found, they provide only higher education. Therefore the distance learning solution has never been tried as solution in these areas for pre-tertiary education. Several projects have been cited, which were designed to support formal and informal education, both in the international arena and nationally in South Africa. Most of these were done on an experimental basis, and most of those documented have collapsed for several reasons, among which were lack of planning, imposition of sophisticated systems into a relatively underdeveloped economy or society, dumping of technologies, lack of co-ordination, lack of sustainability, competition, resistance to change, and lack of funding (Mc.Anany:1980, Schramm:1977; Domatob et al:1987).

Drama, song, technologies of radio and television, and other forms of cultural performance like story-telling and sitcoms have been attempted by educators across the globe to enhance and supplement education. More recently we have seen the emergence of the Internet, a very powerful tool for information retrieval and interactive education, both internationally and at home, with millions of websites in place to offer an overwhelming amount of information, direct education and on-line interactive learning to several people with access to the technology. Partnerships between industry and schools have emerged in parts of South Africa where learners access education through the Internet with the assistance of their mentors and educators. Some of the most enviable models were developed through the partnership between Multichoice, Orbicom and

M-Web, using both the Internet and satellite technologies (Chaane:1998). The target group consisted of teachers. The North-West Province was included in the project for the first time in 1999. A few more projects to promote technology-enhanced learning include the Mmabatho High School project near Mafikeng (Rantlha, The Mail, 20th April 2001). However, because of the expenses involved, these projects are accessible to few.

10. Ideas from the SABC Broadcast Conference

The quote below, from the SABC Broadcast Conference of 1998 suggests that at that stage debates went beyond distance education to technology-based systems as the way to go in order to solve the problem of gaps in formal school education, adult education and literacy. "With the Internet, education is just a click of the mouse way"(Chaane,1998:60). Thus at that stage the conference participants, electronic companies and educators, the South African Institute of Distance Education (SAIDE), Matsepe-Cassaburi, then chairperson of the SABC and now Minister of Broadcast and Telecommunications, as well as overseas champions of educational broadcast technology like Seligman (1998) of the British Broadcasting Corporation and others, were interested in the convergence of broadcasting and other technologies and strategies in the provision of education among disadvantaged learners in South Africa. Distance Education was at the heart of the debate, with broadcasting and its sister technologies indicated as solution and a greater part of an emerging model towards technology-enhanced learning (1998).

The use of broadcasts for adult education will also be considered in this study.

Already broadcasts are being delivered through transmission, but lack of access to television makes it difficult for some to view the broadcasts. They may have to be carried

to the classroom, but systems and personnel have to be in place for both the organisation and teaching of learners.

11. The University of Cape Town Centre for Extra Mural Studies

The 1980 conference on The Role of the University in continuing and Adult Education is of particular interest for our present study, whose target audience is the "adult learner", who by definition will be anyone above age fifteen and not receiving instruction in the traditional school (Multi-Year Plan for ABET:1998). After the conference, where different institutions submitted papers describing their models, the University of Cape Town Centre for Extra-mural studies was established. The centre was an effort by that institution to house research towards developing a model for continuing or adult education. Unfortunately, at that stage, South Africa did not have a national policy. However, Millar and Walker (1980) are of the opinion that these were the beginnings of model formulation for adult education in South Africa.

12. Motivation for Distance Education

What motivates distance education in most countries is lack of access, resulting from geographic or social circumstances, educational imbalance, the emergence of adult classes (for new training or retraining as the circumstances may dictate), the emergence of community and communication systems, establishment and development of postal systems, diffusion of colonial practices as traditional practices change, and globalization, among other factors (Adekanmbi:2001; Millar and Walker:1980). UNESCO statistics reveal that ten million students, mostly adults, study by correspondence in nearly every

country in the world, according to Keegan (1993). The significance of distance education can therefore not be underestimated.

Keegan (1993) also noted that the development of communication technology offered a wonder that saw the Industrial Revolution ushering in a university called the virtual university. In this university without walls, continually collaborative ventures are readily accomplished. Moore (1976) pointed out the need for describing and defining the field of distance education, discriminating between various components of the field, identifying the critical elements of the various forms of teaching and learning and building a theoretical framework which will embrace this whole area of education. And thus over time, the study of distance education has come to include several aspects of the interaction between human persons, persons and machines, machines and machines, all at a distance, for the sake of equity, democracy, and access (removal of constraints and barriers). Moore (1976) points out that these aspects, which relate to the solution of socio-political, economic and cultural problems in education, do not often manifest themselves in conventional education, because indeed education is not just the self-involvement of individual learners- it is an intrinsically organisational and communal enterprise, he observes.

Therefore distance education has a long and diverse history, and in South Africa, as in the rest of Africa, it has its roots in colonialism (Adekanmbi, 2001:6). The mega-university that the University of South Africa has become has its roots and foundations as well as its influences from the British system of distance education, and has taken a lot

out of the open learning model of the British Open University, the distance institutions in the United States and from other universities abroad throughout its years of development, and thus has a role to play in the global arena. Continuing education for adults has also benefited from this development.

13. Distance Education Theories

According to Keegan (1990), distance study is an artificial dialogic learning opportunity in which physical distance between the learner and the helping organisation is bridged by artificial means. Keegan emphasises the system of autonomy of the learner, which is termed “independent study” by other writers. Keegan (1990) refers to distance education as the most industrialised form of education. The concept of two-way communication is also one of the most important elements of distance education. The emergence of new technologies has, however, changed the concept somewhat. For the Internet learner, the concept distance may have a totally different meaning from that of the print learner, who has to wait for feedback.

Keegan (1993), in his theory, also concluded that distance education should not stop at packaging of teaching materials only, but that it should go further and provide advice and support for students. The counselling dimension is more needed among learners from poorer and disadvantaged backgrounds. The basis of distance education here is clearly the plight of the underprivileged, which calls for political and other forms of intervention.

While Keegan (1990) emphasised the system and the autonomy of the learner, and acknowledged Wedemeyer's (1981) theory which emphasises "independent study" that is free of goals and institutional constraints, Schwann and Spady (1998) poignantly exposed that bureaucracy has introduced into the education system, elements of time programmes and procedures and methods of teaching instead of standards, achievements and purposes for which learning takes place, outcomes of learning. They assert that the industrial age has used the assembly-line theory to churn students from an insensitive segment-to-segment system through the curriculum, which uses uniform terms for different students, during a prescribed time-frame. They are concerned about the Agrarian age model in schools, in which everything is defined from the semester-to-semester time-frame, which includes even the opportunity to access to learning, curriculum, grade levels, reporting systems credits, teaching assignments and contracts. They finally refer to the outdated practices, which discriminate against students by sorting the faster from the slower. The feudal age agenda, they say, separates and grades learners according to superficial criteria. This often leads to discrimination in education. Youth from historically disadvantaged, especially rural backgrounds, tend to miss out on quality education because of social disadvantage, which is mainly caused by the way education has been organised around the country for many years.

Moore's theory on the other hand refers to difference in the extent of "autonomy" and that of "distance", and appeals to the matching of programmes to learners so that they exercise *maximum autonomy* as they grow. Keegan (1990) describes distance education

as the most industrialized form of education, while Holmberg (1981) describes it as "guided didactic conversation".

Wedemeyer (1981) has presented another theoretical approach to understanding distance education that places emphasis on independence. He uses the terms "independent learning" and "distance education" in comparable ways. He states that the term independent is thus more than a descriptor for a kind of non-traditional learning that makes use of distance teaching, which is free of goals and institutional constraints. However, Garrison (1989) has argued strongly against "independence" as propounded by Wedemeyer(1981), and he placed the system of control as significant factor in distance learning. Garrison(1989:24) says "the term independent learning therefore runs the risk of obscuring the true nature of the educational transaction to which it applies".

All of these theories have set in motion some useful debates around the terms control and independence on the one hand, and autonomy and equity, on the other.

The reconstruction and development programme (RDP) put in place by the new democratic government in 1994 has ensured that policies are in place to ensure equity in education, among the priority areas the RDP would address. It is hoped that the strategic political merger recently between the University of South Africa, SA Technikon and the Vista complex of satellite campuses will afford more accessible education to the less advantaged majority of South African learners as a reconstruction move. It is also hoped that the new mergers suggested by Minister Kader Asmal will expose the dire needs of the poor and marginalised learners in rural and other disadvantaged settlements.

The model developed in this study looked at what was appropriate under practical conditions rather than what is ideal.

A lot of people have missed out on conventional school education in their early ages because of social and economic backgrounds, geographic factors of climate and distance, formidable terrain and weather, unfortunate historical backgrounds, health, disability, situational family factors, and several other factors emanating from poverty, cultural factors, for example gender discrimination. Evans (1994) notes that several open and distance learners' stories have identified the common in the foundations upon which they built their learning. However, she says, no person should be denied the opportunity to learn because of poverty, geographical isolation, social disadvantage, poor health, and institutionalisation, based on the ideal of social democracy and liberal philosophy propounded by Rogers (1970). Rural North-West is a typical example of a setting which depicts disparities in education, where the more privileged may have access to higher or quality education than their less privileged counterparts, and young people have to go to adult classes because of exclusion from the day classes, as a result of their socio-economic, cultural and several other circumstances.

Thus adult and distance education, founded on the principles of life-long and continuing education, have their roots deeply embedded in the politics of a literate civil society, where equity and justice are keywords, global developmental and cultural issues play a part, and the industrial revolution with its ever-changing needs within the corporate

private markets ensure the dynamism of the entire adult and distance education movement world-wide to tap into the information highway in a changing world.

UNESCO, The Commonwealth of Learning and other organisations, have addressed the need for lifelong education from various perspectives. What is relevant for this study is the plight of the employed adult learners, who are disadvantaged and need to access information as easily as their more fortunate counterparts. These learners obviously need to be accommodated in the system of life-long learning. On the other hand, plight the young dropout learner, who enters the adult school because of a range of factors that militate against his or her schooling, also needs to be addressed. The key phrase to use here is "equity in education provision".

The National Plan for Higher Education in South Africa calls on institutions to increase their enrolment of non-traditional students, among whom are workers, mature students and the disabled. Glennie (2001) of the South African Institute for Distance Education observes that this call reflects the increasing proportion of high-skill labour required in our economy, and is in line with South African policy statements that note that the overarching goal of policy must be to enable all individuals to value, have access to, and succeed in life-long education and training of good quality. "Internationally 40% of higher education students in some countries are non-traditional students", she observes. A lot of these, however, experience constraints just before they enter higher education. The high dropout rate at grade12 level among rural youth is cause for concern. Ways to assist youth in transition have been devised; hence the upgrading classes to assist

matriculation passes and to facilitate examination enrolment. However, the rural youth still do not access these programmes.

The area of adult education and training is a very broad and difficult area, where, because of the many legacies and inequities of the past, the black learner from age 15 may enter an ABET programme and be defined as an adult learner. Indeed, the Multi-year Implementation Plan for Adult Learners (1998: 76) indicates that for purposes of Adult Education and Training, adults are defined as

all persons aged 15 years and older. Estimates are that there are a potential 9-10 million adults who require ABET and over 7 million potential participants for Further Education and Training sector.

The key components of target setting for the present study used this broad definition of ABET targets, and then singled out those who entered the ABET programme after failing matriculation examinations in the school system. The rural learners have to join the ABET programme because they cease to have a special classroom in their own school, which cannot accommodate them because of heavy class loads, according to the 1998 Report on ABET. In the ABET class, they begin to encounter several problems, which have been discussed in this study.

It is also important in the discourse on rural ABET education to ensure that we note the assertion by Coombs(1978) that rural areas have consistently reaped the fewest benefits from "modernisation".

14. Training and Staff development for Open Learning

Open learning is another facet of continuing and adult learning, which has become prevalent in the present age of technology. Because of its unique character, open learning differs in its delivery from traditional classroom learning, and hence needs specialised training and in-service development of trained educators to effect it wherever it is implemented. Its elements are well-defined skills, attitudes, and approaches, in a climate where training environments are characterised by practice and feedback, tutorial support, and consultancy. Trainee open learning providers belong in the domains of creative writing for courseware design, teaching, assessment and evaluation. Thomas (1995) suggests that for institutional development in the area of staff development for producing and for using open learning projects, a university might have to have an open learning centre with a staff on part time secondment from faculties, who would work with a selection of major courses across the university on the selection and development of materials and on devising open learning implementation systems. The approach could be supported by four parallel sets of staff development activities. Thomas (1995) suggests training of open learning staff, working with selected module teams on aspects of open learning, assisting managers to stay abreast of development and work through the institutional implications of open learning, ensuring that the entire university staff is aware of the developments within the module teams.

Technology-based systems also entail training of educators as specialists in diverse Information and Communications Technology areas. An experiment by the Shoma Foundation reveals that some educators are already exploring the benefits of using the

computer as a teaching-learning tool. The implications for adult programmes for the North-West targets under study are obvious. The provision of a technology-enhanced system of learner upgrading in the North-West has to be championed by a university that has dealt with the experiment at another level, and indeed understands the young adult learner from a historically disadvantaged background. The University of North-West, typically experienced in training members from the disadvantaged communities, is challenged to embark on training for a technology-enhanced delivery of distance education at this level.

15. Technological Advances and Distance Education

Distance education is being called upon to meet some of the felt needs in several countries all over the world (Keegan:1990) and has been practised in several countries for many years. The reason for the provision of distance education has emanated from lack of access to traditional classroom education because of time and distance constraints.

The need for distance learning programmes is also supported by rapid advances in technology, changing settings, industrialisation, the fight against global illiteracy and underdevelopment, curriculum changes, necessitated by changing markets, advances in telecommunications and the revolutionary advances in Internet technologies. Self-education has been made possible for many learners through several available means, thus several theories that have merged have taken varied platforms for their arguments, with concepts of "distance" and "self-learning" or "autonomy" placed under scrutiny.

This had had the effect to link distance education to educational technology, and to set the stage for debate about the two entities, which according to Keegan (1993) are not the same. The convergence of technologies of the modern information age has however; set

the tone for more intense debates around the concepts "distance education" and "communications technology". This study has defined its own distance education parameters, which are subsumed under the new suggested model of technology-enhanced intervention, the combination of learning modes identified (at home and at ABET centres). Distance learners can learn at home and through organised contact classes, and be supervised by the university, which offers training of distance educators and co-operates with ABET educators, while directing the utilisation of technology-enhanced methodologies. The common denominator for provision of distance education has been found to be lack of access to the traditional daytime classroom education because of time and distance constraints, among others, but most significantly because of deliberate exclusion of the repeating ABET learners by the day schools. The technologies for distance education have been incorporated into the mainstream educational technology and design, precisely because technology and educational design are inseparable. Educational Technology is defined by the Association for Educational Technology and Communications of the United States of America as

a complex and integrated process involving ideas, devices, and organisation, for analysing problems and devising, implementing, evaluating, and managing solutions to those problems, involved in all aspects of (human) learning (Knirk and Gustavson:1986).

The definition contains, to a large extent, some significant elements of distance education. Thomas and Kobayashi (1987) analysed the relationship among the elements of distance education, which are characterised by the Domain of the Educational Technology Model, which outlines the Educational Management Function of

Organisation Management and Personnel Management; the Educational Development Functions of Research Theory, Design, Production, Evolution/Selection, Logistics, and Utilisation /Dissemination and the Learning Resources themselves, Messages, People, Devices, Technicians, and Settings. All of these are said to be to the advantage of the learner. Technologies such as broadcast technologies, have, for instance, given education access to several students who would otherwise never access the education, both formal and informal. They also form part of the information and communication technologies (ICT's) suggested in the study.

Implicit in the definition of educational technology is the fact that mediation of education cannot be done through instruments alone, and that human beings, organisation, scientific processes, and learning resources are always involved in the process. Hancock(1977) asserts that media are now treated within an overall systems framework and their success and relevance is seen as proportional to their integration with a number of related processes. This assertion has influenced the model that emerged from this study.

This study explored the need for a suitable distance education model for learners who have been denied access because of their gross disadvantages resulting from several factors, among which are poverty, cultural constraints, social isolation, geographical disadvantage and sometimes lack of information and various disabilities. The utilisation of technology-supported programmes is a vital part of the distance learning mode, and cannot be isolated from it. Open and flexible learning modes are also supported mostly by the technologies of communication (media) like radio and television for instance.

Matching the special needs of the learners to the technologies and strategies of delivery has been attempted in several models with success. It is therefore important to associate the modes of learning with the use of mediation strategies and techniques that refer to both the technological instruments and their integration to educational design and methodology as part of the distance education being explored, in order to make sense of the discourse at hand. Thus the discussion of distance education in this study also considered the technologies appropriate to the learners as well as the educational programmes.

16. Distance Education Nomenclature and Definitions

According to Keegan (1993) distance education has been known by a bewildering variety of references. The Australians, he notes, refer to "external system", while in Britain, distance education is unofficially called "off campus study". The terms "open learning" and "correspondence education" are used to describe distance education in Britain and some of its colonies, while the North Americans have come to refer to it as "independent study" or "home study" as in Europe. In France it is known as *te`le`-enseignement*, in Germany it is described as *educacio`n a distancia* (Rumble:1992). The terminology "extra-mural" refers to distance education in New Zealand (Keegan: 1993). This terminology has come in vogue because of the historical circumstances in various countries. All have peculiar circumstances similar to distance education, and distance education has been used simultaneously, but lately the universities have designated themselves "distance education" and "open university systems"(Keegan:1993). The

relatively new terms, "virtual education", "telematic systems", and "web-based education" emanate from the use of the Internet as a self-learning system.

The narrower definition of distance education by UNESCO (Keegan:1990) uses terminology that would need closer scrutiny, a more modernised interpretation of terminology like "postal services", "correspondence education", "tape-recorded materials", "taped exercises", "criticism and advice", and a more inclusive definition of the terms "separation", "distance", "organisation", "media usage", "two-way communication", "industrialisation" and "independence".

The present study revolved mainly around the inclusive term "distance education"(with its concomitant openness, flexibility and elements of educational technology, which encompasses the idea to provide an educational facility to accommodate a larger number of people scattered all over, providing greater access to education). The term basically emphasises separation of the teacher from the learner, planning of educational programmes and materials by an educational organisation, and the use of technical media on a larger scale, while it offers a modicum of contact between the learner and the provider during vacation sessions and Saturday group sessions.

In industrialised countries, educational history indicates, education was initially the privilege of the few. Institutionalisation of education later became the norm, with its attendant restrictions of time and space, curriculum and assessment and so forth. The concept of "independence" and "freedom", encompassed in some definitions of distance education emanates from the constraints brought about by traditional schooling. On the

other hand, Sewart (1982) observed that industrialisation has inspired some definitions of education, and therefore “mass education” becomes the norm in other definitions.

How distance education has been delivered in the past has influenced those increasingly limited definitions that dwell either on methodology, instructional design, and media technology or on the notion of constraints, production for the masses, and so forth.

Thus, according to Keegan(1990), the true definition of distance education continues to be evasive, given the advances in technologies, the temporal and spatial shifts in ideology, the transfer of culture and the industrialisation of developing countries, foreign aid and globalisation of education.

On the other hand, terminology associated with distance education, learning through correspondence, open learning, flexible learning independent learning, etc., shifts the emphasis somewhat. Thus the learner, or the content of learning, or the tutor, may be at the centre of the definition, depending on how, when and where the learning takes place.

Gillam (1995) has attempted to define these terms and insists that they are “not coincident in meaning”. Thus independent learning is done by active students who work at their own pace and use materials and books of their choice and do not depend on tutors, while learning by correspondence may coincide, historically, with distance learning, where tutorial materials are developed for learners, who later present themselves for an examination. A good example is the University of London with its long history of distance education through correspondence. Flexible learning is a more

recent term, which recognises the myriad of opportunities open to educators as new procedures, new ideas and new media appear. According to Gillam (1995:35), all available opportunities are utilised for the benefit of the learner in flexible learning. He defines the open learning system as

one which puts the individual learner at the centre of things. It is sensitive to the learner's motivations, anxieties, convenience, preferred study mode, and timing. The learning materials, which accompany an open learning system, are precisely targeted at particular learners, are learner active, personal friendly, and conversational in style.

The advances in technology, which brought electronic media and the computer into the educational design domain, have largely influenced advances in distance education provision. The latter media have come to change the notion of distance and to influence re-reflection on the concept of distance. However, several writers, among whom are Hodgson, Mann and Snell(1990), have agreed that elements of distance are found in both traditional and open learning from time to time, and that an element of flexibility is found in each one of the delivery modes

According to Bell, Bowden and Trott (1997), distance education is a two-way traffic between students and their supporting organisation. Self-contained courses and study guides, prescribed or recommended reading comprise the one-way presentation of learning matter. Print materials delivery, telephone delivery, and delivery through other media that act as supplementary or secondary face-to-face means comprise the two-way traffic in distance education. The definition, appropriate to the time of its formulation and the nature of distance education delivery then, fails to address many other issues.

Hodgson et al (1990) emphasise that access to education is the basis of distance education definitions based on the philosophy of “education for all” or “equal education” where some observers perceive education as the privilege of the powerful few.

Definition of Open Learning has also revolved around the concept of freedom from constraints on the learning process, according to Hodgson et al (1990). The constraints are grouped as administrative constraints of time, space, duration and cost; educational constraints of objectives, methods, sequencing, entry qualifications, assessments and evaluation. Orientations differ, and so do definitions, because of the varying points of emphasis. Thus while some may emphasise the learners position, others will emphasise the educator’s position. The position of content is vital for any definition of distance education, because it has implications for modes of delivery of such education. Whether the education is formal, informal or non-formal also has implications for content.

Garrison (1989) argues that distance education that emphasises independence cannot be learner-centred. The model that must emerge from this thesis must demonstrate the most important elements of the technology-based distance education so that ultimately the learners benefit from the totality of the collaboration between the subjects in the system. It is also important that accessibility is maximised through strategies that will ensure that there is no breakdown in the system, and hence the inclusion of the community in the model.

The open learning systems are often better operational in industrialised urban environments, and therefore the present study centres around a revolution. Drastic changes in infrastructure and the way people are used to doing things are necessary so that the model succeeds in the rural setting, and benefits the less privileged young and adult learners who need to qualify for entry into higher education.

On the other hand, distance education has its own problems, both internal and external, which impact upon choice of content on the side of learners on the one hand, and cost-effectiveness on the side of the managers, who often prefer to enlist large numbers of students in popular market-related subjects. Harry, John and Keegan (1993) warn that academic freedom is often thwarted by those pressures pertaining to the need to attain a critical mass for the distribution of distance education products.

Power struggles are another problematic area in distance education provision. Lots of compromise, adjustments and arbitrary decisions are often sometimes necessary. Harry et al (1993:26) refer to another aspect of internal problems in distance education, where course creation is shared amongst several people. They observe:

the process is bureaucratised, and shared responsibility is no longer part of the spirit. Team members become demotivated, which leads to collective irresponsibility. The collaborators are no longer partners in creating collective work.

17. General Classification of Distance Education Models

Distance education models reflect the theories and practice of distance education as applied by the institutions that dare to plunge and experiment with open learning, using certain modes of delivery to attain their objectives. It is not easy to classify one particular

model under a specific theory, but it is indeed important to note that in the final analysis, each distance education model identified has certain common elements with the next. The advances in technology have made it difficult to draw the line between traditional one way and non-traditional two-way models, or to refer to typologies, because of the shifts in paradigms and the continuum between the models.

Van den Brande (1993) refers to learning scenarios. These can be split into human learning scenarios, computer-based scenarios, intelligent tutoring scenarios, simulation scenarios, and collaborative learning scenarios. McKenzie, Postgate and Scupham (1975) analyse the open learning systems based on their common problems. They cite the following: educational issues, the impact of educational technology, innovation and planning, the students, their situation and needs, research and evaluation, the curriculum and choice of media, the use of broadcasting, making the courses, the use and transfer of experience, effectiveness and costs framework.

Keegan (1993) has attempted to reflect on theoretical principles of distance education based on didactic, academic, analytic, philosophical, and technological underpinnings. A lot of the arguments refer to access and quality of collaborative distance education. The models of distance education highlighted in the literature reflect various paradigms in distance education that can be said to be supplementary rather than in conflict.

A convergence of models is made possible by the fundamental use of pre-packaged course materials by private learners who, irrespective of the quality of teaching, manage to learn through correspondence from a specific institution at a distance.

The appearance of new psychological processes which have been intensified by the development of communication technologies, have given "life contours to the sophistication of so-termed Correspondence Teaching, often confused with the term Distance or Open Education ". Thus various distance education systems get names based on their activities and technological dependency or the dominant paradigm. We thus refer to the teleschool, the multi-media approach, and open school, learner-centred approaches.

Classification of distance education systems or institutions is done according to the philosophy, the media and the didactic and other approaches to the education provided. These broad classifications will be dealt with and analysed later. A few distance education institutions are being isolated in this study for analysis, to demonstrate the complexity of the distance education debate.

A history of the British Open University indicates that it started off as a correspondence institution using print as its main delivery system, and as it evolved, began to use supplementary means of audio, video, and the more interactive computer, indicating that the media are secondary to the instructional design that comes in print mode for learners to grapple with during self-instruction.

The provision of dissemination centres has been mooted by the human functions of counselling, guidance and support that become necessary from time to time, according to Harry, et al (1993). This, they maintain, includes the convenience of interaction with real persons to bridge the “distance”, and to ensure flexibility and openness of the system.

18. International distance education models

18.1. British Open University, leader in distance education

Various sources have documented the British Open University, which is hailed in most sectors as the leader in distance education. Several studies have emerged from the model over the years, and several lessons have been learnt from the model. Extracts from the literature indicate that The British Open University, founded in 1969, had approximately 70 000 students by 1987, and in 1988 it announced its MBA course.

Van den Brande (1993) reports that the university has been an important focus on the use of information technology in education and training, and had conducted experiments in Computer Aided Instruction, Computer Aided learning, audio and computer conferencing, and tele-writing systems. The B.A. degree is the most popular course, but diplomas, study packs, management courses and scientific and technological updating courses including manufacturing, industrial applications of computers, biotechnology, electronics and agriculture are offered.

The Open University has a multi-media approach to learning and thus includes broadcasts, correspondence tests, videos and audiocassettes, as well as face-to-face

tuition. There are tutoring and counselling facilities at 250 study centres throughout the country, which offer opportunities to meet regularly with tutors. Counsellors and fellow-students and also to make use of computer terminals. Telephone tutorials are sometimes used on course with smaller populations where face-to-face teaching is uneconomic. Extensive use is made of computer technology in administration and the continuous assessment process.

According to Van den Brande (1993), a great number of courses in all faculties have components that require students to make use of computers. The home computing initiative assists students at home, linked to the university network, to communicate with tutors. Videodisc technology has also been used for teaching purposes on a small scale, and CD-ROM is being used to carry databases. The greatest activity of the Open University is at the sub-university level. The Open Tech programme, launched in 1983 by the Government training agency, the Manpower Services Commission, developed approximately 30 000 hours of flexible learning materials equal to the syllabus of a local authority funded college. By March 1987 over 50 000 students had studied under the Open Tech Programme. The Government backed television Open College offered continuing education and vocational education courses and by Spring 1988 some 400 access centres had been established and nearly 20 000 students had been enrolled, 80% of these were company-sponsored.

Van den Brande (1993) also reports that the Department of employment has also developed a new programme of flexible learning with supported self-study. The

programme aimed at developing individualised learning within the context of the national school leaving examinations, with mathematics, science, technology, business studies and modern languages as priority subjects. For further and higher learning, the Department of Employment funded the project to produce the computer assisted learning (CAL) production system that teachers would use to produce good quality, inexpensive CAL materials which conform to good principles of teaching and learning. The work of the project was being carried out by the University of Bradford and would lead to the development of an “Electronic Learning Factory”.

18.2. Electronic and print models of distance education delivery

18.2.1. Telephone tutoring and audio-conferencing at the British Open University

Harry et al (1993) give a full description of telephone teaching and audio-conferencing at the British Open University. One-to-one tutoring and teleconferencing are the two forms of telephone teaching at the British Open University. Neither is used to deliver content. It is used to assist students to learn from their printed and other materials. It is a replication of the kind of small group activity that goes on at face-to-face tutorials. The budgets for telephone tutoring come from regional budgets. Tutorials, given in thirteen Open University regions, are optional for students. Evenings and weekends are used for study centre meetings for post-foundation courses. The telephone tutorials enable students to interact with their tutors in real time, and for some students, are the only means of immediate contact. Both formal and informal tutorials are given through the one-to-one telephone tutoring system. British Telecom’s Conference Call Service(now privatised) is used for audio conferences, and uses a widely available and familiar domestic

technology. Enhancements to the basic service increase the costs somewhat. Changes in prices have actually affected the service and the number of students using the system. Audio-conferencing is used to save travel costs, and to provide educationally desirable interaction for widely dispersed groups who would otherwise not be able to meet. The Saturday school and the vacation school concept have been used for many years in South Africa. The telephone service can also be effective, but radio has had better appeal because of its reach and relative cost-effectiveness.

Harry et al (1993) report that research has demonstrated its effectiveness for a variety of cognitive tasks. In general, tasks involving information transmission, problem solving, and generating ideas and giving and receiving information, asking questions, and exchanging opinions can be done as effectively by telephone as by face-to-face communication, and in some cases, more effectively by correspondence.

18.2.2. Media diversity in the British Open University

The British Open University is a system of regular, compulsory, written assignments, which students send to their tutors at specific intervals. The course DT 200 for instance is an interdisciplinary second year full credit (400 hours study time) undergraduate course concerned with social and technological aspects of information technology. The use of the CMC network, linking the students' individual home-based micros to the notion of a "locus of learning" for this course. This network is conceptualised for the students and the tutors as a "virtual campus" or "electronic campus" with simulated places, such as a mailroom, an information centre, and tutorial rooms, which they can visit for different learning purposes.

According to Van den Brande (1993), DT 2000 is possibly the Open University's most media rich course. The course materials include

- blocks of specially written correspondence texts.
- a course reader.
- 16 TV and 8 radio programmes
- 6 audio cassettes
- four commercial software packages
- a disk with a front-end to the University's computer conferencing system
- a modem, which is loaned to students.

Clearly, aspects of the model, while using print as point of departure, are influenced by the advances in technology, re-evaluation and assessment of the model based on economic and instructional design considerations, partnerships with companies (e.g. British Telecom), and the number of access centres used by the distance institution. Can aspects of this model be deemed suitable and appropriate for an emerging North-West model?

Bell, Bowden and Trott (1997) have observed that the Open University has succeeded to a remarkable degree, that its course materials have been widely used and copied in higher education institutions, and that it has provided a model of what could be achieved by a well-resourced distance education institution, which has been adapted and developed in many countries throughout the world, for example, the Netherlands, Pakistan, Spain, Venezuela, often with the direct assistance of Open University staff. Working together with the British Broadcasting Corporation to produce the "University of the Air"

programme, the British Open University made inroads into broadcasting and managed to reach several of its wide audience of members this way in the eighties. However, the print mode of delivery is the one mostly used. Bell et, al (1993) agree with Keegan (1993) that the British Open University model has been selected among the many models because of its long history of service, its reputation, its success and the fact that most other open learning institutions have used its study materials and its services directly.

18.2.3. The Chinese Television and Radio Model

Keegan (1993) reports that China uses radio and television as its main modes of distance education delivery. Television and radio universities at the central and local levels, which have made it possible for more than two million people to receive higher education over eight years, form the Chinese system. Central China Television and China Education Television offer teaching programmes via microwave and satellite respectively, covering its vast territory of 9,6 million square metres. It is the largest institute of higher education in China, but also the “greatest teaching university in the world”.

Harry et al (1993) observed that China was one of the first countries to use radio and television for higher education purposes. Soon after television broadcasting began to develop, the first television universities (TVU's) were founded in the capital, Beijing, and other principal cities to meet the demand for adult education. More than 8 000 students graduated from the Beijing Television University between 1960 and 1966, and over 50 000 students finished single course studies through its teaching programmes.

The cultural revolution of 1966-76 halted these universities but teaching was resumed in 1978 under the socialist regime.

The onset of the new socialist modernisation project (the modernisation of industry, agriculture, national defence and science and technology) called for a larger number of trained people. Enrolment rates had slowed down somewhat, although the primary and secondary education in China was higher than in most developing countries. The forecast for 1990 indicated the need to train more graduates for the teaching profession. An estimated 3,5 million new teachers would have to be produced to train the millions of secondary school graduates for the modernisation project. Clearly, such a huge task could not be achieved through conventional methods within a limited time scale. The TVU's, because they needed fewer funds and could train more people in a shorter period of time, were supported by the state Council through approval of a report jointly submitted by the Ministry of Education and the Ministry of Broadcasting as well as other ministries concerned, on the founding of a national radio and television university in February of 1978.

Enrolment figures were over one million within the eight years of the re-opening of these universities, with over half a million graduating. Harry et al (1993) have also observed that the 604 437 students registered in 1986 formed one third of the entire country's higher education institutes. The achievements have won radio and television universities a nation-wide reputation and have attracted attention of the Chinese Government. In 1986, therefore, the three important changes took place.

The students had to pass the national entrance examination held by the State Education Commission. The target students were all adult higher education learners, TVU students, correspondence learners at colleges and evening school learners attached to conventional colleges and universities. TVU's also began to enrol fresh secondary school learners in addition to in-service adults and young school-leavers. In October of the same year (1986), TVU teaching programmes began to be transmitted by satellite every evening from 4.50 to 11pm. Forty-nine teaching hours of transmission time was thus added to three teaching hours per week. The new participants were local government bureaux, large factories and mines, medium sized or small work units. Television Universities at various levels ran classes for large state-owned enterprises. According to Harry et al (1993), the highest controlling body in the system is the CRTVU (State Education Commission) followed by the PTUV (Provincial Education Commission), then the branch school under the Prefecture or Civic Education Bureau. The branch schools have workstations and Television Classes. Since its resuscitation, the CRTVU has offered 150 courses in the subjects of Mathematics, Physics, Chemistry, Biology, Mechanical Engineering, Electronic Engineering, Civil Engineering, Economics, Accounting, Statistics, Finance, banking, Industrial Management, Commercial Management, Archives Management, Journalism, Law, Library Science, and Chinese Language and Literature.

The TVU courses are multi-media consisting of radio, television, and printed materials. The proportion of television programmes for science and engineering courses is greater than that of other media, whereas radio used to be the main medium for social science courses. Since the satellite transmission of TVU programmes began in 1986, their social

science courses have increased greatly. Audio and videocassettes are also in use in some courses to make up for insufficient transmission time and to provide more convenient access for distance learners. One million audio-visual copies of teaching materials are produced and duplicated each year. Print materials in the form of course books, reference books and study guides supplement the electronic materials and on-air broadcasts.

At present, radio and television programmes are, to a large extent, a direct transcription of conventional university classroom teaching. Presenters are chosen from key universities all over China. In the initial stage it is necessary for TVU's to adopt textbooks used in conventional universities and to choose academics with a sound university teaching background as presenters, so that a high standard of tuition can be guaranteed. These two measures have proved to be effective. The Chinese system is a World Bank project. Can such a system be feasible in South Africa? Can the North-West adopt parts of the model? The North-West can adopt parts of the model, provided that the funding model is sustainable, and the funders do not impose barriers as they fund the beneficiaries.

18.2.4. The Scandinavian models

18.2.4.1. The Swedish Model

The broadcast distance education model has also been used in the Scandinavian countries in projects regularly since the sixties. Ortner, Graff and Wilmersdorfer (1992) report on one of the early successful projects, the Delta project, concerned with further education for teachers in a new Mathematics curriculum. Language courses have also been a very

important area for broadcast distance education. Many of the courses have been produced for broadcasting in several countries, and have involved co-production of both broadcast and text components. The main partners were Brevskolan in Sweden and NKS and Folkets Brevskole in Norway. Some of those courses were used extensively also by the voluntary adult education organisations. This means that in the event of any group of adult schools in the context of our problem are in a position to jointly own programmes, it is possible to co-produce broadcasts and text materials for distance education for the target learners. However, the more flexible recipients for such a model would be the private adult institutions. The present problem explores the possibility of a public distance education model for the most underprivileged and disadvantaged matriculation candidate youngsters and working adults in the rural areas of the North-West. The suggested model to merge all distance learning institutions does not indicate that the more disadvantaged rural targets that cannot complete their matriculation can actually benefit from the merged UNISA-VISTA institutions. This and other simpler models emerging in the South African Scenario have inspired the motivation for this study.

18.2.4.2. The Norwegian Model

The state-run Norwegian distance education institution (NFU), established in 1978, brought no substantial changes to the Swedish broadcast model. NFU added a series of productions to the field, and engaged several publishing houses as well as the national Film Board in its projects, in addition to the Norwegian Broadcasting Corporation (NKR). Two-way communication has also been included in some of its projects, which were usually organised by one of the independent distance education institutions.

Co-operation with the Swedish Educational Broadcasting has been one of the most important areas of activity for Liber Hermods. A series of post-secondary level courses have been developed since 1980, with the computer science course as the most successful as far as student numbers were concerned. The Swedish Educational Broadcasting and Liber Hermods therefore developed an alternative organisational model of post-secondary education and managed to get co-operation from Swedish universities in the organisation of university examinations for students studying their courses.

The collaborative model has managed to produce distance study programmes of high quality regarding academic standards, distance study methods, and practical administration and distribution.

The collaborative effort also made it reasonably cheap to establish and maintain the programme on a national level. Often, collaborative models testify to success in the qualitative levels of course offerings and the phenomenal rise in enrolment figures. The success lies in the combination of experience and expertise from the co-operating partners and the reduction of costs for everyone, including the learners. The course offerings also become significant in these models. Popular courses must also be endorsed by the state and the private sector, so as to attract numbers.

Ortner, Graff and Wilmersdorfer (1992) report that the collaborative model was then imported to Norway in a project called Everyday Law, launched in 1989 in co-operation between NRK, the University of Oslo, NKS, and the voluntary adult education association Folkeuniversitetet.

Of interest to this study were those models of co-operation between independent and state institutions. The Norwegian independent distance teaching institutions have established colleges with degree granting rights for university level education. However, in order to cover a broader range of subjects, they have also developed models of co-operation with state institutions - both universities and regional colleges. The first distance NKS and Rogaland Regional College developed college programme of this kind in 1981. Since then both NKS NKI and Folkets Brevskole have developed distance education programmes in co-operation with several state higher education institutions. The partnership model has been identified by respondents in this study as desirable for efficiency of the North-West. The subjects have agreed on a model that promotes partnership between the state, the University of North-West, communities, and business enterprises like Telkom and others.

18.3. Distance Education in Africa

According to Harry et al (1993), Commonwealth Africa now has more than twenty-five years of experience in distance education. In the 1960's, Botswana, Kenya and Malawi were among the countries where governments decided to use distance education for teacher training and for secondary education, while Zambia began their degree level distance education programmes also at this very time. By the mid 1980's there existed

between 25 and 30 publicly funded distance education teaching institutions in Commonwealth Africa alone. Lesotho, Tanzania, Mauritius and Nigeria are some of these, where distance education was used extensively for non-formal education. Botswana, Tanzania and Zambia have used radio campaigns for public education methods labelled sometimes as development support communication, also practised extensively in Latin America through radio schools. There is documented evidence of success and failure. Moja (1985) states that failure comes as a result of hasty political decisions that do not take into consideration the total developmental and structural situation of the beneficiaries. The writer correctly predicted the failure of EDUTEL in the North-West Province, and indeed, by 1995 the station had closed down.

In East Africa, the College of Education and External Studies in the University of Nairobi has a long experience as a specialised distance-teaching institution, which has worked mainly in formal education but has also moved into non-formal education in training literacy tutors. Two non-governmental institutions have headquarters in Nairobi. The African Medical and Research Foundation (AMREF) also runs programmes of public education in health, using distance-teaching methods. The Institut pour le Developpement Economique et Social-Formation (INADES-formation) whose parent body was established in Cote de 'Ivoire by the Roman Catholic Bishops of West Africa, uses correspondence courses with group support for education on Agriculture and rural development. Tanzania has run Radio Campaigns, using both conventional extension methods and mass media with the aim of raising agricultural productivity.

In formal education, three approaches to distance education have been distinct. The first was to provide education outside school, usually by means of correspondence courses, for individual students working at home. The second was to use similar materials for groups of students in study centres, offering something like a school, but at reduced costs. The third was to use distance-teaching methods within conventional schools in order to raise their quality. The first model was the mainstay of the British and South African correspondence colleges, which dominated distance education in Africa until education ministries and universities moved into the field. Perraton (1983) reports that in two of the countries surveyed, fewer students had sat for the examinations after five years of study and up to three-quarters of the students had stopped studying completely. A lot of factors are responsible for motivation of students and for their success: libraries and access centres, group work, contact lessons, vacation classes, learning how to learn, and systematic ongoing support through print, telephone technology, and other affordable and available means. Perraton (1983) observes that for many learners working alone in many parts of the African continent these conditions do not apply. Dhanajaran (1997) says "Even as we near the end of the century, some 500 million people have not made their first telephone call". Access to technology is an issue that Africa still has to grapple with. Ex-Minister of Broadcasts and Telecommunication, Jay Naidoo, campaigned for access to telecommunications in Africa as he travelled from Cape to Agulhas in early 1999.

Quoting Frances Caincross's "Death of Distance", Dhanarajan (1998), in his address to the SABC Broadcast Conference, cited that in some African nations like Sierra Leone, Uganda and Zimbabwe, "the number of people has been growing faster than the number

of telephone lines" (International Telecommunications Union Report to UNESCO, 1996). The writer has also suggested that South Africa, more than any country, has been leading the rest of the Commonwealth in the discussion of a nation-wide policy framework that acknowledges learning through life and learning for life as an integral part of national development. Other suggestions made by the writer were that pathways be created in association with the formal sector of education that will enable free mobility of learners from one educational experience to the next. "Credits are not just earned through studies mediated by broadcasting agencies", he warned.

Providing professional competencies in design, delivery management, and accreditation of media or technology-driven learning opportunities is one area that stands out as priority area for a properly functioning system, already being engaged in by the *Commonwealth of Learning*, whose function is to create and widen access to opportunities for learning by promoting co-operation between universities, colleges, and other educational institutions throughout the Commonwealth, making use of the potential offered by distance education and by the application of communication technologies to education (1998:35).

The background to the formation of the *Commonwealth of Learning*, which saw the experience from Australia and New Zealand called upon in setting up some of the government teaching institutions in the 1960's and 1970's, is captured by Harry, John and Keegan (1993). The paragraph below is a brief summary of the record by the authors.

An African Association for Distance Learning was set up in 1973. An International African Distance Education Services (INADES) formation has found common ground and is no longer confined to Francophone Africa. The Commonwealth Fund Technical

Co-operation provided course writers who produced materials jointly for use in Botswana and Lesotho. More recently the fund has been involved with the South West People's Organisation (SWAPO), the African National Congress (ANC) and the Pan African Congress (PAC), in establishing the Namibian Extension Unit, now repatriated, and the South African Extension Unit based in Tanzania. Commonwealth interest in and support of distance education remains. That interest, led two years ago to establishment by Heads of Government of The Commonwealth of Learning. The history of distance education has seen the formation of the South African Institute of Distance Education in South Africa.

Perraton(1983) also observes that the British Open University, established in 1969, is now the second largest university (after the Federal University of London). Its merits are seen in the production of one fifth of the country's graduates for one ninth of the cost. Its students are proud of the quality of its educational materials. Thus where that university has led the way, some twenty others have followed in India, Pakistan, Thailand, Indonesia, Spain, and Venezuela- but not in Africa. He has also observed that South African correspondence colleges have also dominated the distance education scene in Africa. Dhanajaran, president of the Commonwealth of Learning in Vancouver, Canada, in a high-powered address to the first South African Broadcast Education Conference acknowledged that in the case of formal education the capacity to reach millions through interactive media may not be there as yet. However, the achievements

of the Open Schools in India, the Correspondence School of New Zealand, the Open Universities of Pakistan, the United Kingdom, and the University of South Africa, have demonstrated that which is possible.

Dhanajaran (1998) also acknowledged that the capacity to use the old and the new technologies to educate “almost every human being on earth’ is already there. The Secretary for The Commonwealth of Learning has also discovered over the last thirty years the many ways to reach learners at a distance. He observed,

...there is the political willingness on the part of our leaders to make education the central pillar of the global agenda. But there are some barriers and challenges. No doubt you will address the challenges.

18.4. Emerging Open Learning and Distance Education Models in South Africa

The South African scenario has been relatively quiet for some time, with the dominance of UNISA as champion and leader in distance education in the country. The onset of VISTA University came much later and for a different reason, with the extension of distance education to the black urban areas to assist disadvantaged blacks needing higher education. The onset of the South African Institute for Distance Education, and subsequently the formation of the Electronic Media in Education forum in 1995 changed the scenario somewhat, as innovations that were highlighted at the 1998 SABC Educational Broadcast Conference began to surface and be published. The individual universities also began to look at their own models of distance education. An example is the telematic system at Potchefstroom University.

The **Ulwazi** experimental radio education project of 1995 has resulted from decisions made at the joint discussions between South African Institute for Distance Education (SAIDE) and the Electronic Media in Education Forum. Other projects continue to develop. And at this stage one may refer to these as only experimental. The present education system allows for partnerships between educators and the private sector in provision of education and training. To this end, Chaane (1999), a highly dedicated Chief Executive Officer of the Shoma Foundation, says: “we believe that the private sector has considerable resources and skills that can be harnessed to benefit our education system- and that we can implement these using the partnership approach with the many stakeholders in the education sector”(Glennie:1999). The Shoma Foundation is a distance education in-service training initiative designed to meet the training needs of educators who want to know more about outcomes-based education and implementing the new education curriculum. The project draws on the skills of M-Web, Orbicom, Multichoice and M-Net. A lot can be achieved through the foundation, which also offers computer literacy skills to educators. The training of educators in technologies was isolated as useful for a model that would benefit ABET learner targets in this study.

The University of South Africa, a pioneer in distance education in South Africa, visits many foreign universities on a regular basis to compare syllabuses and curricula, according to Professor Piet Nel, Dean of the Faculty of Economic and Management Sciences at the university. Over the past four years UNISA’s Faculty of Commerce has carried out intensive research to establish the relevance and usefulness of its courses and this has resulted in a new B.Com degree in Banking and a new BBA degree suitable for

students who need a broad training for business and government sectors. The new tuition model with half-yearly registrations is a result of their ongoing research into the needs of distance education learners (Glennie, Sunday Times:13th June,1999). The university's faculty of arts is now offering more than fifty subjects up to doctoral level, with three sub-faculties, namely, languages, cultural sciences and social sciences. The present study has drawn courage from the foundations laid by UNISA in the field of distance education.

Most companies whose needs are Communication Techniques, Assertiveness Training and Presentation Skills are now seeking communication training, according to Rissen-Harrisberg, quoted in a recent article by Welch and Mays in the Sunday Times13th June, 1999. She points out that South Africa's education system has suffered a deficit in the teaching of business communication and life skills. "We were often taught to be obedient rather than assertive", she says. Above are but few examples cited to illustrate the moves in various sectors of the South African society to embark on flexible and open learning, and the trends in various sectors of our education system, influenced by the private sector needs.

With more than 1000 computers the Telkom Foundation has put into schools around the country now linked an on-line, Telkom is providing an electronic window to the world for children who previously may have had access to only a handful of books (Glennie, Sunday Times ReadRight supplement, October 10th 1999: 1). The R8 million Telkom 1000 Internet Initiative, which will provide a valuable network for teachers in often far-

flung rural communities, is just one of the projects funded by Telkom, the article reports. Such an initiative, and many others of its kind, are an indicator that the foundation for distance education through technologies (*e-learning*) is unfolding in the new South Africa. Rural North-West needs the type of leadership that can challenge Telkom and other companies to assist the less privileged to benefit from such programmes. The University of North-West, challenged to lead in partnerships such as these, is already showing signs that it can be a hub of activity in technology leadership, hence the study, which also touched on problems related to large-scale projects that may not be sustainable in the long run. It was concluded that in order to develop and sustain a workable model of mediated distance education, the University of North-West would only operate as partner to the state, the community, the technology and telecommunications experts, as well as the business sector.

Several other initiatives all around the country indicate that the movement towards aggressive intervention in the education of the masses, which also aims at improving the culture of learning, is alive and extremely virile in South Africa. Among these are:

18.4.1. "The Educator Express", by Kagiso Educational Television.

Kagiso Educational Television, an independent production company that aims to develop high quality television and video materials to help South Africa's educational needs, runs the programmes. Cachalia (1998) says the company has been running since 1997 and that "Educator Express" is a programme which provides educators with a home where each

week they could tune in to a programme designed specially for them, giving them the skills and information to assist them in their professional lives.

18.4.2. Africa Growth Network (AGN)

AGN has had the challenge to deliver a Master of Business Administration degree for Potchefstroom University using the latest electronic technology available, incorporating video, text and the computer in a collaborative distance-learning environment. The MBA was developed to incorporate a distance learning approach using electronic media as a form of delivery. Types of delivery methods include pre-recorded video distributed via VHS cassettes or on CD-ROM, study material in paper format or in electronic format on the computer, and live lectures via AGN's broadcast satellite network to remote campuses around the country. The Master of Business Administration (MBA) students, on their requirements and learning style can choose the type of media they wish to use. AGN's responsibility to the project was overall project management, instructional design, the production of video material, the satellite broadcast, the desktop publishing of the learning workbook, providing and hosting a distance learning, platforms that can be accessed by students spread across the country. The learning model ensures the multi-media student can access and receive specific information when required after having installed software from the CD-ROM. The process is logically organised with graphically illustrated icons, which makes it easy to understand (Welch and May:1999).

It consists of the following stages:

18.4.2.1. "What to do next"

18.4.2.1.1. After the student has read an introduction, the video icon would indicate a video clip, which needs to be viewed. Once activated, the clip would be viewed on the PC screen.

18.4.2.1.2. The next icon could be linked to the multiple-choice self-evaluation, which would be evaluated by the computer.

18.4.2.1.3. The students would also be referred to an electronic library for additional information.

18.4.2.1.4. At a specific time point, the student could also be requested to submit an assignment, which can be sent to the university for evaluation. The student would also have to attend to a live interactive broadcast lecture at one of the remote campuses and have the opportunity to communicate with the lecturer and experts in the subject directly via telephone and fax. Interaction between the students and lecturers can take place 24 hours a day through an electronic discussion forum, where any issues can be addressed or comments made. The focus of the learning model is on collaboration, where the student is able to access information electronically in an environment in which he or she never feels isolated from his or her studies. The end-user can contact other users, lecturers, and administration or technical support directly through e-mail or fax. In this specific situation the student is responsible for his or her own desk. The lecturer and administration staff is obliged to respond to study-related matters within 24 hours. So far great interest has been shown in the multi-media part of the MBA, especially in remote rural areas of South Africa, with over 300 students choosing this option.

18.5. Centre for Technology and Distance Education in South Africa

Naidoo (1998) of the Centre for Technology and Distance Education South Africa notes that the department has, in its vision, the provision of quality education and training within a system of life-long and open learning and that the vision is framed along the following principles:

- providing access to quality education
- a commitment to developing the full potential of South Africa's people for their active participation in all processes of a democratic society.
- redressing the imbalances of the past
- implementing learner-centred and outcomes-based approaches to education and training
- enabling all people to value, have access and to succeed in life-long education and training.
- developing a problem -solving and creative environment in which new technologies are harnessed to produce knowledge, products and services.
- integrate technologies into the strategies that promote growth and development.

“we are aware that technology will not solve all our problems. It is but one key component in delivering a quality life-long learning education and training system”, he says.

18.6. The Multichoice Multimedia Education Project (MMEP)

The experiment by the Multichoice Investment Holdings group that includes Multichoice, Orbicom and M-Web, identified the need to make a unique delivery mechanism for the provision of relevant educational programmes to the people of Southern Africa using

both Internet and satellite technologies. The Multichoice Multimedia Education Project has a vision to provide Southern African teachers with equal access to the relevant quality education, thus contributing to the economic and social success and upliftment of the region as a whole.

In order to assess the desirability and viability of the project, Morgan Educational Technologies was commissioned to conduct a feasibility study and business plan. As part of the feasibility study, a macro environment scan and a detailed market survey were conducted. The market survey covered the following spectrum of influential opinion leaders (Brown, Pike, and Lilford :1998).

- political and social leaders
- leaders in education
- community leaders and community organisations
- business leaders.

The macro environment scan highlighted the education crisis faced by South Africa, particularly in the areas of continuous professional development of teachers and in teacher training, and meeting the requirements of the Department of Education's Curriculum 2005.

The areas of most need were Eastern Cape, Kwa-Zulu Natal and the Northern Province. The market survey revealed that 53% of the respondents ranked education as the top priority facing the country; the survey also indicates that there is an overwhelming support for education to be delivered via a combination of technologies.

The MHI group sees this as a collaborative project in which it will work with other partners, which include the national and provincial education departments, the teacher organisations, a consortium of universities and NGO's and the SABC. The group is now into the implementation phase of the project, which involves establishing the team

- researching educational projects
- identifying pilot projects
- working on the technological aspects
- workshopping with other partners

Projects like these are huge experiments, which can survive with funding, sustained partnerships, and the continuous interaction between all involved.

18.7. The Internet Revolution: Cornflower Primary and Tafelsig Secondary Schools

Chaane (1998) reports that the Internet is the next revolution. She says:

Just like the steam train changed travel, or the telephone changed communication, the Internet is changing the way we live and exist. It is therefore critical that our communities become Internet literate as soon as possible. The Internet won't wait, it is upon us and it is the easiest thing to operate. All we need to do is click the mouse and be able to read (1998:78).

M-Web is therefore engaged in a project in Cornflower Primary School and Tafelsig Secondary School in Cape Town, both based in crime-ridden Mitchell's Plain on the Cape Flats. The schools have been chosen because of the passionate community involvement and dedication of the teaching staff. M-Web is based in Cape Town and has started these projects in this city. They will roll out similar projects throughout the country in the future. As far as the MIH group of companies' distance learning via

satellite initiative goes, M-Web's involvement in the provision of Internet connectivity and e-mail is critical to ensure fast response time to curriculum-related issues between students and teachers. SAIDE is studying these projects. Welch and Mays (2001) observed that SAIDE is also interested in the Fort Hare model described below.

18.8. The Fort Hare Model

The Fort Hare distance education Bachelor of Primary Education is offered to practising primary schoolteachers who already have some professional qualification, but who would like to improve their classroom teaching and obtain a degree. It is an eight-semester programme, each semester consisting two courses -core education studies, and the learning areas of Maths, Science and Technology and language. Each course consists of a number of modules (*imithamo*). Each *umthamo* (single module) has its own booklet, which represents 40 hours of notional learning time. Of these, 40 hours is spent in face-to-face discussion on three Saturday mornings and the other 37 hours are spent in individual self-study and classroom application built around a key activity (requiring at least 10 hours to complete). Thus poorly prepared teachers spreading across notoriously under-resourced province receive quality education in a number of different ways.

18.9. The Adult Education Model at the University of North-West

The University of North-West started adult education training in 1992, when the Faculty of Education introduced courses for adult educators based on regional needs. Field educators of adults have needed proper qualifications for several years in the North West Province's historically disadvantaged areas, according to the Adult Education Report of

1998. The adult education curriculum was then developed to accommodate graduate learners in the B.Ed. Honours Adult Education programmes, with the following areas: Principles and Areas of Adult Education, Basic Research Methods and Report Writing in Education, and Adult Education and Gender in South Africa, Training and Manpower Development, teaching Methods and Techniques, Planning and Administration, Economics of Adult Education, Continuing Education, Adult Education and National Development. The Master of Education course in Adult Education is by Dissertation. There is also the Diploma in Adult Education and the Advanced Certificate in Education (Adult Education), with the following fundamental learning: Principles and Practice of Adult Education, Introduction to Theories of Adult Education, Introduction to Research in Adult Education, Informal and non-formal Education, Planning and Administration of Adult Education, Continuing Education, Economics of Community Development, Adult Education and National Development, Research Project in Adult Education.

The model that has been evolving from 1992 is moving in the direction towards the deployment of qualified adult educators in the adult learning centres, something hitherto unknown, and perhaps even resisted within the ranks of ABET at provincial level in the North-West. The deployment of trained ABET educators within the learning sites of rural North-West can be achieved only when there is collaboration between the university and the Provincial Department of Education in the North-West. At present there seems to be a gap, although some hope has been raised because of a new partnership that has developed between the UNW and the Provincial Department of Education, which promises the provision for e-learning at the UNW (Rantlha: 2002). The present study can only benefit from such a development, if the university and the department of education

can accommodate the struggling out-of-school youth in the province. Completion of grade 12 and entry into fully-fledged university studies need to be facilitated in alternative and innovative ways. Attempts have actually been made to upgrade matriculation results of learners at the UNW, with the Faculty of Science and Technology and the Institute of Education in the forefront. However, a fully-fledged distance education programme with technology-enhanced systems has not been tried. At most the UNW has seen the Winter School Programme for matriculation candidates, the full-time subject matriculation programme for Maths and Science, and the ABET programme for Maths, Science and Commerce, using experienced educators in the respective problem subjects. All these classes have been contact classes. This obviously leaves behind a lot of other aspiring young learners from the remote rural areas and other disadvantaged localities.

The literature shows a whole lot of innovative modes of providing distance education to address specific needs of specific education targets. The use of the Internet has revolutionised education at a distance, and has made access much easier for those who can afford or access the technology . The idea of partnerships in the assistance of rural learners could be assessed in order to find out if strategies could be put in place to make Internet access an ongoing reality for the rural poor. The "franchise agreements" alluded to in the 1999 UNW Strategic Plan are relevant for such discussions.

However, the next problem is that of technophobia, a psychological disease found among both educators and learners alike. In the face of all the technologies available, some educators have still found the traditional face-to-face methods more appealing and more

comfortable. One could relate these to resistance to change, but the problem may be more complex. Advocacy and ongoing training of educators in the use of technologies is indicated in this study.

An extensive research on distance education models in South Africa, Africa, and the international world indicates that South Africa is indeed two worlds in one: a third world country in parts, and a first world country in others. The present challenge is to change the state of affairs in order to strike a balance. Politically, the technological infrastructure through RDP projects has become visible, with electrification of villages, supply of clean running water and the telecommunication networks according to Molefe(1999), Premier of North-West, in his parliamentary speech on the state of the province. Of special note is the new Electronic Communications and Transactions Bill from the Ministry of Communications.

19. The Role of the Electronic Communications and Transactions Bill

An interesting facet of the above bill is included here to emphasise the importance of access and its implications for the national **e-strategy** still to be implemented, according to legislation.

19.1. Universal Access

The Bill states that in respect to universal access, the national **e-strategy** must outline strategies and programmes to: -

- a. provide Internet connectivity to disadvantaged communities.
- b. encourage the private sector to initiate schemes to provide universal access.
- c. foster the adoption and use of new technologies for attaining universal access and

- d. stimulate public awareness, understanding and acceptance of the benefits of Internet connectivity and electronic transacting.

19.2. Previously disadvantaged persons and communities

The Minister, in developing the **national e-strategy**, must provide for ways of maximising the benefits of electronic transactions to historically disadvantaged persons and communities, including but not limited to

- a. making facilities and infrastructure available or accessible to such persons and communities to enable the marketing and sale of their goods or services by way of electronic transactions:
- b. providing or securing support services for such facilities and infrastructure to assist with the efficient execution of electronic transactions and
- c. ensure efficient use and management of domain name space ;and
- d. ensure that the national interest of the Republic is not compromised through the use of electronic communications.

It is encouraging that, at the time of this study, the bill was firmly in place and that the question of access was provided for in the bill. This means that previously disadvantaged people are being considered in all forms of legislation in the Republic of South Africa.

The current research and formulation strategy conducted by the Presidential National Commission on Information Society and Development (PNC on ISAD), established in 2001, is targeted mainly towards the youth and their empowerment in the field of ICT's.

This is another one of the encouraging moves by government in general and by the

president of South Africa in particular. According to Shope-Mafole (2003:36), Chairperson of the Presidential National Commission on Information Society and Development, “the other areas that have received special attention are the rural communities, and in particular the schools”.

Chapter 3

Research Design

1. Methodology

1.1. Background

The research study was aimed at finding a suitable technology-based distance education model that would benefit the grade 12 ABET learners from disadvantaged rural and informal settlements in the North-West Province. The study was both qualitative and quantitative. The qualitative part derived from opinion given under the heading “general comments” at the bottom of each sub-section of the two survey questionnaires. The latter were administered to the two main target audiences of this research, namely the disadvantaged grade 12 ABET learners on one hand, and the responding university community, and the rest of the stakeholders relevant to this research, who were interviewed as individuals or in focus groups. While individual interviews, focus-group interviews, and content analysis featured largely in this study, the latter method, namely content analysis, was used in order to validate the findings of the two main questionnaires surveys. Wimmer and Dominick (1993: 157) define content analysis as “ a method of studying and analysing communication in a systematic, objective, and quantitative manner for the purpose of measuring variables.” Content analysis is a research approach which is frequently used in media-related studies.

The study was done in three main phases. The first phase of the study sought to enquire about the needs and solutions to the needs of the rural-based out-of-school youth and the employed adult ABET learners from those critical North-West areas around the periphery

of Mafikeng. These geographical areas were selected for practical reasons of feasibility and expense. The main objective of the study was to establish the model for a technology-enhanced distance education intervention for out-of-school youth in the North-West Province, with the University of North-West as the main facilitator of the envisaged technology-enhanced learning. The study was both qualitative and quantitative.

The second phase of the study involved a rigorous inquiry to establish whether the University of North-West has the capacity to offer technology-based distance education to the ABET targets of the study, and whether in that university -ABET project could be supported. It was also necessary to formulate an appropriate and cost-effective model for the technology-based distance education project, which would suit both the university and the target learner. General comments from this section were also subjected to content analysis.

The last phase of the study was an attempt to get other relevant information from several relevant stakeholders. Starting from those in the offices of education and academics (Office of the M.E.C., ABET Office, Office of the Superintendent, the office of Information, Communication and Technology), professionals from the University of North-West Faculty of Education, professionals from the Information, Communication and Technology Commission in the President's Office, the researcher also gathered information through interviews from engineers and technology experts with hands-on

experience in the field of education technology projects. Sentech, Multichoice and Telkom were represented in this study through individual interviews.

The study ended up with individual and focus group interviews with all those relevant stakeholders in the villages, among whom were educators, school managers, day school learners, members of school governing bodies, ordinary community members, representatives of the tribal authority and local government officials. This latter exercise was embarked upon in order to validate the findings of the first two parts of the survey. This collective information from individual and focus-group interviews assisted the researcher to validate the findings of the two questionnaire surveys which addressed ABET problems and preferences, as well as the university community's capacity and opinion, towards the formulation of what would be the most appropriate model for technology-enhanced mediation of ABET through distance education.

The findings of the last phase of the survey confirmed the need to establish a concrete partnership project model at the University of North-West in order to drive the technology-enhanced distance education programme in the North-West Province.

1.2.Methods and Instruments

The questionnaire survey and content analysis were methods mostly used in this study, which was divided into three main parts (see appendix A, appendix B, and appendix C) In the first phase of the study, use was made of samples from a population of ABET learners from selected school districts, according to geographical location. Each participating centre had to have the same characteristics as those of the rest of the rural

learners throughout the North-West Province. A typical ABET centre starts its operations after the normal school day, around 15h30. The attendants are young matric dropouts or employed matric learners who have been studying privately (see Appendix A). The geographical area of the study is mentioned below.

1.2.1. Sampling of ABET learners

1.2.1.1. Level 1 of sampling (geographical sample selection of participants)

For this part of the study, the researcher identified and selected adult education centres in Lehurutshe to represent the eastern part of the province. Ramatlabama and Signall Hill to represent the northern part of the province, while Koi-koi, Motsoseng, and Mmabatho represent the central part of the province. Atamelang and Makgobistad represent the Western part of the province and, lastly, Bodibe and Lichtenburg to represent the southern part of the province. Ten participants were selected from each of these five cluster areas. All of the fifty participants represented the entire province. The characteristics of the selected ABET centres were confirmed to be the same by the ABET provincial office. The selected adult centre in Mmabatho (C.N. Lekalake Adult Centre) hosted learners from the outlying rural villages (Motlhabeng, Lekaleng, Molelwane, etc.), some of them young grade 12 repeaters, and others, employed adult learners. The reason for selecting centres from these geographical areas was because of their ease of access and the time and costs that would be saved. Therefore from a population of all ABET centres in the North-West, ten centres were selected and grouped into five clusters.

1.2.1.2. Level 2 of Sampling : sampling within the ABET learning sites

At this level, from each of the five geographical areas selected and visited by the researcher, a sample of ten participants per village cluster was selected through the simple random sampling technique. This means, for example, that the Mmabatho geographical area consisted of ten (10) representative participants from the village cluster comprising Lokaleng, Motlhabeng, Molelwane, to ensure that each of these smaller villages would be represented. A total sample of fifty (50) subjects participated at this level. All of these were ABET grade 12 learners from the village centre cluster cited above. This meant that ten subjects were selected from each village cluster, making a total of 50 participants for this phase of the survey.

The adult centre in Mmabatho, which is regarded as urban, hosted learners from the outlying rural villages of Motlhabeng, Molelwane, Lokaleng and Ramosadi. All of them were young repeaters. These centres were selected because they were easy to access and would save time and costs for the researcher.

The final sample of 25 ABET learners was used in the focus group interview to validate the findings from the general survey (see Appendix C). The subjects were selected from C.N. Lekalake Adult Centre.

1.2.3. Instrumentation: Survey on ABET learners (see Appendix A)

The questionnaire was used as the main instrument in this survey. The questionnaire was divided into sub-sections for ease of administration. The first subsection of the questionnaire made provision for demographic data, and the remaining four questions

consisted of a set each of sub-questions totaling 40 straight questions and four generalized questions relating to comment, and therefore each of the four sections of the questionnaire ended with an optional general comments section. These general comments could be written in a separate sheet or space provided (See Appendix A), or at the back of the questionnaire sheet. Content analysis was used for interpretation of the general comments provided by the subjects.

1.3.The second phase of the main study

This phase of the study concentrated on the general opinion of the university community within the University of North-West central campus regarding the plight of ABET learners and a sustainable and feasible learning model which the university could manage and afford (see Appendix B for questions from this study).

1.3.1. Instrumentation for phase 2 of study: the University Community Survey

A survey instrument made of four main questionnaires with 70 sub-questions was used in this part of the study. At the end of each sub-questionnaire was a general comment section. Where space was not provided for general comments, the subjects were given an extra sheet of paper for general comments, or they could use the back of the questionnaire sheet. General comments were subjected to content analysis. This survey questionnaire is found in Appendix B.

1.3.2. General Comments from the second phase of survey

The general comments from the second phase of the questionnaire were treated as part of the questionnaire survey, and also as part of the process to validate the findings of the

study, and therefore content analysis was also used to analyse the general comments emanating from this study (see Appendix B, p.128, par. 12 for report on general comments from the university community).

1.4. Third phase of survey: Direct Individual and Focus-group Interviews

Part one of the third phase of the survey sought the opinion of the officials, professionals and academics who are directly and indirectly affected by adult education and training, media education and planning, electronic education, curriculum and ABET planning as well as the telecommunications business. Their diverse opinion was sought in order to validate the findings of the other target groups investigated (see Appendix C for report on individual and focus-group interviews).

Part two of the third phase of the survey entailed several supplementary interviews (individual and focus group) which were embarked upon in order to validate the findings of the whole survey. The participants here were mainly the village communities and schools, as well as traditional leadership and community education structures within the villages (see step 3 under procedures below).

2. Procedures

2.1. Step 1

ABET learners from five clusters of rural and disadvantaged (village and squatter camp) geographical areas in the North-South-East-West periphery around Mafikeng, including Mmabatho, each representing the matching geographical regions of the North West Province were selected randomly to participate in the survey(see Appendix A). The total

number of each village cluster was ten (10) and the total number of participants was fifty (50). Each learner was given a copy of the questionnaire consisting of 40 specific items for rating, and 4 items for general comment. Subjects only had to agree or disagree with the items (Yes/No responses) by ticking in the relevant box. Among all the instructions given were that subjects should NOT write their names on the answer sheets, since their responses had to be anonymous. They were strongly urged to use separate sheets supplied for any general comments where applicable. The four general comment items would be subjected to content analysis and used also to validate the general findings of the survey.

2.2. Step 2

The second step of the study sought to obtain the opinion of the academic body within the university on the necessity for and nature of the intervention needed for out-of-school ABET grade 12 learners from the rural schools. One survey questionnaire was administered to two different random samples within the university community during separate times, namely September 2002 and June 2003 respectively (see Appendix B, table 5a and table 5b, pp. 120-121). The questionnaire content was exactly the same for the two periods of the study. Respondents were randomly selected from among faculty members across the campus. Both students and lecturers participated in this university community survey. Each questionnaire had blank leaflets in which subjects could write down their general comments. Subjects did not have to write their names down. All members of the university's Academic Development Centre and the Institute of Education, now functioning, no more as an independent entity, but under the Faculty of Education, were included in the two surveys. The second survey was used to check the

reliability of the responses after a time-lapse period that separated the era of the old University of North West from the emerging “North-West University”.

It was important to identify any possible differences in opinion among the subjects across the two periods, based on the developments from the merger process between Potchefstroom University and the University of North-West.

2.3. Step 3

The third step of the survey sought to ensure reliability and validity of the results of the two steps above. This part of the survey employed individual and focus-group interviews conducted among various professionals, academics, and experts within the adult education sector, information, communication and technology, the education profession, the university academics, and the diverse village communities (see Appendix C, Part 2).

The structured interview schedule prepared for the professionals was supplemented with variations of focus-group interview questions and “vox pop” approaches done at the local shopping mall to conclude the study (see Appendix C). Sub-question 6 was followed up with a few direct interview questions on a selected sample comprising the ten members of the Academic Development Centre and the Institute of Education at the University of North-West (See Appendix B, Part 2, p. 129).

2.4.Final part of survey: establishing the model for technology-based distance education

In this part of the survey, all identified model parameters (e.g. use of print, plus video plus contact lessons) were assessed. The identified model parameters mentioned in Appendix A and those mentioned in Appendix B were compared. The data were then accepted as the final parameters for the technology-based distance education model which would agree with the universally identified model within this study (see Appendix D). Analysis of the data for this study appears in Chapter 4 below.

Chapter 4

Presentation and Analysis of Data

1. Background

This presentation of data has been done under three main sections and two sub-sections. The first section deals with ABET learners who are the target group for this research. The study set out to find out and establish their needs, their preferences, their choices and their recommendations regarding an enabling ABET learning climate, as well as their preferred alternative delivery modes towards the solution of the problems that beset their night schools (see Appendix A).

The second section deals with the university community comprising both academic professionals and students in the campus. The study sought to solicit their concerted opinion in the entire matter regarding the utilisation of a technology-enhanced model that would address the plight of the disadvantaged rural and out-of-school youth who seemed not to benefit from the existing ABET centres in the disadvantaged areas of the North West Province (see Appendix B). Two questionnaires were administered twice, using two separate samples with only one common element, the inclusion of the Academic Development Centre and The Institute of Education as whole groups within the sample (see Appendix B). This study compared the results for time-lapse effects.

The third section of the data analysis deals with reliability and validity of the results of the two parts above. It involves interviews conducted among various members of the department of education. These included office bearers in the ICT (Information,

Communication and Technology) sector, those within the ABET services office, and those inside the Office of the Provincial MEC (Member of Executive Council) for Education. A structured interview schedule was prepared and was administered uniformly amongst all the selected senior members (see Appendix C). Two of the interviews referred to above were conducted at two identified conferences where the researcher had an appointment with two senior persons in the North-West Department of Education.

In this third section, the technical experts and engineers from the private technology sector which normally provide technology for education are also interviewed, and the remaining stakeholders, the village school managers, village communities, and all other members of the village communities were interviewed either individually or in the focus group sessions (Appendix C). The responses from the interviews assisted the researcher to validate the research findings of the main survey which addressed the ABET targets and the university community.

In the fourth and last section of the data analysis, the findings from the main surveys (ABET learners and University community) were grouped and compared (see Appendices A and B) to find the level of correlation between the general responses in either of the two surveys. The full report is set out under par. 13.5. of Chapter 4.

2. SECTION 1 OF REPORT: ABET LEARNER TARGETS

2.1.Question 1

Situational analysis of the rural and disadvantaged ABET learners (see appendix A)

What are the common problems experienced by the target learners (dropout grade 12 learners, employed adult learners) identified for this study? Out-of-school youth of school-going age and employed adult learners have unique problems in their own geographical areas. These need to be spelt out, so that a solution is found.

The questionnaire was administered to all those learners who attend ABET schools offering grade 12. The learning sites are primary and secondary schools in villages and informal settlement areas.

TABLE 1: Common Problems

NO	SUB-QUESTION	YES	YES%	NO	NO%
1.	Dark nights?	50	100%	-	-
2.	Far-away schools?	50	100%	-	-
3.	No educators?	-	-	50	100%
4.	Poor attendance by educators?	10	20%	40	80%
5.	Classrooms not electrified?	40	80%	10	20%
6.	Poor buildings?	35	70%	15	30%
7.	No books?	38	76%	12	24%
8.	Poor chalkboards?	39	78%	11	22%
9.	Dangerous roads to schools ?	46	82%	4	8%
10.	Lack of transport?	50	100%	-	-

11.Any other? See report below.

Responses were divided into categories:

Category 1: Problems of Access (YES responses)

- | | | |
|------|----------------------------|------|
| i. | Dark nights | 100% |
| ii. | Far-away schools | 100% |
| iii. | Lack of transport | 100% |
| iv. | Dangerous roads to schools | 82% |

This category demonstrates a high risk factor in night school attendance

Category 2: Infrastructure Problems (YES responses)

- | | | | |
|------|----------------------------|---|-----|
| i. | Classrooms not electrified | = | 80% |
| ii. | Poor buildings | = | 70% |
| iii. | Poor chalkboards | = | 78% |

This category demonstrates that the condition of classrooms is generally very poor.

Category 3: Problem of Resources (YES responses)

- | | | | |
|----|----------|---|-----|
| i. | No books | = | 76% |
|----|----------|---|-----|

Lack of books is an acute problem

Category 4: Educator problem (YES responses)

- | | | | |
|------|--------------------------|---|-----|
| ii. | No educators | = | 0% |
| iii. | Poor educator attendance | = | 20% |

Educators do not pose a problem. Their attendance is reflected as regular in this category.

It can be concluded from the above that the problems for most rural and disadvantaged *ABET schools centre around far-away schools, poor transport, dangerous roads, dark nights, non-electrified schools, and no provision of books.*

2.2.Question 2: Is any intervention needed in order to solve the ABET situation?

Question: Is the number of problems experienced by out-of-school youth and adult learners attending “night school” in the rural areas of the North West Province significant enough to warrant intervention and extensive assistance to these historically disadvantaged learners?

2.2.1. Need for Intervention

What is the situation in your area?

TABLE 2: Need for intervention (See Appendix A)

1	Questions	YES	YES%	NO	NO%
1	High failure rate	50	100%	0	
2	High drop-out rates	50	100%	0	-
3	Shortage of tutors?	30	60%	20	40%
4	Many cannot access classes?	50	100%	0	-
5	Many need assistance with grade 12 classes?	50	100%	0	-
6	There is no help for matric drop-outs in day – schools	40	80%	10	20%
7	The rate of learner absenteeism is very high	50	100%	0	-
8	Adult educators are often absent	10	20%	40	80%
9	There are no teaching aids	50	100%	0	-
10	Classroom windows are broken	40	80%	10	20%
11	Any other comments?	See report below			

The responses were divided into the following categories:

i. Category 1 of responses: The learner situation (YES responses)

- 1) high failure rates =100%
- 2) high drop-out rates =100%
- 3) high rate of absenteeism =100%

The high failure rates, the high drop-out rate, and the high rate of absenteeism suggested by all respondents indicates the extent of the problem in the rural ABET schools.

ii. Category 2 of responses: The need for assistance (YES responses)

- 4) no assistance to matric dropouts = 80% (in the day school)
- 5) many learners need assistance =100% (individual assistance)

There was a strong indication that most learners needed assistance, and that most of them did not get that assistance in any form.

iii. Category 3 of responses: Infrastructure and resources (YES responses)

The situation was also characterised by

- 6) broken classroom windows =80%
- 7) no teaching aids =100%

iv. Category 4 of responses: The adult educator situation (YES responses)

- 8) shortage of tutors =60%
- 9) Adult educators often absent =20%

(compare with category 4 of table 1 in p. 111):

- i. No educators =0% , meaning that educators are provided
- ii. Poor educator attendance = 20%, meaning that tutors are not always absent)

The above indicates that the few adult educators provided for the rural and disadvantaged learners, are fairly regular in attendance at their centres.

**The adult educator situation here reflects shortage of educators, and possible overstretching of the few available educators in the ABET centres.*

v. Category 5: Access: Lessons

10. It was agreed (100% of responses) that many other learners out there could not access the classes scheduled for them by the department of education. The reasons for this lack of access are found under general comments.

vi. Category 6: General comments

The comments below indicate the extent of the problem, and the level of the need for intervention.

Comments: The following common comments were registered from the survey

- i. No funding, no transport, no lights, no support.
- ii. ABET tutors cannot be accessed easily outside the ABET hours.
- iii. ABET tutors cannot give extra classes other than scheduled classes.
- iv. Adult learners cannot access the tutors except by attending classes.
- v. Adult tutors work till late and are already tired before the classes.

- vi. Government must run fulltime schools for ABET matric dropouts.
- vii. Existing schools are too far for night -time learners.
- viii. Broken windows and doors discouraging in winter.
- ix. Learners attend when they wish.
- x. Learners are absent for many days .
- xi. There is no order in night schools.
- xii. School governing bodies don't care.
- xiii. Schools are not supervised by government officials.
- xiv. Night schools are examination revision schools only, that's the problem.

Indications are that the ABET night school is not properly organised, that structurally and physically, it is not conducive to effective learning, that absenteeism is rife among the learners, that there is a shortage of tutors, that the same tutors who teach during the day teach in night classes, and are thus overstretched, that the total situation is that of apathy, lack of discipline, and total disarray. All these factors indicate the need for intervention.

2.2.2. Conclusion

It can be concluded from the responses above that the number of problems experienced by learners in historically disadvantaged schools is very high and therefore warrants some concerted effort at intervention.

3.1.Question 3

What made you enter the ABET class for matriculation examination preparation?

TABLE 3: Reasons for attendance of the ABET class (see appendix A)

NO	SUBQUESTIONS	YES	YES%	NO	NO%
1.	No space for repeaters	50	100%	-	-
2.	Tired of strict school rules	4	8%	46	82%
3.	Too old to attend day school	2	4%	48	96%
4.	Employed	2	4%	48	96%
5.	Are you a grade 12 repeater?	48	96%	2	4%
6.	Are you in the ABET class for the first time this year?	45	90%	5	10%
7.	Do you attend your ABET classes during the day?	---	-	50	100%
8.	Do your night school teachers also teach day classes?	50	100%	-	-
9.	Did you have problems with your subjects last year?	50	100%	-	-
10.	Are you happy with the quality of ABET teaching?	35	70%	15	30%
11.	Are you happier in the ABET school than at day school?	-	-	50	100%
12.	Do you experience many problems in the ABET school?	50	100%	-	-
13.	Do you have better teachers at ABET school?	20	40%	30	60%
14.	Do you attend ABET classes at night?	50	100%	-	-
15.	Is there something else you want to tell about your problems in your ABET centre? If YES, then use a separate sheet provided to tell your story.	See report below			

3.1.1. Responses: The responses were again divided into categories

3.1.1.1. Category 1: Problems experienced by ABET grade 12 learners

- i. All respondents are repeaters =100%
- ii. No space for repeaters =100%
- iii. Night school teachers also teach during day =100%
- iv. Had problems last year =100%
- v. Experience many problems at night school =100%
- vi. Learners not happy at night school =100%
- vii. None attend classes during the day =100%
- viii. All of the night school teachers teach daytime classes =100%
- ix. Some learners are not in the ABET class for the first time =10%

All respondents are repeaters. Learners who fail their grade 12 are excluded from the day school. ABET night school teachers teach also during the day (an indication that they may not be so bright in the afternoon-evening class).

Learners in this category had subject problems in the previous year, and indeed experienced many problems at the ABET night school.

3.1.1.2. Category 2: Barriers to day school attendance (School Rules, Age, Employment, Classroom Space)

School rules:	82% do not have a problem with school rules.
Age:	96% say they are not too old to attend day classes.
Employment:	96% are NOT employed .
Classroom Space:	100% say there is no space for repeaters.

**The reasons for ABET night school entry are significantly that the day school simply has no space for repeaters. The learners report that they are not tired of school rules and not too old to attend day school, but that the night school was totally different from the well-controlled day school from which they dropped out.*

It was clear that these learners could not hope to get much out of their ABET night schooling after being excluded from day schools.

Lack of access is another outstanding problem here, especially for young dropouts.

3..2. General comments from ABET learners

Some of the responses to the last sub-question (15) were:

- i. Nobody respects the ABET school
- ii. ABET learners are regarded as rejects
- iii. The teachers at the day school brag to learners at ABET, telling them they wasted their time not learning
- iv. "I feel like an outcast at ABET school"

Question 4: The Distance Education Model.

4.1. If the university were to offer home study (distance education) classes to ABET grade 12 classes in your district/learning site, would you... (tick YES or NO next to your preference). Responses are reflected below:

TABLE 4: Distance Learning Needs :(see Appendix A)

No.	SUBQUESTIONS	YES	YES%	NO	NO%
1.	Have lecture notes delivered to your (ABET)school?	-	-	50	100%
2,	Fetch notes from the university?	50	100%	-	-
3.	Have everything done by the university?	50	100%	-	-
4.	Ask ABET tutors to work with the university?	50	100%	-	-
5.	Is your community centre safe for delivery of notes?	-	-	50	100%
6.	Any other comment you want to make ? A separate page is provided for your comments.	See report below			

4.2. Interpretation of subjects' responses

The responses were divided into the following categories:

4.2.1. Category 1: Delivery of lecture notes (NO)

Learners do not want notes delivered at

- i. ABET centre = 100%
- ii. Community centre = 100%

4.2.2. Category 2: University responsible for notes (YES)

- i. Fetch notes from university =100%
- ii. Everything done by university =100%
- iii. ABET tutors to work with university =100%

It was significantly demonstrated that the learner respondents do not have any confidence in their ABET schools and would not have their lecture notes delivered there. They would rather have notes tailored by a university authority for them, or let their tutors co-operate with the university in assisting them. They definitely have no confidence in their community ABET centre, and look forward to the university for assistance.

4.2.3. Category 3: General responses (question 6)

On questions specifically relating to the university, the learners prefer to be assisted by and supervised by the University of North West. Some of the comments are listed below

- i. We want notes printed at university.
- ii. The university is our last resort.
- iii. The university is better.
- iv. Lecturers are more qualified to help us.
- v. The university has money.
- vi. Government bursaries can be used at university.
- vii. I better pay the university.

Some of the respondents above are already in the programme run by the university, but would need to study there, where conditions are better, chalkboards not faded, and lighting guaranteed, and NOT at the local learning sites where there were “ugly classrooms”, few of which are lit. Subjects felt the financial burden of paying for classes they sometimes did not afford attending because of high transport fees and very adverse weather conditions (cold dark, dangerous winter nights).

4.2.4. The report above was also followed up with a focus group interview of the ABET learners from the C.N. Lekalake adult center in Mmabatho near Mafikeng , which is overseen by the University. These learners from ABET feel that the university is the one most qualified to intervene in their case. Most felt the educators in night schools were there only to “teach and nothing else” and therefore did not care much whether they failed or succeeded. The day school has been described as a place where educators worked very hard, especially because of the incentives they stand to get for giving their schools a 100% pass. The night schools do not have incentives for work done, except the

normal wage. Technology-enhanced learning included the use of laboratories for science experiments, which the university had.

The day school cannot afford to give attention to repeaters during the day, and this is why repeaters end up at night school, and why some day schools have their own night classes for their own repeaters.

Lack of competition and discipline in ABET was another problem the learners encountered. There was also no prefect system, no student body and no parent body to look after them. “Nobody cares”, not even the parents. Those who were not dropouts (employed adult learners) were too few, only four in the whole sample. Their problem of the employed adult learners was attending classes with young dropouts and ill-disciplined repeaters who are often not very serious or are too disillusioned to learn. They needed notes and they had to rely on every possible way of getting involved as learners. “The younger ones”, it was reported, did not respect the older learners.

4. 3. SECTION 2 OF REPORT

4.3.1. Subjects : University of North West Community (see Appendix B)

The questionnaire for this section was directed at the university community within the Mmabatho campus of the University of North West. The sample for the survey included all of the members of the ADC and all of the members of the Institute of Education. The two samples for this part of the survey were each N=50 and each sample consisted of a random selection of members of the university community in the academic sector, a random selection of the student sector representing all the faculties, the Academic Development sector and the Institute of Education, as well as some members of the

supplementary staff. The ADC and the Institute to participated in both time phases of the survey.

4.3.2. Procedure

Taken over two distinct periods during the research, namely the Sept.2002 and April 2003, the survey involved two distinct randomly selected samples of fifty each. The two lots of responses from the survey samples were compared for time-lapse effects in the critical questions pertaining to the need for distance learning, technology, and contact lessons. See Tables 5a. and 5b. below.

(Sample A : N=50 ; Sample B : N=50)

Question 1: If the university were to assist the less disadvantaged matric learners with distance education classes, would you readily opt for.....?

TABLE 5a: (End 2002 survey): University preferences: model parameters. (See Appendix B)

NUMBER	SUB-QUESTIONS	YES	YES%	NO	NO%
1	Training of local educators ?	40	80%	10	20%
2	Tutorials sent to learners?	40	80%	10	20%
3	Classes held at campus during vacation?	50	100%	0	-
4	Video lessons for learners?	40	80%	10	20%
5	Tutorial assistance by final year students	30	60%	20	40%
6	Recorded audiocassette lessons	25	50%	25	50%
7	Distance Learning packaged notes	50	100%	0	-
8	Radio lessons	40	80%	10	20%
9	Saturday Classes for the project	50	100%	0	-
10	Computer-based lessons	50	100%	0	-

4.3.3. Responses

4.3.3.1.Highest rated parameters (towards a model for technology-based distance education)

- i. classes held at campus during vacation =100%
- ii. distance learning packaged notes =100%
- iii. Saturday class =100%
- iv. computer-based lessons =100%

- | | | |
|-------|-----------------------------|------|
| v. | training of local educators | =80% |
| vi. | tutorials sent to learners | =80% |
| vii. | video lessons | =80% |
| viii. | radio lessons | =80% |

4.3.3.2. Lowest rated model parameters

- | | | |
|-----|------------------------|------|
| ix. | Assistance by students | =60% |
| x. | Use of audiocassettes | =50% |

The results demonstrated that subjects favoured the model supported by distance learning notes, vacation /Saturday(contact) classes at campus, and computer assisted learning (100% in each case) and video education(80%). The model was supported by the high responses in support of distance education tutorials sent to learners, training of distance educators, video lessons and radio lessons (80% in each case). The use of students and audiocassettes have the lowest ratings.

It can be concluded from the above that respondents favoured the model, which supports the following parameters: computer-based learning, distance education, supplemented with contact classes (Saturdays/vacations), video education.

In order to confirm the responses to this question over time, a follow-up survey consisting of 50 new subjects was pursued in the first half of 2003.

4.3.4. Question 2a (Question 1B: see Appendix B)

If the University of North West was to assist the less disadvantaged ABET matric learners with distance education classes, would you readily opt for ...(?)

TABLE 5b (mid 2003 survey):University preferences (model parameters):
see Appendix B

NUMBER	SUB-QUESTIONS	YES	YES%	NO	NO%
1	Training of local educators ?	50	100%	10	20%
2	Tutorials sent to learners?	40	80%	10	20%
3	Classes held at campus during vacation?	50	100%	0	-
4	Video lessons for learners?	40	80%	10	20%
5	Tutorial assistance by final year students	30	60%	20	40%
6	Recorded audiocassette lessons	35	70%	15	30%
7	Distance Learning packaged notes	50	100%	0	-
8	Radio lessons	40	80%	10	20%
9	Saturday Classes for the project	45	90%	5	10%
10	Computer-based lessons	50	100%	10	-

4.3.5. Responses:

4.3.5.1. Highest rated parameters :

- i. Training of distance educators =100%
- ii. Computer-based =100%
- iii. Vacation classes =100%
- iv. Distance learning packaged notes =100%
- v. Saturday classes = 90%
- vi. tutorial notes to learners = 80%
- vii. video lessons = 80%
- viii. radio lessons = 80%

4.3.5.2. Lowest rated parameters

- i. Recorded audio lessons = 70%
- ii. tutorial assistance by final year students = 60%

The ratings are more or less the same. However, audio-lessons and use of students are rated slightly higher in the second survey.

4.3.6. Conclusion

The bias is still in favour of the technology-enhanced distance and e-learning (ICT 's comprising radio, television, video, and computers) model with suggestions for learner contact, and training of providers.

There was no significant difference in the responses of the two surveys.

The audiocassette and the student tutor were also rated lowest on both surveys, although the ratings were slightly higher in the second survey.

4.3.7. Question 2a (Question 1B: See Appendix B)

If you were to make a combination of five things from the list above, which items would you choose and why?

4.3.7.1. Findings : The following ratings featured the favourite combinations:

- i. Distance education packaged tutorial notes + training in distance education + computer-based lessons+ video +vacation class =96%*
- ii. Distance education notes + video+ Saturday class+ computer-based lessons+ training of providers =90%*

From above ratings it is clear that the model most selected consists of

- a. printed tutorial notes**
- b. computer-based lessons**
- c. use of video**
- d. training of providers**
- e. contact classes**

Above model parameters have been found to be consistently favoured in the main questionnaire and subsequent sub-questionnaires.

5. Question 2a (continued:See Appendix B).

5.1. How ready is the university to accept this social responsibility and how much capacity has it to offer assistance to those underprivileged youth?

The questionnaire of twenty items (see appendix C below) was aimed at getting the general picture regarding the capacity and readiness of the university using several parameters.

TABLE 6 (See Appendix B)

No.	Sub question	YES	YES%	NO	N0%
1.	University has capacity	50	100%	0	-
2.	Can lecturers be assisted with design?	50	100%	0	-
3.	Would lecturers come on Saturday?	50	100%	0	-
4.	Would distribution of notes cause problems?	45	90%	5	10%
5.	Can the university produce audiotapes for learners?	20	40%	30	60%
6.	Can the university organize teleconferencing lessons?	35	70%	15	30%
7.	Can graduate and third year students be used?	20	40%	15	30%
8.	Can local schools be persuaded to help distribute notes?	46	92%	4	8%
9.	Can lecture materials be distributed via post offices?	15	30%	35	70%
10.	Are village multipurpose centers suitable?	10	20%	40	80%
11.	Can television lessons be used?	30	60%	20	40%
12.	Can technology partners be found?	48	96%	2	4%
13.	Has the project the potential to succeed?	50	100%	0	-
14.	Do you believe that local schools can support the project	46	60%	4	8%
15.	Can existing ABET providers support the project?	50	100%	0	-
16.	Can local business be persuaded to help?	35	100%	15	30%
17.	Do you believe that government would co-operate ?	50	100%	0	-
18.	Do you think the villages would be supportive?	30	60%	20	40%
19.	Can the SRC be persuaded?	50	100%	0	-
20.	Can the Provincial Youth Commission be persuaded to support?	50	100%	0	-

5.2. Responses

- 1) University has capacity =100%
- 2) Lecturers can be assisted to design =100%
- 3) Lecturers would come on Saturday =100%
- 4) The project has the potential to succeed =100%
- 5) Existing ABET providers can support the project model =100%
- 6) The SRC can support =100%
- 7) The Provincial Youth Commission can be supported =100%

7 (seven) parameters out of 20 got a rating of 100% in the entire questionnaire

- | | |
|---|------|
| 8) Technology partners can be found | =96% |
| 9) Local schools can be persuaded to distribute notes | =92% |
| 10) Local schools can support the project | =92% |

Three (3) parameters out of the remaining 13 got a rating averaging 94%

- | | |
|---------------------------------|------|
| 11) Teleconferencing | =70% |
| 12) Support from local business | =70% |
| 13) Television | =60% |
| 14) Village support | =60% |

The average support recorded in above parameters is 65%

The final Arithmetic Mean of **86.5 %** for 18 out of 20 parameters has been recorded.

The remaining two parameters recorded an Arithmetic Mean of **25%**

i.e. Post Offices and Multipurpose Centres were rated the lowest

(**30% and 20%** respectively).

Villagers do not have confidence in their Post Offices and multipurpose centres.

The idea of student tutors is supported by only 40% of the sample.

It was clear from the responses above that the subjects are highly convinced about the capacity of the University of North-West to run the project model for technology-based distance education. The subjects all agree that lecturers would find no problem giving lectures on Saturdays, or even being trained in the distance education course design methods.

The project has the potential to succeed, and the government, the Student Representative Council, and the Provincial Youth Commission would support it. All of the above are rated by **100%** of the subjects as possible and feasible.

At another level (96%)it was also clear that schools would support the project, act as distribution centres, while the search for technology-providers would not be a problem(92%).

Television was supported by only 60% of the respondents, while teleconferencing was supported by 70% of the subjects. Tutoring by students is not highly favoured (30%).

6.Question 2b : Most cost-effective technologies (see Appendix B)

What would be the most effective and practical technology to supplement printed distance education notes?

The ratings were as follows:

- | | | |
|------|--|-----|
| i. | Video..... | 80% |
| ii. | Audio..... | 60% |
| iii. | e-learning through web-based computer lessons..... | 96% |
| iv. | a combination of the three..... | 84% |

Any other suggestions or comments?

The computer lesson (web-based learning, Internet) rated the highest at 96% and among the most prominent reasons cited were interactivity, ease of retrieval, repetitive, offers direct tutoring, immediate feedback, today's technology, everybody is using it, it is user-friendly.

The next highest rating was for the combinations of the three technologies, namely video, audiocassettes, and web-based computer lessons (84%), followed by video (80%) and then the audiocassette (60%).

7. Question 2c:e-learning technologies (see Appendix B)

What are your thoughts regarding the use of electronic learning through computers for distance education of rural and other disadvantaged matric learners?

The highest rated responses were

1. Highly recommended =100%
2. Can be supported =100%
3. Project long overdue =96%
4. Can be sponsored =75%

8. Question 3 (see appendix B)

8.1. What relevant, most suitable and most acceptable and cost-effective technologies and means can the university utilize for the development of a technology-based system of distance education for these identified youth?

If the UNW were to assist, which technology-enhanced distance education classes would you opt for?

TABLE 7: Technologies for distance education (see Appendix B)

No	Sub-question	YES	YES%	NO	NO%
1.	Training of DE educators	50	100%	0	-
2.	Correspondence lessons from UNW	30	60%	20	40
3.	Tutorial notes designed by the UNW	40	80%	10	20
4.	Vacation Winter and Summer classes	50	100%	0	-
5.	Video lessons for ABET	40	80%	10	20
6.	Visiting lecturers from UNW to local centres	40	80%	10	20
7.	Graduate students to tutor the ABET learners	10	20%	40	80
8.	Recorded audiocassette lessons prepared at campus	30	20%	20	40
9.	Full-time Saturday classes	50	100%	0	-
10.	Distance learning packaged notes for ABET learners	40	80%	10	20
11.	Peer tutoring facilitated by UNW	20	40%	30	60
12.	Collaboration with Institute/Department of Education	50	100%	0	-
13.	Joint Venture with experienced high school ABET educators	50	100%	0	-
15.	Computer-based lessons/collaboration with computer company.	40	100%	0	20
16.	Utilisation of SABC television lessons?	40	80%	10	20
	Any other comment?	See report below			

8.2. Responses:

8.2.1. Training of educators for distance education, vacation and Saturday classes, collaborative ventures with Department of Education and experienced ABET educators, computer-based lessons and print tutorial notes were rated at 100%.

8.2.2. Printed tutorial notes, video lessons, visits to local centres, distance education notes to learners, and SABC television lessons were rated at 80%.

8.2.3. The model that emerges from above is that one which combines the strategies of **contact lessons** with **electronic learning** for ABET learners, supports and promotes **collaborative ventures**, as well as advocates for **training** of distance education providers.

9. Question 4: Readiness of the Education Structures

9.1. How ready are the schools and the education fraternity, including the department of education and other relevant structures /partnerships) to support the move to establish technology-supported learning and dissemination centres for ABET learners in the disadvantaged and rural areas of the North-West Province.

The following sub-questions were answered

TABLE 8: See Appendix B

No.	Sub-question	YES	YES%	NO	NO %
1.	Newly-built schools can be equipped for the project	50	100%	0	-
2.	The department of education can support the move	50	100%	0	-
3.	The SABC can support the move	50	100%	0	-
4.	The "Liberty Life" company can support the move	50	100%	0	-
5.	Local Schools can support the move	50	100%	0	-
6.	The UNW has resources for the technology-based model/ can support the model	43	86%	7	14%
7.	Any technology company can support the model	50	100%	0	-
8.	The vacation school model can be supported by all	50	100%	0	-
9.	Some NGO's can support the move	50	100%	0	-

9.2. The envisaged area of support

This area got a very high level of confirmation and affirmation from the subjects
(100% in all areas above).

Sub-question 6 was followed up with a few direct interview questions on the sample comprising subjects from the Academic Development Centre and the Faculty of Education (N=10).

Appendix B/Part 2

- 1) Would the University of North-West support the move? =Yes (100%)
- 2) Would the University have the resources? =Yes (70%)
- 3) Would the University need to be assisted? =Yes (100%)

Above confirms that the University of North-West is willing to be assisted in the move to establish a technology-based distance education centre for the ABET learners from historically disadvantaged areas of the North-West Province.

10. Any other ideas or comments?

Among other ideas cited to support the technology-based distance education idea for out-of-school and adult grade 12 ABET learners in the rural and other disadvantaged schools in the North West Province were the following:

- i. The collaboration between all providers of telecommunications(e.g. Cell C, Telkom, MTN, Vodacom). One interviewee mentioned the use of these names for separate rooms fitted with computers donated by these providers.
- ii. Collaboration with Banks were suggested as potential sponsors. The subject particularly isolated the Standard Bank because the university uses it for its financial services.

- iii. Training in distance education methods was said to be actually long overdue in this institution.
- iv. The problem of security and vandalism were voiced as needing priority attention before setting up systems.
- v. Computer literacy for all was emphasised by most respondents

11. Conclusion:

The general conclusion is that a custom-made, cost-effective, collaborative model of technology-enhanced distance education to address the problems of the out-of-school youth and adult learners in the rural and disadvantaged areas of the North-West Province can be evolved at the University of North-West and is supported by both the University community and the ABET learners.

What remained to be established was whether the project concept was supported from other sectors like the public and private sectors cited at the beginning of this survey, viz. the professional sector (Department of Education in the North-West-officials and ABET centre administrators) technicians, engineers and technology project administrators, etc.

12. SECTION 3 OF THE REPORT :Field Interviews(see Appendix C)

12.1. Direct Interviews :professionals and academics

The third part of the survey sought to ensure reliability and validity of the results of the two parts above. This part of the survey employed interviews conducted among various members of the department of education. These included office bearers in the

Information, Communication and Technology sector, those within the ABET services office, and those inside the Office of the Provincial MEC for Education. The researcher conducted two of the interviews referred to above at two education and ICT conferences, where she interviewed the most senior members in the planning and ICT sectors respectively. A structured interview schedule was prepared for this part of the survey, and was administered uniformly amongst all the members. For the sake of anonymity the responses will be dubbed Response A, Response B. etc. (See Appendix C)

12. 2. Interview Questions (see Appendix C)

- i. Is there any new development in the establishment of technology-based learning for rural learners in the North-West Province?
- ii. Can ABET learners in grade 12 benefit from this development in any way?
- iii. Does the Department of Education in the Province have any joint projects with the University of North-West?
- iv. Is distance education one of the plans?
- v. What does the future hold for collaboration in e-learning between the university and the Provincial Department?
- vi. Any other comments from you on this issue?

12.3. The Findings :

i. Response A: N=1

1. Yes, a lot but things are in the pipeline at the moment, School NET is highly enthusiastic.
2. Yes, but not so soon. ABET happens in most remote rural areas where the infrastructure is still lacking.

1. Yes, there is one in the pipeline. An announcement will soon be made. The University of North-West is closest to the Department of Education.
2. No. But educators can be trained this way only partly.
5. A lot. after all *e-learning* is the mode of the future.

12.4. Summary of interview discussion: (Respondent A)

A lot is already happening in the area of ICT in anticipation of the global moves to digitize education, and the North-West Province is already planning for year 2010 along the lines to ensure connectivity, training, and the full alignment of the department towards using technologies to assist the disadvantaged learners and teachers.

However, this is a lot of work, which is very costly. However, Microsoft has already given the schools free software for use with their computers, which will be used to train the teachers. There are many problems however, but the models already in place elsewhere, e.g. Gauteng and Western Cape, are encouraging. We need to learn from some of them.

ii. Response B : N=1

1. Yes, yes, indeed. Teachers are already being trained in the use of computers.
2. Yes, but later, much later. ABET is a difficult area.
3. No joint projects. The department has had several presentations from the University and other stakeholders.
4. Distance education is overtaken by the Internet, therefore they must function together.
5. No, distance education is not in our plan.

6. Collaboration in *e-learning* is a good idea, but the department has yet to solve too many problems.

12. 5. Summary of interview discussion (Respondent B)

Many people make presentations to the department, but the department is overburdened with plans. Look at schoolNET. It is not making headway. This is frustrating. There are too many problems in the rural areas. Things will take some time.

12.6. Responses C : Technology experts within government departments: N=2

“The Department of Education has no choice because technology is the future tool for teaching at schools, whether you like it or not. This is a global world, and South Africa cannot isolate herself. Ja, the process will be slow, but connectivity and collaboration has to involve the university. Else how do you train all those many teachers? ...of course you need to train them before you train the learners.”

“The department is too slow, I tell you, there are many simple ways to solve the problem. Satellite is cheap, because it can be shared and also be subsidized by commercial providers and users.”

The rest of the interview revealed that some people in the technical sector are surprised that the university has not started working together with the schools at all on projects to help the rural case.

12. 7. ABET Office

Sentiments from the ABET office were that the finances to effect change are not coming forth and that the Department has not yet outsourced services to external stakeholders. Things can happen only when there is money. “We are grappling with logistical problems

at present. Technology issues are necessary but finances are the problem". The university can actually help.

12.8. Other Stakeholders

12.8.1. Vox Pops : Sample size N= 10

Vox pop style interviews were done in the local shopping mall. **Vox pop** means *vox populi* (Skinner and Von Essen, 1982) which means people's voices. It is a technique used by journalists to find out about public opinion relating to any matter. Ten persons participated in the *vox pop*. A single question was posed to professionals and business person, as well as some of the university students. The researcher mentioned video, computer and contact lesson combinations as delivery modes most favoured as supplementary to the print mode of distance education. The following question was posed to each participant:

Would you support the UNW technology-based distance education project to assist the masses of the grade 12 ABET learners from rural and disadvantaged schools?

The responses indicate that the project would be supported overwhelmingly.

12.8.2. Village support : Views of Villagers in Signal Hill : Sample size N=33

The researcher arranged to interview people after a ward meeting in Signal Hill. The small sample of villagers (33) formed a focus-group, which was asked to say whether they would support the project to assist with technology-based distance education for ABET learners. The technology system was spelt out in detail, and included all the technologies and delivery methods identified in this study. The general opinion was that

there was dire need for such a service by the university, which would assist ABET learners. Some of the highlights of the discussion were:

- 1) lack of access to day schools for second chance learners.
- 2) crime and weather problems at night.(already mentioned by the learners themselves)
- 3) problem of teenage pregnancies (“girls’ schooling must continue”).
- 4) Educators do not often turn up on Fridays, because learners do not even try to attend
- 5) Schools secured against thieves do not open up readily for night classes.

12.8.3. Village support : Views of Villagers in Bodibe :N=12

Above problems were confirmed in Bodibe and Motsoseng, where groups were gathered at the request of the researcher. The Bodibe group reported more crime problems and preferred the model that takes everything and everyone to the university for the sake of the ABET learners. They do not trust their own post office and schools, which are surrounded by barbed wire, because of the high level of vandalism in the area. They reported that at some stage the barbed wire fencing also got stolen, since the schools were located far from the electrified main road to Itsoseng. Bodibe was also identified as harbouring copper wire thieves. They support the technology-enhanced distance learning mode.

12.8.4. Village support : Views of villagers in Motsoseng. N=19

The Motsoseng group, which attends classes at a new high school, have as their problem the location of the school, which is outside the village, bordering a new township development, where it is very dark at night, and extremely dangerous, as construction

workers loiter around the place, and trenches dug because of the construction activity near the place are dangerous to cross at night. Because of vandalism, the schools resources are locked up very tightly at night and are not accessible to night learners. These include desks. The desks used by night school learners are very few, making them difficult to share, provided that the manager has manpower to carry desks back to the high security storeroom after classes. This is often not possible as most attendants are female. The nearest police station is very far away in Mmabatho. Female learners are particularly threatened, especially in summer. The distance education mode based on technology was also appraised by this group.

Above results indicate the general inclination of the research subjects towards the use of electronic learning for distance education learners, with the computer as the anchor mode of delivery to supplement the print notes the learners need so much. Therefore the utilisation of distance education and electronic learning methods is highly recommended by members of the focus-group.

13. SECTION 4 OF REPORT

13.1. The ABET learner requirements versus the University Community capacity

The results of the ABET learners survey were also superimposed on the results of the university community survey. It became clear that the ABET learners got interested in the system which would satisfy their learning needs by offering them distance print materials and electronic delivery systems coupled with contact lessons from time to time. The university community identified the model as highly desirable. The level of correlation was very high in several areas (See Appendix A and Appendix B). The need to have

distance education in print delivery mode, in e-learning systems, and through contact lessons was affirmed by both sides (ABET learners and the university community). The level of compatibility between the shortcomings in ABET schools, and the capacity at the University of North West, which has its own personal experience of years in dealing with learners from disadvantaged backgrounds, bodes well for the model that has emerged from the study, rendering it highly desirable at this stage. While the model is subject to scrutiny through other exhaustive means, several indicators point to its feasibility, possibility and utilisation capacity. Several comments from several stakeholders have affirmed the model of distance learning that has been explored in this survey. Some of the important comments have been isolated.

13. 2. Table 9: Comparison of responses from learners and UNW (par.3, Chap.3, p.109)

THE LEARNERS SAY	THE UNIVERSITY SAYS
<p>1. The buildings are poor, roads dangerous, schools far, windows broken, Winters severe, Nights dark, and general learning conditions poor, as there are no resources (faded chalkboards, locked –up cupboards, shortage of furnitures, etc.).</p>	<p>1. The UNW has the capacity to assist, especially during vacation schools with contact lessons. The UNW can offer better buildings with good lighting while learners reside at campus during the holidays. Staff can visit some villages (Saturdays, or have learners report at campus on Saturdays. They can offer the central lecture block at campus, which has adequate lighting and writing facilities. The UNW also has computer centres, but these are available only during vacation and Saturdays.</p>
<p>2. Educators are tired from day schooling; high levels of absenteeism among the learners, and lack of school resources in night schools are discouraging.</p>	<p>2. The UNW can work together with the night school educators during the vacation schools, and assist them with other resources to make their work lighter. It is possible to use them together with course designers for the writing of content materials for home study.</p>
<p>3. ABET schools do not have school-governing bodies and SRC's like day students. No one represents learners. They are de-motivated. There are no post-offices and multi-purpose halls are not suitable receiving points for notes or materials.</p>	<p>3. The university can offer print services so that ABET learners can study at home, but the village schools must provide centres where they can collect notes. The village community schools can collect, via learners and teachers materials and take them to homes. Learners have to work partners with the village community. Day learners can help</p>

<p>4. There is no access to electronic equipment at night schools. There is no video or audio materials. Only the written notes are available. Textbooks are few, learning hours are equally few, and night school learning periods are shorter.</p>	<p>4. During vacation schools, ample time can be used, watching video materials and the library facility. ABET learners can have access to the computer centres by arrangement, so that they are taught by trained staff on the use of the Internet for more information. All of this is expensive but funding sponsors can be found. Telkom is already funding certain projects of this nature. The Academic Development Centre in this campus can assist in finding business partners.</p>
<p>5. Fellow students are not useful for repeaters and adult learners. Only properly qualified people can help. Access to facilities like laboratories, libraries, and computer centres should make learning easier for AET learners.</p>	<p>5. We will train people especially for tutorial notes and technology/distance methods right here at campus. Your notes will be distributed to the schools in your villages and you can study at home, write tests at home, and send your assignments to the day schools, where we will collect them through school managers. The university has content experts, who can work with some night teachers. The facilities can be expanded.</p>
<p>6. How soon can we get technology-enhanced distance education?</p>	<p>6. This is possible next year. The university already has a learning plan in place, ABET learners can benefit from this</p>

14. General comments from across the survey

14.1. The ADC/Institute of Education : N=2

The following are some of the comments from the Academic Development Centre and the Institute of Education. Two top members were interviewed. The following is a **brief summary of some of the comments.**

- 1) The project can be sponsored. The virtual classroom is imminent in the campus.
- 2) The enrolment of the university can increase through this project.
- 3) Many other students would be upgraded in this (ABET) class.
- 4) The university would prepare its own future undergraduates this way.
- 5) The model is a good strategy for recruitment.
- 6) Video has become very cheap lately.
- 7) Audio rooms are necessary.
- 8) Teleconferencing can be effected.

14.2. The view of the Faculty of Education at the University of North West: N=2

Two top academics were interviewed. The academics in the Faculty of Education at the University of North West have observed that the Adult Education sector of the North West Department of Education uses unqualified adult educators for most of the time. Subject content matter may be relevant, but often adult or remedial education methods are not known. The university, in anticipation, is providing degrees and diplomas in Adult Education in order to pro-actively supply the nation with educators who have qualifications for Adult education (interview report). However, the Department of Education is utilising educators that are not actually qualified to offer ABET education to learners. Methods used for first time learners cannot be used with second and third time learners, hence the need for technological interventions of the nature suggested in this study. The Faculty of Education sees the whole issue as a challenge they must face.

14.3. The view of the independent engineer/technicians N=3

Three technical persons, two engineers and a former technology maintenance technician, both of whom have been involved in planning television transmission systems and working with educational television broadcasting teams, report that solutions for rural-based learners in the technology arena are many. The simple satellite system, which incorporates video, television, radio and the computer, can be used. Print support materials are necessary, they say, and these are pre-packaged to go with the electronic lessons. The computer terminals are necessary to ensure interactivity and individual learning and self-testing. The state is however looking into this area, and the satellite

systems may be used sooner than anticipated. The maintenance and support of technology-based systems is expensive. However, technologies are getting cheaper and more portable, and government can be assisted through private-public partnerships to wire the schools and to have the technologies working. They do indicate several other problems like vandalism, dwindling funds and lack of planning as endemic to the problem of technology-based learning that is done on a national scale. Their remarks are supported by lessons learnt from past projects on technology. It is known that the road to technological transformation is fraught with failures from several variables or a combination of factors. However, ownership of such projects by the village communities is crucial, and the culture of training for planning and security of equipment and resource centres has to be inculcated vigorously. Technophobia has been cited as the worst enemy of the South African educators who come from these rural and disadvantaged backgrounds. These educators must transform in order to change the learning landscape in their areas. Educators have to engage vigorously in media education and utilisation. Funding is often a serious impediment to sustainability. Communities must pay a small levy towards maintenance of equipment, and engage in fundraising for repairs and maintenance.

The interviews above, conducted in April 2003, were soon followed by the announcement of the launch of the Active Mindset Network, given to Ex-President Mandela as a present for his 85th birthday on July 18, 2003 (Sunday Times ReadRIGHT Supplement, July 27th, 2003, p.1). The programme uses the satellite dish, the decoder

and smartcard, television and Videocassette recorder. It is supplemented by NetActive Supplement published every two weeks in the Sunday Times for grades 10,11, and 12.

14.4. The view of the ABET educators

A few ABET educators were interviewed (N=5) and have complained bitterly about non-attendance at the night schools. The tutors in Mmabatho report that most of their learners are from surrounding villages. A few, all of whom did not get classroom space to repeat in the local schools, live as tenants in Mmabatho. The ABET school starts at 15h00 but some of them arrive an hour late and are not apologetic. The educators mention negative attitudes, but in some cases the learners appear tired after having walked some distance to the learning site. This means that they would save the money for the return journey home by taxi. It is not only poverty that is the problem among young high school dropouts entering the ABET school. Their background knowledge of concepts in content classes is equally disturbing. They cannot be placed in a special class, as there is no provision for such classes. All have failed matric and all do the same work at the same pace with every other student. The rural schools report scanty basic knowledge and a very weak foundation in all the subjects including the language medium of instruction. Lack of resources (books, notes, libraries etc.) compounds the problems of these learners. The educators are extremely challenged by the problems of these learners, their attendance and their performance. The dropout rate is equally high in the ABET centre. Some of them never make it to the examination. The educators agree that the condition of classrooms is bad. These are the same classrooms that house the day students, but in winter there is a difference between the day learner and the night learner. The latter must learn inside a cold room, which is sometimes half-lit (the lighting can be very poor also).

The suggested mode of delivery makes a lot of sense to the educator, provided that subject experts are used as resource persons and are trained in distance learning course design and in ABET methods, and that money is made available for ABET teaching as a specialized field. The ABET educators also say they need incentives like transport allowance, for example.

14.5. The view of the school managers

School managers (N=5) of day schools that housed ABET (five centres) were interviewed individually about their commitment towards assisting in the event of a technology-supported distance learning ABET programme as stated in this study. All of them did not mind having their schools used as dissemination centres for distance learning materials to the learners in ABET schools. A lot of them saw this as a positive step towards alleviating them of the burden of carrying the ABET schools in many ways. To them the ABET institution which already has resources and a new home in the university is a blessing for the high schools, which have the potential to benefit indirectly from the programme. Some secondary schools say they have actually engaged in assisting their own and other less fortunate other dropouts from neighbouring rural schools through ABET classes.

It was observed also in this study that some rural primary schools have educators who must still pass their matriculation, and that most of them did not attend the ABET classes, but rather enrolled with institutions like Intech and Damelin, which offer distance lessons for matriculants. The establishment of a technology-based distance education ABET class at the campus could also benefit these other learners if implemented. Finally it can be concluded that the emerging ABET model should not be understood to be the end of

the way provincial government schedules ABET classes, but rather a shift from the traditional to the flexible and open technology-enhanced distance learning model that will set the trend in the province, and ensure that the bulk of learners who wish to enter higher education are included in the system.

15. Conclusion

It can be concluded that all elements of the technology-based distance education system required for the target ABET learners are feasible, possible, and attainable.

There are people resources in place for something positive to happen for these disadvantaged learners, and the challenge is to get the university to take up its leadership role in order to lead the way forward. The foundations for a working system of technology-based intervention are known to educational technologists, systems and course designers. The latter are to be taken along, throughout all the stages of planning and implementation of the technology-based distance education model that will emerge as a result of this study.

It can also be concluded that any model in the direction of assisting, through a UNW-led community-based project, the underprivileged ABET learners in the North West Province, will be welcomed by the national department of education. The latter has put in place a National Curriculum Framework that supports “the use of different modes of learning” as a means to widen access to and participation in FET.

Open learning systems and an integrated approach to education and training, will thus enable learners to learn what they want, when they want, and in the form they want, so as to satisfy their cultural spiritual, career, personal, and

other developmental needs. Flexible open programmes, through distance education and resource-based learning, must be fully utilized and expanded, as a significant means to broadening access to FET (National Curriculum Framework for the FET band, 1998).

The Ministry of Education's open learning philosophy and programme-based approach to provision supports the technology-based model of distance education for underprivileged learners who must enter higher education fully prepared for their further education and training. The philosophy encourages institutional diversity, the use of multiple sites of learning, and the growth of virtual institutions. This means that learning can take place at the workplace, at community centres, and in learners' homes. "Some learners will use the Internet, and other technologies to access learning via a "web" or network of providers who might be located very far apart and who need have no formal, centralised organisation or structure" (Education White Paper 4, August, 1998, p.28).

Chapter 5

Description of model for technology-enhanced distance education in the North West Province.

1. Background

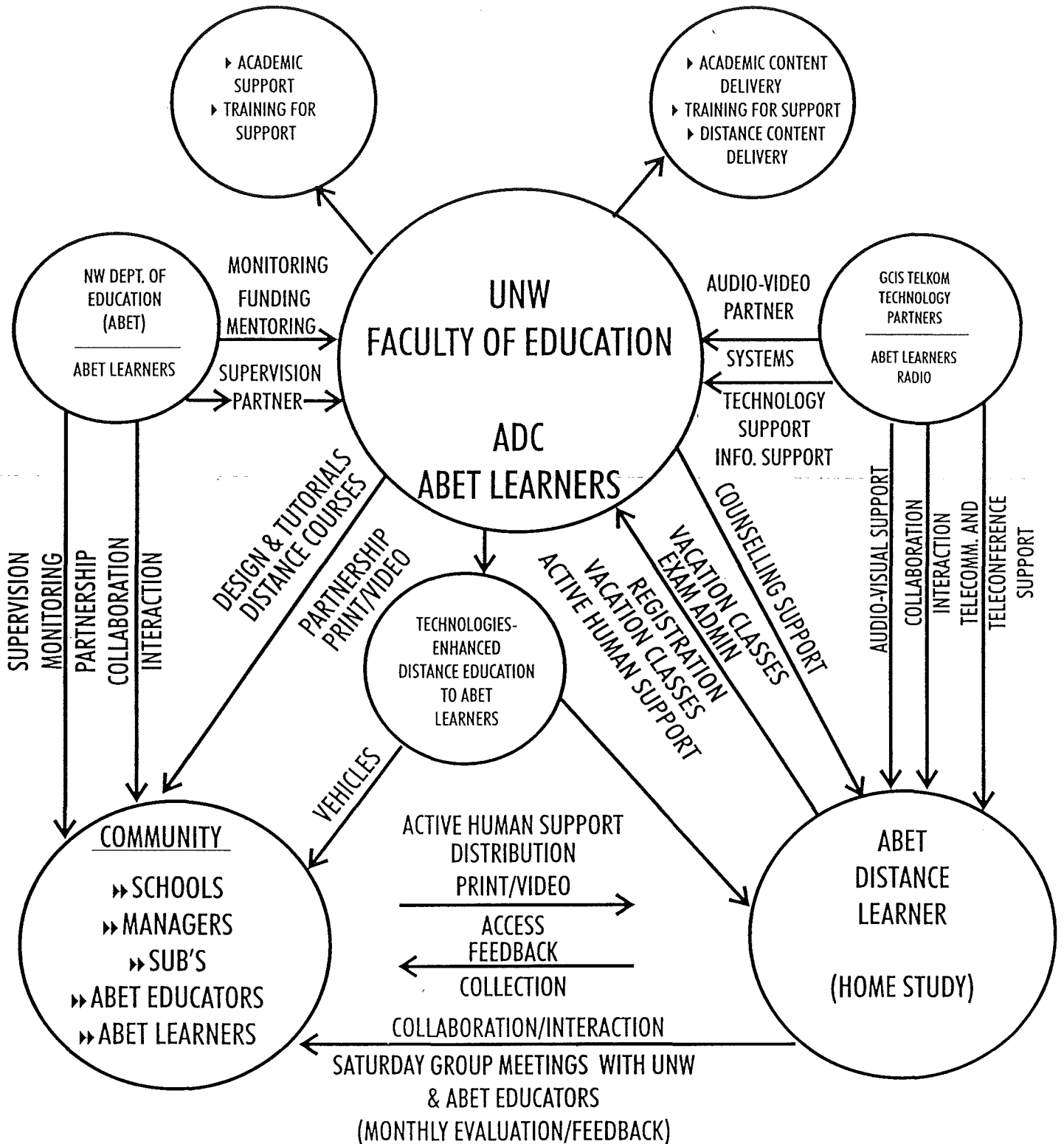
The present discussion focuses on the description of, and elaboration on several components of a model for technology-enhanced distance education for grade 12 ABET learners in the North West Province, which should be divided into five main operational centres in the region for ease of administration of the ABET learners. The fifth operational centre will be the University of North-West, which is also the main operational centre of the model. These components are the model participants, the model operations, the support model, the funding and sustainability model. However, the grade 12 ABET learners, the target learner in this study, is a client of the North-West Department of Education under the ABET Office of the provincial department.

1. 1. The Main Model

The main model for technology-enhanced distance learning is derived from the systems approach and is based on the following principles :

- i. the greater the degree of wholeness in the model, the more efficient the model.
- ii. the greater degree of systematisation, the more efficient the operation system.

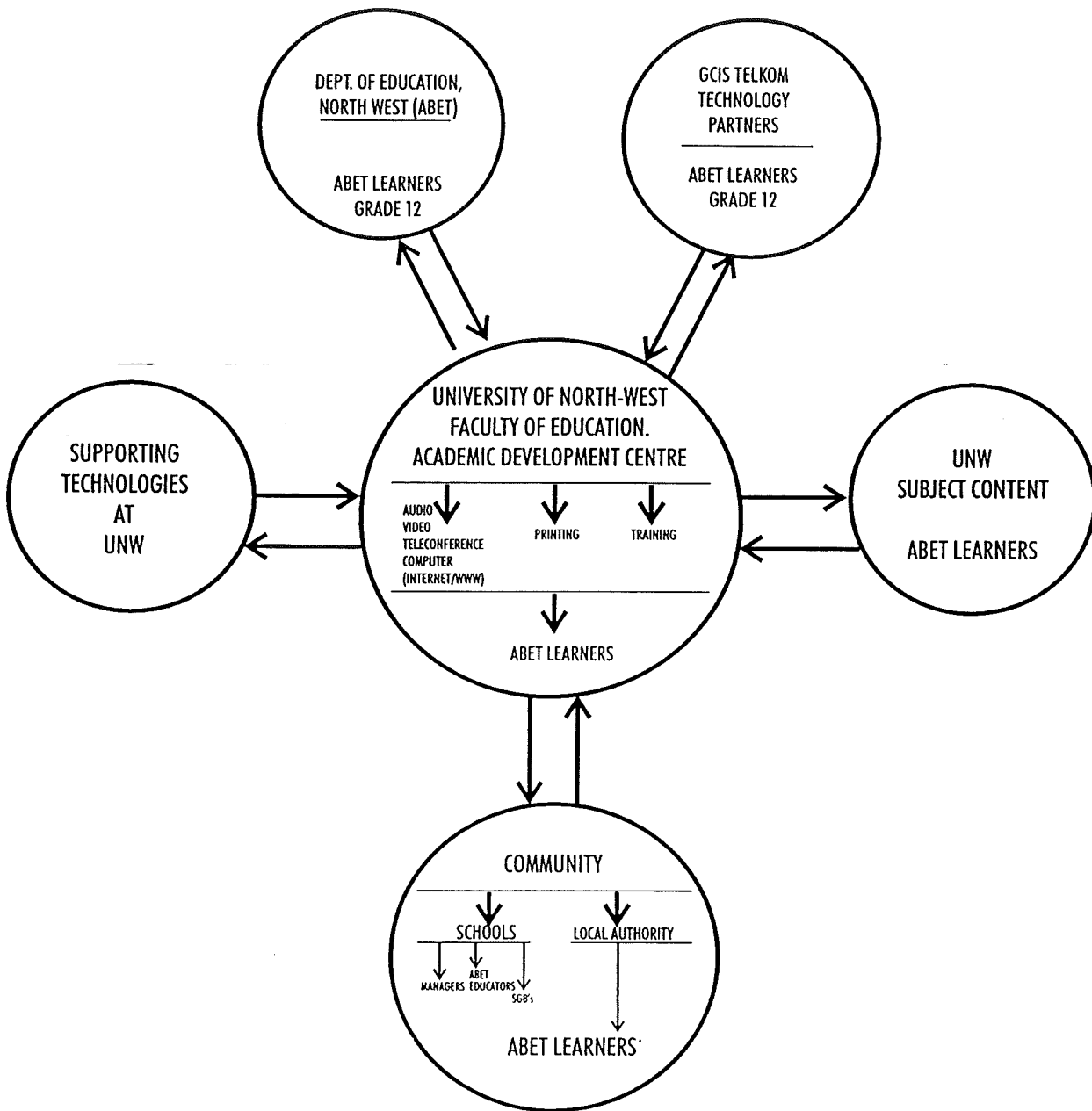
FIG. 1
 MODEL FOR TECHNOLOGY-ENHANCED ABET (GR.12) DISTANCE EDUCATION
 IN THE NORTH WEST PROVINCE



GLOSSARY OF ABBREVIATIONS

1. ABET = ADULT BASIC EDUCATION AND TRAINING
2. ADC = ACADEMIC DEVELOPMENT CENTRE
3. GCIS = GOVERNMENT COMMUNICATION & INFORMATION SERVICES
4. INFO = INFORMATION
5. SGB'S = SCHOOL GOVERNING BODIES
6. UNW = UNIVERSITY OF NORTH-WEST

FIG. 2: MODEL PARTICIPANTS



iii. the greater the degree of compatibility between system and environment, the more effective the system.

iv. the greater the degree of optimisation, the more effective the system(Garrison 1989).

Above principles refer to a whole model (see fig. 1, p. 151), with subsystems also reflecting wholeness, with signal paths or relationships that are very strong, high compatibility between the system and its beneficiaries, and correlation between the objectives of the system and its outcomes. For instance, ABET learners in other regions may not benefit from the use of computers for several reasons, but they may benefit from the audio and video delivery built into the system. However, remote learners will still benefit from human contact and radio delivery modes that supplement the print materials of correspondence. The uniqueness of the model outlined above is its flexibility and openness, in order that every ABET learner benefits from the model (see figures 1,2, and 3).

1.2.Model participants

1.2.1.The University of North-West

The university is the driver of the model for technology-enhanced distance education. This is where the course offerings are designed, commissioned for printing, and distributed to participating communities in the regions. The model itself is to be nurtured and assessed continuously at the university. The home of the model is the Faculty of Education, which is supported by the Academic Development Centre as the nerve centre of the critical model activities of course design, training for course design, distance education and technology support. However, the University of North-West is dealing

with ABET clients that belong to the North-West Department of Education, and is therefore positioned to work in collaboration with the latter (see fig. 1, fig. 2, pp.151,152 respectively).

1.2.2. The Faculty of Education

The Faculty of Education is the centre of academic activity in the UNW. It depends, to a very large extent, on its expertise for provision of the distance education programme as an addition to its adult academic programmes for undergraduate and graduate students. The distance education programme can also be offered to students who have specialised in Mathematics Education, Commerce Education and so on, so that a strong corps of distance educators begins to emerge.

The Faculty of Education must resuscitate the UNW's previously vibrant Academic Development Centre for provision of support for its many activities, operations and programmes, among which are student support, staff development and support, material support and provision of equipment and expertise in several areas, especially in the modern technologies of print layout, photography, graphic design and electronic technologies of video, audio, computer support and teleconferencing, among others, for purposes of managing the technology-enhanced grade 12 distance education model for ABET learners on behalf of the provincial department of education in the North West. Presently, the ADC has been almost dysfunctional, but it needs to function, since it is underutilised.

1.2.3. The North-West Department of Education

The department is accountable for the number of dropouts in the province and should act as model incubator, funder and monitor. The ABET section of the North-West Education Department should collaborate with the university and communities in which the distance ABET learners are the central targets of the model. The University of North West, which has been identified as best suited to nurturing youth and adults from disadvantaged areas is imperative host of the model and its development (See fig.1,fig. 2).

1.2.4.The Academic Development Centre at the UNW

The centre has the potential and the infrastructure to be utilised by the Faculty of Education for training and development of distance education professionals, and must therefore be resuscitated back to its pre-1996 vibrancy. The centre can be used to prepare materials and develop, organise, manage and distribute electronic support in the form of video and audio to the distance learners. The ADC can also be utilised by the Faculty of Education in the training of course designers and distance educators. It can be the place where in-house lecturers and existing ABET (grade 12) educators from the existing night school programmes are re-oriented for contact classes with distance learners. The revived ADC can also collaborate with the Faculty of Education and other relevant university structures (for example the computer centre) to work out strategies to support learners through vacation classes and monthly group discussions. The winter vacation and at least one group discussion per month per region should bode well for grade 12 ABET learners.

1.2.5. The Counselling Centre at the UNW

This centre should be able to work closely with the ADC and assist the ABET distance learner with group and individual counselling sessions to be scheduled for the monthly regional group meetings and the vacation school. It is expected that group sessions are shorter and therefore this is where group counseling will take place. Individual sessions are more suitable during the longer winter vacation period, when interns and ABET educators who specialize in subjects are available to the grade 12 distance learners.

1.2.6. The Community

The community can never be isolated from its learners, since they are the ones who manage, control and administer the schools. Evans (1994) observes that “independent learning” is not of the unfettered, unstructured and unscheduled kind, and thus the communities in which ABET distance learners live ought to understand their role in the whole situation, since they are expected to support the learners in several ways, through materials, levies, buildings, transport and other forms of support.

The community consists of families, educators and several mentors, who must play their role, especially in remote rural areas, in fetching materials for distance learners from the participating high schools, make sure that these materials reach the learners, organise get-together sessions for distance learners in collaboration with the university and the ABET office in the North-West Province, make sure that every distance learner meets their university and local mentors (the subject specialists) during appointed times, and that every provision is made for visiting lecturers and local mentors is made to make the

monthly group meetings held on a scheduled Saturday a success, since these are crucial to instructions on tutorials, understanding of concepts, and grasping of logistics. The communities must ensure that school managers assist, not only with their school halls, but also with their laboratory and other electronic facilities where possible, or arrange for alternative facilities within the local government. It is possible that a local government hall may have the electricity, projection and video equipment necessary for elaboration on certain topics, especially in Physics, Biology, and Geography, where audio-visual learning helps a great deal. On the other hand, the community needs to take direction from school managers (and their assistants) regarding instructions from the university regarding distance learners. Collaboration and co-ordination become key words in this regard. The participant communities therefore consist of school managers, school-governing bodies, ABET volunteers, and other members in the local authorities within the communities. These are expected to offer all forms of support to the distance learner preparing to pass grade 12.

Community support also includes local radio stations, which may be community radio stations and the local public station, Motsweding FM, under the South African Broadcasting Corporation. These are very important advocacy media as well as carriers of public service announcements that impact on the model and alert the learners and communities about the university's visits and other programmes, the distribution points and dates of print materials, information regarding the winter and possible spring vacation meetings, and the Saturdays on which the monthly group discussion, briefing, and counseling sessions will take place.

1.2.7. The Technology support partners

The next participant in the model is the technology-support partner to the Department of Education in the North-West, who must ensure that systems within the University of North-West are functioning efficiently at all times. The technology partners presently implied are the Government Communication and Information Services in the North West, who are responsible for telecentres and multipurpose centres in the province for Universal Service Access (Burger et. al.1999). Telkom is one partner that has already assisted several technology-enhanced education projects in other provinces and in South Africa. The future looks good for partnering with other stakeholders, especially since the launch, recently, of the Africa Drive Project, which is a Public Private Partnership with the University of North West, the Department of Education in the North-West Province, Siemens Business Services, eDegree, Paragon Development Forum and various local and international supporters among others, including Network Appliance, Duxbury Networking, and North-West provincial Department of Finance. The project aims at increasing the number of suitably qualified, and business graduates in Africa (Newsletter 4 of 2003, UNW). Among the significant technology support partners cited in this model is the local radio station.

In this study, the findings have indicated that the ABET learner in the North West is still subjected to the traditional way of learning, where contact classes between learners and educators are conducted in the evening. The study has shown that the ABET learner is marginalised, and does not have access to the facilities and resources that the day school learner enjoys. Clearly, then, all of the elements of *print support, training, collaborative*

learning, active human support, joint space, interaction, and co-ordination (Verdejo and Davies, 1997) which are necessary ingredients for a suitable technology-enhanced distance education model are lacking in the present ABET system.

Above elements are the cornerstones of a technology-based distance learning system that are actually used in the development of the “virtual school” of this age. These elements were found to be lacking in the study, and these elements were suggested directly and by implication throughout the study. The University of North-West is called upon to implement the technology-enhanced distance education model, which is anchored on these elements, so that the young dropout and adult grade 12 learners may benefit from the system.

The UNW already has a programme that assists local ABET learners through registration, examination administration, and teacher support, using day school educators. The University is also called upon to offer print support. The learners in this ABET grade 12 programme study special subjects and are given evening classes at a local secondary school to improve their results and to access further education. However, the learners learn away from the campus in many ways. They neither benefit from campus expertise nor from its physical resources and facilities like the well lit and equipped lecture halls, laboratories, library, counselling centre and computer centres. The discussion below is a description of the model under operations, and will be referred to as the operational model for technology-enhanced distance learning for ABET learners in the North-West.

2. Operating the Model (fig.3)

2.1. Print support

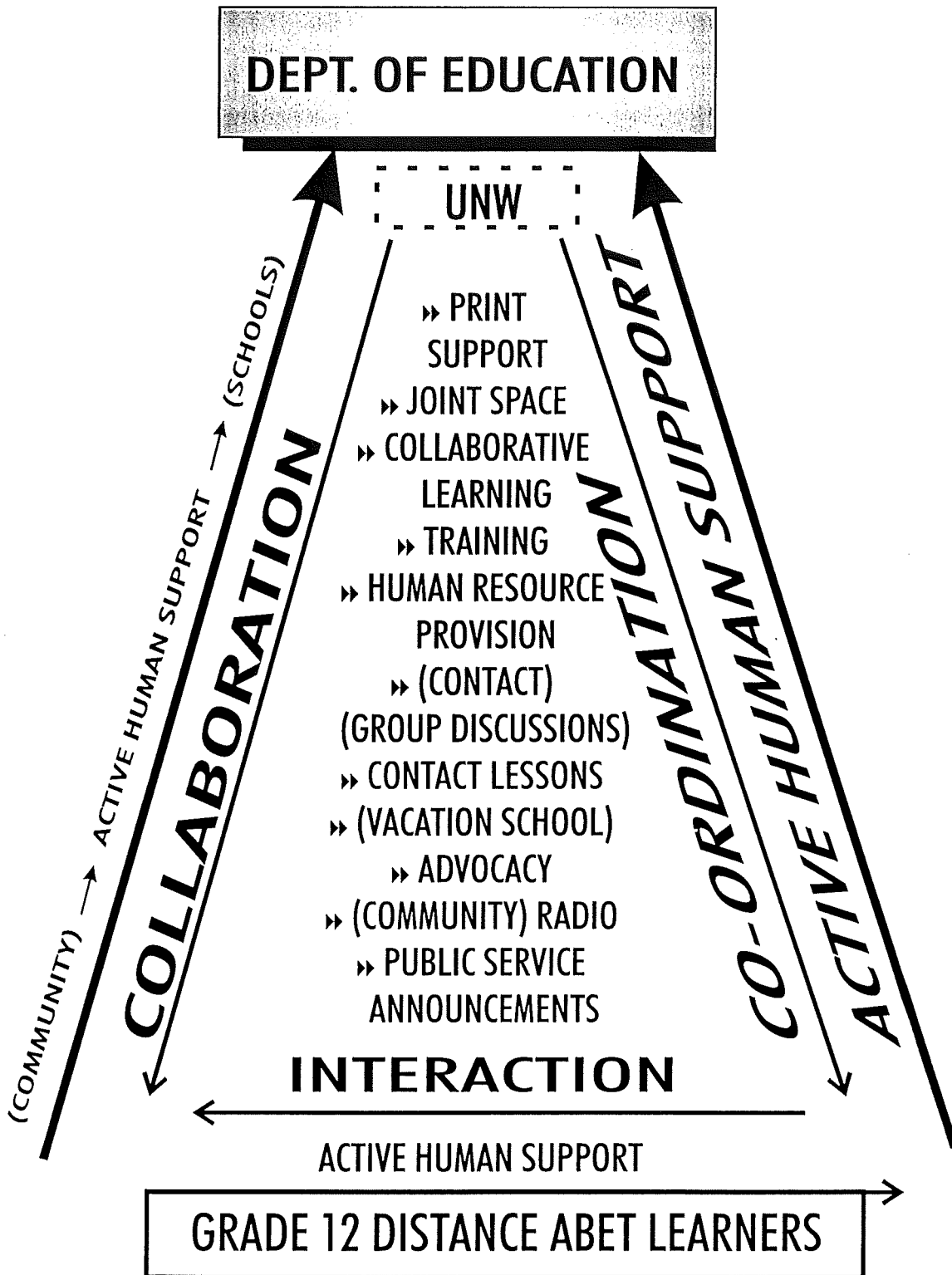
Print is the most visible model of distance learning, and the most utilised. The print support materials are designed and prepared by experts in specialised formats so that learning content is organised to be in line with the principles of distance learning. Two-way communication is one feature that is common to distance learning. Salomon (1981b) referred to the use of symbol systems that are understood by the learner in his discourse on media and cognition. Since the first priority of teaching should be concerned with cognitive development, it would therefore follow that the proficiency control elements should be the primary concern of the teacher. This is done mostly through print in distance education. Brookfield (1986).

Print support forms the backbone of all education. For contact lessons, this is possible through the use of chalkboards, bulletins and flip charts. For distance learners, tutorial notes and graphic contents in the form of drawings, illustrations, and others are the norm, accompanied by questions for exercises as feedback, and specially designed assignments with deadlines for completion and submission, as part of the discipline within the flexible and independent learning domain (Garrison, 1986).

The technology-enhanced model of distance education for grade 12 ABET learners must be supported by print materials designed to suit the needs of the learners. The design of print materials takes into account

2.1.1. content, which can be developed and provided by the high school day educators and the university working in collaboration.

FIG. 3: MODEL OPERATIONS



2.1.2. methodology of delivery, which can be guided by the curriculum experts and the educational experts at the university, working hand in hand with subject experts from the high schools and the university (including the graduate and fourth year students in the Faculty of Education who specialise in certain subjects, e.g. Bachelor of Commerce in Education).

2.1.3. layout, design and typeface and font size of print materials, which must include, in its planning, the Academic Development Centre, the ABET learners themselves and those who would use the materials in their contact teaching during vacation lessons, namely the educators of these ABET learners, and other contact persons who would act as their support personnel.

2.1.4. language level of the learners and possible translations where necessary.

2.1.5. image, colour and illustration issues on the print materials, with considerations of use with electronic (audio and visual materials as supplements).

As illustrated above, the collaborative model is not a top-down model that implements any stage without inclusion of all other stakeholders. Student representatives from ABET must be part of the teams that will test designed and produced distance materials for comprehension from time to time, and give feedback about their suitability, as well as suggestions regarding layout, assessment and evaluation methods and so on. The rest of the print materials come in the form of folders for assignments, answer sheets for exercises, and envelopes for the return of assignments.

2.2. Training

In-service training is a critical aspect of the model, obviously, and therefore volunteer or nominee participants will benefit from the model by being trained in design and support issues. This bodes well for training of distance educators as well, who are lecturers at the university. The training of tele-educators has never been attempted at this university campus, which must grow, and therefore a programme has to be in place in order that ABET may benefit from it. The university, so far, needs to re-build its former strong commitment to community development, and this is one viable niche area that can be explored. This model has the potential to be supported by both the education authorities at national level, and the private sector groups, which form public-private partnerships with the department of education from time to time. The complete model ensures ongoing training of core providers of technology-enhanced distance education, providers of Information Technology support, and other relevant persons. Selection is essential so that persons trained are prepared to sign long-term contracts, which guarantee that personnel is kept longer to avoid the collapse of the model.

The model supports ongoing training of core providers of technology-enhanced distance education, providers of Information Technology support, and other relevant persons.

Selection is essential so that persons trained are prepared to sign long contracts into the project, or are permanent members of the university. Project models have collapsed because people have taken away their expertise from local projects to “greener pastures” elsewhere, thus breaking the chain of continuity so necessary for a health project model.

The criteria for selection should include local youth who are prepared to stay in the

province for some reasonable time to support, nurture and develop the model further.

Suitable candidates can be chosen from the corps of young students studying for adult education degrees and diplomas, or from those that are studying for degrees in specialised areas (e.g. B.A. Mathematics Education). Training must be a very fundamental part of the model and should not be brought to a halt at any stage. However, the costs for training must be reduced progressively through strategic planning and ongoing review.

2.3. Collaborative learning

Collaborative learning refers to the strategy that ensures that students who work in isolation from others during independent study have the chance to meet other students in group sessions to discuss common problems and so on. In collaborative learning, the electronic and text systems are used in a manner that all the learners benefit from the systems at the same time, as in virtual learning. The systems are also interactive, and therefore learners can interact with the educators and give immediate feedback. The advent of e-learning has made this model possible even through e-mail and teleconferencing systems. Every opportunity needs to be given to the learners to learn as teams in spite of their individual independence.

The second level of collaborative learning is that level where the ABET learners must link with the schools for scheduled group discussions, workshops, and seminars, which can be held during certain holidays and on certain Saturdays. It is at these group discussion sessions that lots of feedback can be gathered from the ABET learners and

their problems, and where counselling, sessions and intensive contact classes given on selected topics by visiting UNW staff and interns. ABET and community monitors should also be used, who must ensure that information filters through to everyone involved in the model project.

Collaborative learning, in the third instance, refers to all those persons being trained for various operations in order to assist the ABET learners in the technology-enhanced distance education provision model, as subject educators, distance educators, course designers, technology-providers, counsellors and other role players who learn while working, in order to support the model.

2.4. Active Human Support

The involvement of community in the support of ABET and distance learners is of utmost importance for their learning success. The human support referred to here is possible also when learners studying through correspondence are given the opportunity to meet their distance lecturers and mentors, or when they have the opportunity, once in a while, to meet at vacation school, or at group discussion sessions with subject experts for contact tutorials. The human contact element is very important for motivation of distance learners (Evans, 1994). The use of video and audio systems, e-learning systems and other electronic technologies need technical advisers as a form of human support. Maintenance and repair of systems is done by human technicians on site, and these are important both for the learners and the providers of distance learning to ABET learners.

The model must make provision for personnel that will repair and maintain, demonstrate and give workshops, explain and give patient support to both learners and educators alike. The technology partners are the providers of personnel that offer systems support. Therefore active human support is found in the community, the ABET officials, the university, and the public private technology partners already cited in the first part of the model.

2.4.1. Collaborative community and school support

This is first about support within the communities and schools. Therefore our target ABET learners are to be virtually adopted by the learning sites that host their learning. These learning sites can then be distribution centres for all their materials from the UNW and elsewhere, for instance, the Government Communication and Information and Technology Services, which provides the video service for ABET learners). The selection of video materials is done by the UNW teams, which are completely inclusive (ADC and subject experts do the previews). Communities are expected to assist, and therefore School Governing Bodies and Student Representative Councils are expected to lend active support as well. This study has shown that village communities are willing to assist in whatever way they can, to support the target ABET learners who are the focus of this model exploration.

2.4.2.Support by high schools in the community

The second level of active human support is the registration and administration level, as well as the information level. High schools are expected to assist in this regard. The model delivery system needs foot soldiers who must at all times deliver information about the developments in the curriculum and other related matters. The schools should be used as information dissemination centres as well as centres for group discussion sessions and for workshops from visiting lecturers from the university. This is where the ABET learners can give feedback about their subject content and other problems, and this is where group counseling of learners can be effected. School managers are expected to sign in to offer the necessary assistance and support.

2.4.3. Community, Radio and UNW linkage for ABET home study groups

Radio must feature strongly here, especially for the sake of the rural communities. The university has to link strongly with radio for this system to succeed, so that every public announcement about the target audience reaches the learners and their support persons on time. Radio is a powerful medium for advocacy as well, and more learners with grade 12 problems can be informed through this medium, as well as benefit from programmes that may be aired on radio, while the model will also be communicated to the communities from time to time to encourage enrolments in distance education. The university-radio-community linkage must be backed financially and materially by the North West

Department of Education. This means that proper and efficient co-ordination of all systems pertaining to the use of radio, both for programming of selected problem topics and public service announcement of group discussions, community ABET meetings and visiting lecturers should be manifest.

2.5. Joint Space

The space referred to here is shared space, both in the university vacation class, in the local school at any meeting with the authorities, at libraries and laboratories. These spaces are arranged as support systems. There are those video viewing sessions and those teleconferencing sessions arranged for learners. There are also arrangements that at every get-together of learners and their educators, space is arranged by government, the community or the university for purposes of assisting the ABET distance learner. The community centre, the school, the university lecture hall and any other space implicated in this model is referred to as joint space.

Joint Space is a broad term used to indicate that every technology-based distance education system cannot be done in isolation. Resources, services and facilities are shared. This means that schools with facilities like “a good library”, “a good laboratory”, a good resource centre must be the model participants that show empathy to the needs of the ABET learners. These schools, easy to identify, may act as role model schools supporting ABET learners with laboratory experiments, books, or other materials, or video viewing sessions(e.g. in the event of a prescribed English literature text like Shakespeare’s Julius Caesar for instance). ABET learners should also be encouraged to

use computers and other extra mural facilities in the schools and at the university during vacations. In order to enjoy joint space, ABET learners must not be passive recipients of goods and services, but active enthusiastic partners even in the maintenance and fundraising for maintenance of facilities. Advocacy for sharing of space can be done through radio. This means that there must be interaction and co-ordination of efforts for joint space to be used effectively.

2.6. Interaction

Interaction is the essence of the modern technology. Radio may not be interactive, but the addition of the telephone or the cellphone in the communication system makes it interactive, and feedback is immediate. Effective and efficient distance education should utilise interactive systems. In the event systems are not interactive, this aspect must be built into the model. This means that every participant must communicate with their nearest peers, supervisors or mentors. Learners must never be left on their own for too long, and radio must be used effectively to promote dialogue. Interaction is one of the strongest elements of distance education provision. The model element of interaction is implied at several levels. The ABET learner model herein suggested, insists on interaction between peers before interaction with mentors (distance learning providers) and interaction with assessors. The model must encourage talk, especially during group discussions and on radio, so that many content and logistical problems may be discussed and information flow is easy. In this model, internal and external assessors must be

encouraged to talk to learners on radio. This way the problem of obscure assessors is eliminated.

External assessment should not be a threat but rather a welcome challenge to ABET learners, who are often already traumatised by failure and exclusion. Therefore subject examiners must talk to ABET learners on radio, and encourage them as they communicate their expectations. The implication here is that the ABET slot be activated on radio locally. Programming for ABET learners can then be directed at problem topics in problem subjects. The UNW can work with the local station on a weekly one-hour programming in which learners are afforded a telephone facility to air their views. Regions can then talk to the radio stations in rotation. A sponsor can be sought from the Department of Education in the Province or any private company for radio interaction.

The second level of interaction is at seminar level, where special subject topics are discussed. Scheduling must be done in collaboration with the UNW and the Department of Education. ABET educators must be in the studio with ABET learners to talk. Home listeners can then respond. Good planning is needed here, but members of the radio staff always make a good job of scheduling for regions. This way logistical problems are minimised. Ongoing feedback is the reason for ongoing interaction. This must be emphasised, for the model to function efficiently. Group meetings, already mentioned, are also vital to interaction between all stakeholders and participants in ABET grade 12 issues.

2.7. Co-ordination

Co-ordination is a vital cornerstone of technology-enhanced distance education. Every move by distance education planners and course designers is grounded on co-ordination. Human resource organisation is an essential ingredient in this regard. The model cannot succeed if there are no co-coordinators at each level. Three levels of co-ordination are cited in this thesis, namely central level co-ordination, local level co-ordination, and total co-ordination that ensures that all participants know their roles, their partners and their colleagues in the project model.

2.7.1. Coordination at central (UNW) level

The UNW needs to appoint one or two main co-coordinators for the ABET grade 12 technology-enhanced distance education model, which is expected to develop from small beginnings and grow into a fully-fledged programme, based on the findings of the study. The central co-ordination unit has to liaise with the North West Department of Education (ABET sector), and the Faculty of Education, which oversees the work done in the campus. The distance education unit, housed in the Academic Development Centre, and overseen by the Faculty of Education, should be a vibrant unit that ensures co-ordination with all relevant stakeholders, among which are the electricity and telecommunications providers, the central computer department, the printing unit at the university, the audio-visual unit in the Academic Development Centre, and the community and radio liaison

unit, which may consist of student interns. The ADC, around which the model must revolve tailored, should commission duties to the different units.

2.7.2. Co-ordination at community level

There is a need for regional and district co-coordinators, who must work hand in hand with the UNW and the district offices of the department of education, and with the schools, so that the ABET model can be managed. The duties of these incumbents must be clarified, so that they do not intrude in the territory of other stakeholders. The monitors can also organise group sessions and venues for these, briefing trips to the UNW from time to time, according to timetables agreed upon. Monitors should alert the distance learners about every possible development within the matric curriculum and examination preparation domain. They must ensure that they meet regularly with UNW distance education coordinators for briefings, workshops, problems related to distribution and collection of materials in the participating high schools, and other ABET distance education related matters.

Quarterly meetings are more cost-effective and can be scheduled professionally. Boundaries are clearly defined and duties and responsibilities outlined, to avoid negative power relations. These volunteer monitors, who must be selected from the ABET distance learners, must enjoy some incentives from the North-West Department of Education through the university (e.g. subsidised travel and subsistence, free print materials and print support materials for video and audio lessons).

2.7.3. Total co-ordination

The objectives of the model are observed by all partners and are adhered to at all times. Co-ordination is monitored by the ABET department and all other stakeholders in the process have to report via the established line managements systems the progress and problems in their areas of operations outlined in the paragraphs above. The ABET division reports communicates with the University of North West, with ABET learners, with the participating communities and other partners, and reports to the North West Department of Education.

2.7.4. Infrastructure development for e-learning technologies

This area of preparation can be done in stages, but meanwhile, the entire body of ABET learners may learn from the model above as soon as possible. Funding is obviously necessary for infrastructure development. Computers, radio, television, video, audio and teleconferencing promise to become the normal learning mode as soon as the Africa Development Plan is operational in the campus. Commitment on the part of the North-West Education Department and her public private partners in this regard. is encouraging, because in the recent launch of the ADP programme for training of educators of science and technology in the North-West it was clear that the programme would promote the expansion of computer facilities at the university.

3. Pillars of Effective Operation

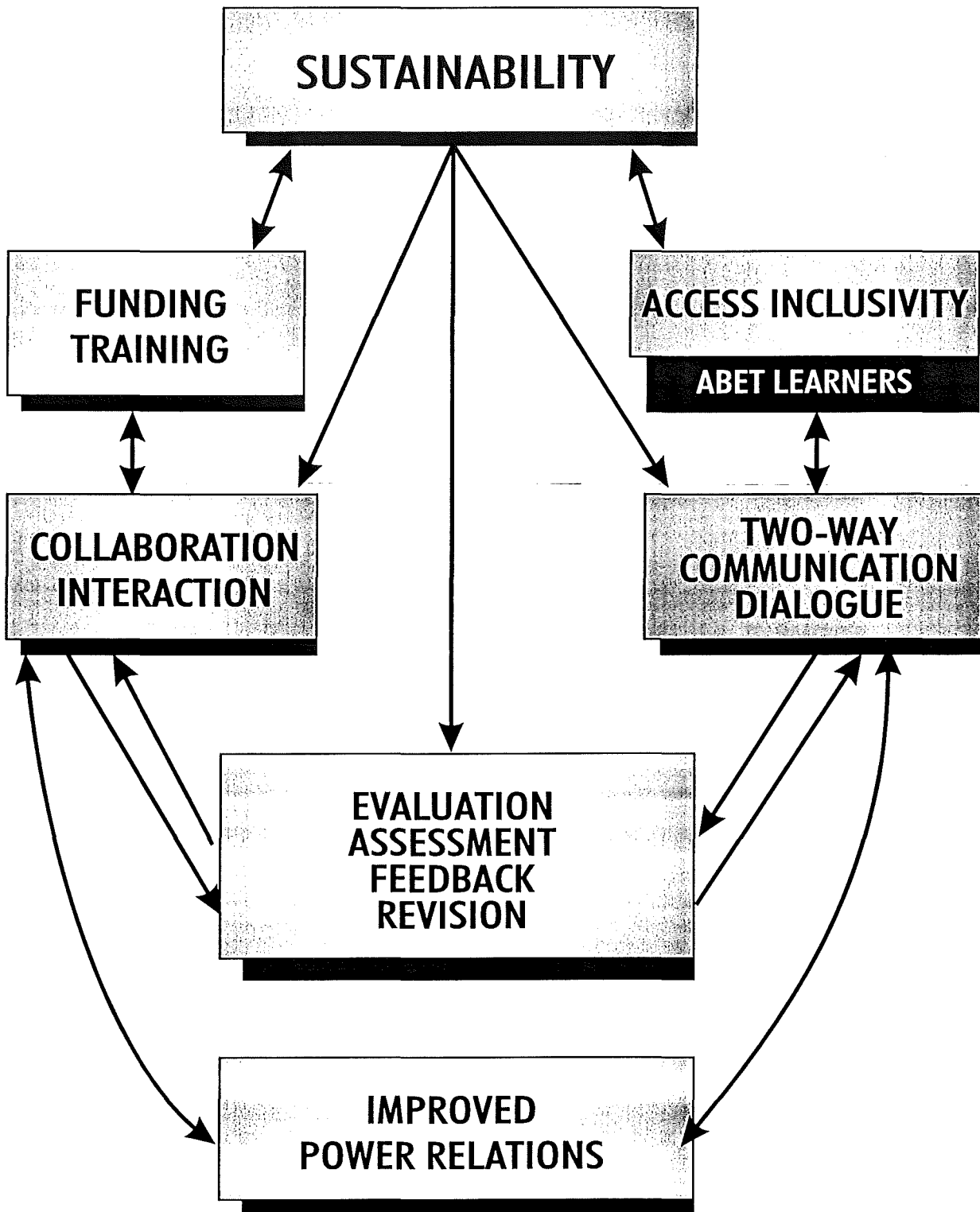
For a technology-enhanced distance-learning model to be possible, it is imperative that it rests on the pillars based on the principles of *access and inclusivity, funding, sustainability, two-way communication, assessment and feedback* (see fig.4, p.174).

The model that emerges from the findings of this study is one that considers all of the elements mentioned in the paragraphs above. This is the model which must bridge the socio-economic gaps and geographic-logistical problems encountered by the ABET learners, namely the problem of far-away schools, dark nights, dangerous roads, formidable geographical terrain, dilapidated classrooms, absenteeism and other logistical and infrastructural problems mentioned in the study, as well as the demotivation of both the learners and their educators in the village and squatter districts.

3.1. Access and inclusivity

The model under discussion is design to overcome problems of discrimination in education, as well as to counter the problem of lack of access. Clause 29 (1) of the Constitution of South Africa states that everyone has the right to a basic education, including adult basic education and to further education, which the state must take reasonable measures to make progressive available and accessible (1996:13). White Paper no.6 of the National Department of Education clearly outlines the significance of inclusivity in school education and in school curricula. It is therefore important that this model puts in place all systems that promote access, both to educational environments and persons, materials and opportunities.

FIG. 4: MODEL PILLARS



3.2.Funding

Funding is critical to the very existence of the model, and therefore a funding strategy is suggested that will ensure that at all levels, the loopholes are closed. A macro-level technology-enhanced ABET distance learning must be funded by the North-West Provincial Department of Education and its other funding partners. The funds are then used to:

- 1) support the ABET programme (free second-chance learning)
- 2) support the training of distance education providers UNW
- 3) support the training of tele-educators and electronics and computer maintenance personnel
- 4) support schools that participate in the model project for technology-enhanced ABET distance-learning provision
- 5) support the Academic Development Centre's audio-visual and teleconferencing systems
- 6) support information technology centres that assist the ABET learners with their facilities wherever they are in the North-West Province.

3.3. Sustainability

It is common knowledge that models which do not create loops for ongoing funding, ongoing training, ongoing evaluation and assessment and ongoing review, often are threatened with collapse (Schramm 1977). It is also known that for any model to be sustainable, there must be a balance in power among the active participants, and to this end, Brookfield (1986) observes that

For a facilitator completely to ignore learner needs and expressions of preference is arrogant and unrealistic. But it is just as misguided for a facilitator to completely repress his or her own ideas concerning worthwhile curricula or effective methods and to allow learners complete control over these.

Therefore ongoing dialogue between all participants is a remedy for whatever power relations problems may emanate. This is an area which can also be helped by the counseling element in the model. This is also to be done on an ongoing basis. The definition of educational technology aptly places the critical area of sustainability as the nerve centre of the model for technology-enhanced distance education, since it is operational in approach. Defined as a system encompassing gadgets, methods, means, organization and management of educational delivery to specific target audiences, and the means to ensure that the design factors, the human resource factors, and the management factors are properly synchronized for the attainment of educational goals, the elements encompassing it are responsible for the checks and balances that ensure that power is shared in a balanced manner within the system by all participants.

3.4. Two-way communication

This aspect of the model is found in each stage and in each structure, because it is fundamental to the success of the model. Two-way communication is healthy for feedback between and among the participants in the model. However, it is guided by the control and organisational elements in the system. Two-way communication is one of the strongest principles of human education (Garrison, 1989).

3.5. Assessment and Feedback

Without assessment there is no way the model can survive, since this exercises ensures that the model is reviewed and revised at the right time. This is a way to avoid crisis of any kind. The assessment of the model can be done by the faculty participants and the ABET section of the North West Department of Education on a quarterly basis, to ensure

that all systems are functional, and to isolate problem areas as well as establish strategies to close gaps where they exist (see figure 4).

For this model, the university must use its existing information technology facilities and those in the Academic Development Centre during the Winter vacation school period, and ABET learners can then enjoy some assistance with retrieval of subject matter from the Internet. Winter schools are often sponsored. A joint venture with the SRC at the UNW, the Youth Development Trust and the Youth Commission in the province, Telkom, as well as some other national sponsor (e.g. Department of Broadcasting and Telecommunications), this model will thrive and promote access to technology-enhanced learning among the previously disadvantaged learners in the North West.

4. The final building blocks of the model

4.1. Equipment and Systems Design

Built into all of the above pillars is the significant aspect of equipment and design systems. Above can be done for the university by an outside agency, e.g. Telkom, which is a possible donor, and also by the electronics department at the science and technology faculty within the university. The university must, however, make sure it does not sign a contract that will sell the model away to the donor. Domatob et al (1987) have warned against donor-driven projects. The specifications should at most be comparable and compatible with the model philosophy and its participants. Seligman (1998) refers to appropriate technologies for audiences.

4.2. Strategic Planning for Technology-based distance education

Because it is a collaborative endeavour, planning for this model should take into consideration the following staff development on an ongoing level

- vacation school support staff
- technical support (maintenance and repair of systems) staff
- support staff responsible for model advocacy and support.

This means that every participant in the model must be workshopped or trained in some way or another in order to be a useful part of the system throughout its operations. Finally, it must be stated that the model demonstrates a forward-looking strategy. It is also important that the model plans for the residue of other matriculants who will be left out as soon as the national department of education phases out the present matriculation system. This forward looking strategy must also consider the development of the model to include bridging programmes that are emerging within the campus and that will continue after the merger with Potchefstroom university. The idea of flexibility is implicit in this forward-looking strategy, which looks at future developments in human and machine systems within the time period of the model's lifespan.

4.3. Flexibility

The idea of flexibility is multi-faceted. Flexibility of model development refers to its adaptation to the environment where it is operant. Distance education experiences mentioned in this thesis point to the need for flexibility for students learning through distance education, especially those using technology-enhanced systems in their learning. Wedemeyer (1971) emphasises “independent study” that is free of institutional constraints, and Schwann et al (1998) are concerned about the bureaucracy of the education system, which has introduced into the system elements of time programmes and procedures and methods. A flexible system allows students some space with their time frames, so that they move through their programmes according to their pace. The idea of standards is more important than that of time frames and semester systems. Subject mastery must take precedence over time-frames for examinations and other administrative constraints. In other words, learners who have not registered for the examination may enter the programme to continue learning, and could register in the year in which they are ready to write examinations. It must be more about mastery than about the end-of-year examinations. This should then change the complexion of administration and registration, and should give poorer learners a chance to raise their fees over some time. On the other hand, the less privileged grade 12 ABET learners may have to be

supported financially by the national or provincial Department of Education as learners with special needs, so that they may have access to higher education. The model must make education flexible and applicable to all youth training projects and should thus be pro-active regarding the developments within the FET (Further Education and Training) preparation of learners in the future. The model must make education accessible to all learners in matric, including the weaker day scholars. Materials developed at the UNW must be attractive. The model must also be language-sensitive, easy to translate into other languages, and adaptable to use on the Internet, use with video and use with audio materials. It is expected that materials from this model be user-friendly but highly professional. The model must be sensitive to slow learners, and therefore put mechanisms and personnel in place for these students. All elements of discrimination must be eliminated, and so the model must be reviewed from time to time and be refined accordingly. The UNW should set up a review committee consisting of participating professionals for annual reviews. The technologies used must also be reviewed. The digital technological possibilities must be explored and exploited fully.

Chapter 6

Summary and Recommendations

1. Summary and Recommendations

The model described in Chapter 5 above has the potential to be implemented with immediate effect, based on the existing expertise and infrastructure within the University of North-West, and the pressing need to change the modus operandi of instruction in the disadvantaged rural and informal settlements of the North West grade 12 ABET learners. It has to be borne in mind that the grade 12 ABET learners targeted in this study have several gross disadvantages, and that they need special instructional approaches in order to cope. This has to be taken into consideration by the providers at the university.

Among the issues pertinent in this regard are language usage, layout and design of print tutorials, question and answer methods for assessment and evaluation, giving instructions for filling in of forms and other administration materials and so on.

For a working technology-enhanced distance education strategy for rural and disadvantaged ABET grade 12 learners in the North-West Province the following processes are recommended:

1.1. First Phase Activities

1.1.1. Strategic Planning Meetings

A strategic meeting be held within the Department of Education ABET office, Faculty of Education, members of the Institute of Education which has demonstrated expertise and experience in project management, and members of the Academic Development Centre, to discuss the model as submitted, and to assess the following recommendations:

The UNW must implement, with immediate effect, a pilot programme commencing with the print delivery mode of distance education to at least 250 ABET grade 12 learners (50 per region x 5) as the first stage towards the development of the technology-based distance delivery. The print delivery mode is possible because the staff in the UNW Faculty of Education has the capacity to nurture collaborative projects at print and part-distance delivery level. Their present NPDE (National Primary Diploma in Education) project will soon be completed. The staff responsible for this project can then begin to work in collaboration with the UNW Faculty and the UNW Academic Development Centre on planning the project and soliciting funds from the Department of Education in the North-West. It is also possible at this stage to involve the University of Potchefstroom, based on the impending merger. The model is clearly feasible and can be implemented immediately because the ABET grade 12 learners already exist in the (UNW) institution, except that they are learning through contact classes, using outside facilities, which this study has proved unsuitable. Elements of the model that can be implemented immediately can be identified. Funding may be found for the pilot, and support can be solicited with relative ease.

1.1.2. Planning for the training and facilitation of distance educators

The Faculty of Education, in collaboration with the Academic Development Centre in the UNW should plan for training and facilitation of distance educators, working in collaboration with distance experts from the South African Institute for Distance Education (SAIDE) as consultant structure from government (meetings, workshops, and strategic planning sessions). This calls for increase in expertise and staff within the

Faculty of Education and within the Academic Development Centre at the University of North- West. Strategies to enhance the staff complement may be sought from secondment of experts from other sectors within the Faculty of Education at the UNW or through the use of colleagues at Potchefstroom University who are telematic experts. The UNW Faculty of Education must also establish the distance education training department as soon as possible. The Faculty of Education must engage the university in strategic meetings and must prepare for training and facilitation of distance educators and course designers within the university. The number of staff members in the ADC technical support sector and in the Information Technology sector must increase. At least two workshops per month can be given from February 2004. The Faculty of Education's departments of specialising in curriculum, adult education and educational technology can begin to develop modules for the Distance Education programme to be introduced in 2004-2005 as academic specialisation modules for undergraduate and graduate level training. The modules can then be registered and marketed to potential students externally.

1.1.3. Planning and preparation of electronic materials

The video and audio materials must be prepared for ABET learners, according to their needs. This means that the research must be embarked on, to find out from the rural areas which content areas are problematic in the common core subjects done by learners in those areas. A team must be established for this task. For example, the Department of Languages and Communication must prepare special content materials in language and literature, and help identify suitable video materials for the learners, and other specialist departments to do the same, as well as collaborate with the Curriculum Section of The

North-West Department of Education on print support and with the ABET Section (North West Province) on how best to get these materials to the learners.

The newly launched Africa Development Project's e-learning strategy for the North-West Province and the University of North-West must include the ABET learners in the disadvantaged rural areas in the mid-term. Meanwhile, all available resources at the university should benefit the target grade 12 ABET learners immediately. The existence of the Africa Development Project must be made known to every member of the Faculty of Education, and its benefits for learners be tabled, so that in their planning, the faculty can look at available future technologies for ABET learners. Meanwhile, the UNW Education Faculty and Academic Development Centre must have strategic workshops with the UNW Computer Centre about possible collaboration in the distance education ABET model.

The UNW must invite the target ABET grade 12 learners and the community representatives for a series of workshops on the formulated technology-enhanced distance education model, as part of the road show to introduce the model. The road show should be launched at the University of North-West, and communities from rural districts be invited, including school managers and school governing bodies, as well as local authorities. Funding for the road show should be solicited from the business sector and the Department of Education, North-West Province. Aspiring educators from the old ABET "night schools" must be part of the advocacy network that includes public radio messages, workshops and information dissemination to all stakeholders. Members of the

community to be selected must form part of the steering committee for ABET distance education. Duties of the committee must be outlined clearly, based on the model (e.g. fundraising for sustainable systems within the local community). At another level the model must develop a funding strategy for sustenance. We have read about projects that collapsed because of dried-up funds, mismanagement, and lack of vision. The rollout plan for this model should consider a funding strategy that ensures funds that come from the local coffers as part of the integrated development plan of government, which uses funds given to municipalities for development of communities, as part of the Reconstruction and Development Plan. Modest levies can be raised within the communities to support this model. ABET learners must be relieved of the burden of heavy payments for print notes and support materials, as well as technology-based systems. Bursaries may have to be made available from all departments within government for this project. Funding strategies to finance the entire model must begin to emerge from preliminary meetings. The Department of Education in the North-West must begin to solicit partners for the project, so that the funds do not dry up. It is essential that funding partners also be informed of the inclusion of ABET learners into the e-strategy of government at this stage.

1.1.4. Identification of campus and other technology participants

The university should embark on an audit of computer literate members within the Faculty of Education in preparation for the technology-enhanced ABET distance learning project. This should facilitate planning for training during Saturdays and vacation classes until most or all of the members of the Faculty know the most important basics required

for technology-enhanced distance learning. The identification of external technology participants should consider their commitment, based on their social responsibility philosophy. Telkom and GCIS have already been labeled good partners.

1.2. Second phase activities

1.2.1. Establishment of a board

The establishment of a board for monitoring the activities of various stakeholders ensures that among other things, the funds do not dry out, and the model is sustained.

1.2.2. Policy Frameworks

Policy frameworks and prioritisation should also be monitored on an ongoing level. The board should consist of expert consultants sourced from within the ranks of strategic planners, financiers and professional experts in the model. It is also important that the policies formulated and operations that have been prioritised in the strategic plan be monitored at an early stage, so that as the model develops, checks and balances are made, and as other role players enter the fray, adjustments are made, and made known to all participants.

2. Modus operandi for recommendations

At level one, the radio advocacy programme must accompany the suggested modus operandi. Radio must be used extensively as part of the road show, as it will save costs. However, it is important that the initial visits to the *five ABET distance education regions* be made. The regions must be divided to convenience the project managers and

not necessarily be according to the geo-administrative demarcation. All areas which do not have a transmitter must be included as priority areas in the pilot, which can be divided into phases. The public announcements regarding the model and the ABET learners, and any relevant information, should be done through public and community radio.

All elements of the model must show flexibility at all stops, so that organisation is not too rigid at the beginning. Flexibility, however, must not deteriorate into lack of discipline, but rather balance the scales between independence and control (Garrison, 1989).

4. Motivation for adoption of model

The remarks that conclude this thesis serve to emphasise the most important elements of the model, the foundations and basis for argument for the model be put to the test, and the developments already in place around the UNW, the Department of Education in the North-West Province and the general national scenario. These concluding remarks also serve as argument for the discourse on technology-based distance education for the hitherto neglected out-of-school youth and adults who are grappling with their grade 12 in the rural and disadvantaged areas of the North-West Province.

Sustainability is the key word in every project, and because of the findings of this study, and the positioning of sustainability within the model as one of the main pillars, it is imperative upon those who must manage it to ensure that it is sustainable. Strategic

planning for sustainability is of the essence. History has left us a legacy of projects, some of which failed and others succeeded.

However, it is to be noted that projects fail, not in the middle of their management, or at the end, but rather at the very beginning (Hall and Hord, 1987). Skinner et al (1982) maintain that the crisis is managed at the beginning of the work plan and not at the end. For the present model to be sustainable, the crisis points must be conceived during the planning stages of its implementation. The implementation itself is an imperative based on the foundations for intervention on behalf of the less privileged learners, more disadvantaged areas, and the litany of legislation that argues for equity of provision for the less privileged, among which are the South Africa Constitution and the White Paper No. 6. of 2001.

Equity and Equality in Education Provision (Constitution of the Republic of South Africa, 1996) is another imperative within the ABET distance model. The challenge to level the playing field in education is perceivable on all fronts of South Africa's education system today. The university mergers are a good example of this transformation and revolution, hence the many practical experimental projects on Information, Communication and Technology in the new South Africa today. Some of these have been recorded briefly in this thesis, and yet many others have not found their way into the discourse. These projects cited in the thesis are a small part of the big response to the call to assist those who have been discriminated against in the past because of apartheid, but also to the impending and persistent digital divide between the

less developed world and the more developed world within this country, which has been described by Tshwete (1996) as “two worlds in one”.

The battle against the digital divide is being waged, partly because “in five years’ time we will have illiterate people running the new economy” (Shope-Mafole, 2003).

Advocacy is an essential ingredient for the first stages of this model. So that the less privileged ABET grade 12 learners are given the attention they deserve, it is important that in advocating on behalf of a downtrodden majority that live in the “dusty backyards” of rural South Africa (Galombick, 1998) the results of the survey done, and the model that emerged from the study, be compared to what is already happening in the world of distance education in and around South Africa, and in the world of convergent technologies of the ICT arena in which we live. The medium of radio be used to advocate for special programmes for the rural ABET learners.

The University of North-West, the home of this study, has not ventured fully and boldly into the arena of distance education except in a few unreported cases within faculties (e.g. the Faculty of Human and Social Sciences’ Life Skills Programme in the Department of Social Work, which is a programme given to employed social workers). The distance programme at the university is only partly functional for part-time students, and elements of technology-based education are strongly felt in those areas where some students use the Internet as a learning tool, where e-mail is the mode of communication between lecturers and students. While elements of the distance mode through technology are being strongly debated in the MBA programme in the UNW, the University of Potchefstroom,

soon to merge with the UNW already boasts its own telematic system of course delivery(www.puk.ac.za). The argument for distance education ABET can be taken to another level. The provision of matriculation programmes by business and other institutions of higher learning is mushrooming in South Africa. However, the model used is mostly the same in all instances, because the fundamental issue of deprivation and lack of access to the mainstream education is not taken into consideration by these commercial ventures. The fact that these commercial institutions continue to mushroom is indicative of a need for entry into further education, and also the quest by the bulk of non-school learners to study through correspondence. The majority of these learners are from the disadvantaged backgrounds.

The model that has emerged from this study is concerned with a special target audience of learners with special needs. Their learning model needs to be developed by experts within the campus, a notion which Nunan (1983) supports. He argues that educators should be the ones responsible for course design, and not commercial educational technologists. It is the fundamental constitutional right of the historically disadvantaged learners to enjoy the privilege of attention by the academics and researchers within their province. The basis for this model is social responsibility, and the University of North-West is challenged to develop a business plan for an ABET system of training grade 12 learners through the distance technology model that is unique to disadvantaged communities from the rural heartlands and the informal squatter settlements of this province. The possibility and feasibility of such a model has been confirmed in the findings of this study.

Distance education for ABET learners is part of the strategy to promote continuing education. Its basic elements are not new, but the strategy for public-private partnerships, which is advocated by the Government of South Africa, strengthens its position in the sustainability stakes. The UNW can surely take the challenge, and indeed the model has the potential to revolutionise grade 12 ABET problems and to bring back all those dropouts from the corners of the North-West Province, and indeed the rest of South Africa.

Technology-enhanced distance education for the disadvantaged cannot anymore be sidelined, because the Internet has shown that information and education are a “click of the mouse away”(Chaane, 1998) as has been mentioned earlier in this research. This statement impacts on both ABET learners and their distance educators alike, who must be trained in the use of computer systems so as to prepare them for the technology-enhanced model of distance delivery for ABET learners.

The UNW has already demonstrated the ability to nurture projects in conjunction with the Department of Education in the North-West Province, among which are the NPDE (National Primary Education Diploma) programme for underqualified teachers and the MASCOM programme for Maths Science and Commerce repeaters from local high schools. This further proves the capacity of the Faculty of Education in project management. The University of North-West has also developed a series of computer-related courses in the Graduate School of Business, the Faculty of Science and Technology, the Faculty of Commerce and Administration, and the Department of

Communication, as well as in the Media Centre within the UNW Central Computer Centre. The newly launched Africa Development Programme is a new plus in the development of technology-based systems within the campus.

These and other structures, like the Academic Development Centre are capable of collaboration and consolidation of their capabilities and competencies towards the development of a viable technology-based distance education training system for ABET grade 2 as a project dedicated to the youth from rural areas and informal settlements.

4. Conclusion

It is possible for the Faculty of Education to prepare trained adult educators for distance learning, so that they oversee the model project within their rural communities where they serve. The Academic Development Centre to be commissioned to train course designers through workshops and certificate and diploma semester courses. It is also possible for the Faculty of Education, together with the Curriculum Studies and Educational Technology sections the plan for ABET grade 12 learners with their departments, working in collaboration with the ADC and the Internship programme managers. The collaboration is expected to bring out a corps of educators and interns who would assist the ABET distance learners during the vacation periods when they come to the university for contact classes, term assessment and feedback.

The greater digital community in South Africa is positively active in attempting to offer technology-based education through radio, television, the Internet and other digital

technologies of satellite and solar systems. However, the rural learners still lag behind, and are often the last to get assistance from this project, including the SABC Education Project, which, for its interactive lessons on Saturday, can accommodate only those who have sets and telephones in their homes. The NetActive Mindset programme already cited in this research is expected to reach a few learners in the North- West, but often the wait is too long in the rural areas, and that is why the UNW has to take charge. It is therefore also recommended that this project be diverted to benefit first of all the ABET learners in the distance education programme. The partnership between the providers of NetActive and the UNW is crucial to the ABET intervention model suggested in this study. Already the Mayor of Potchefstroom, Mr. Satish Roopa, has challenged other mayors to sponsor their schools in this programme (ReadRight Supplement, Sunday Times, 14th September, 2003), having sponsored schools in the Potchefstroom mayoral district.

Because the *Umsobomvu Youth Fund*, another presidential initiative, has had a few successes with youth development projects, among which is the SITA (Sector Information and Technology Training Authority) project, which is helping graduates to increase the country's Information and Technology capacity, this organisation needs to partner with the UNW to assist those who would participate in the ABET project suggested in this thesis. The school-to-work programme at *Umsobomvu* and the community youth service can become part of the big partnership, for the sake of the ABET learners targeted by this study.

Because public-private partnerships have been recommended for South Africa's transformation, and because education is an expensive commodity, the financial and multinational institutions of this country are often invited to sponsor youth programmes. The public enterprises of this country, e.g. Transnet, which have shown their commitment supporting good projects are relevant partners in a project model that promotes partnerships. The partners are expected to become part of the strategy to sustain the project model, through funding, advice and other partnership strategies.

It is therefore recommended that a pilot project be set up, which will isolate a few ABET learners from the remote rural and other disadvantaged areas to participate in the technology-enhanced distance education programme envisaged for the North-West province, after all systems have been put in place.

In summary, it is important to highlight the most important recommendations that will get the model to take shape. Towards a technology-enhanced distance education strategy for rural and disadvantaged ABET grade 12 learners in the North-West Province the following processes must be in place:

3.1. The University embarks on an audit of computer literate members within the Faculty of Education in preparation for the technology-enhanced ABET distance learning project, as well as the most enthusiastic subject experts to help write the print notes for the ABET grade 12 learning targets.

3.2. Funding strategies to begin to emerge from preliminary meetings.

3.3. Policy frameworks and prioritisation should be engaged in as soon as possible, and expert consultants to be sourced in from within, in order to defray costs.

3.4. It is finally recommended that the findings of this study, and the model that emerged from it be further put to scrutiny and action research by the authorities of this university, and to finally land on the desk of the North- West Provincial Department of Education and the National Department of Education for consideration and action.

It is also important to emphasise the fundamental issues in support of the model.

Already named is the issue of joint ownership (or joint space), which calls on all relevant stakeholders and militates against negative power relations in the venture to educate the less privileged. McGeevor and Murray (1993) see the relationship between higher education and the labour market as that of joint ownership and not as the domain of one with funding power. Another fundamental area that has to be emphasised is that of redress, where indeed the less privileged must enjoy privileges in the new political dispensation. This means that the developing sector of the South African population has to be as innovative as possible (Lewin and Stuart, 1991) in fostering the values of collaborative learning and teaching.

At the time that this research was being concluded, yet another article had surfaced in The Mail newspaper about problems of corruption faced by ABET in the province (The Mail, 12th September, 2003). What is clear at this stage is that the authorities and all

relevant stakeholders have not thought about open learning systems for ABET and about the use of relevant technologies, in collaborative action, to solve the problems of the underprivileged. Meanwhile, the problems at the grade 11 and 12 levels are piling up, and the province stands to deal with serious problems of illiteracy and unemployment in the near future.

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APPENDICES

**Appendix A
SURVEY QUESTIONNAIRE**

RESPONDENTS: ABET LEARNERS

The questionnaire below is part of the main questionnaire designed to get information about the grade12 ABET classes in the rural and other historically disadvantaged areas of the NorthWest. It is also intended to get information about the situation in disadvantaged areas of the North West, as well as to solicit your opinion and your co-operation in the exploration of a technology-enhanced distance education solution to the problems facing the less privileged out-of-school (grade 12) learners and their employed adult learner counterparts who live in the remote rural and other disadvantaged settlements within the province

You are requested to respond to the questions to the best of your ability. Do not write your name anywhere. Your responses will not be used anywhere except in the application of this research.

SECTION A

DEMOGRAPHIC DATA

PLEASE TICK WHERE APPLICABLE

- 1) GENDER: MALE..... FEMALE.....
- 2) ARE YOU AN ABET LEARNER PREPARING FOR MATRICULATION?
 YES NO....
- 3) ARE YOU EMPLOYED?
 YES NO....
- 4) IF EMPLOYED, WHAT IS YOUR OCCUPATION?
.....
- 5) HOW MANY TIMES HAVE YOU ATTEMPTED THE MATRICULATION
EXAMINATION?
- 6) AGE (TICK APPLICABLE RANGE)

 - BETWEEN 18 AND 22.....
 - BETWEEN 23 AND 27.....
 - BETWEEN 28 AND 32.....
 - BETWEEN 33 AND 37.....
 - ABOVE 37
- 7) WHERE DO YOU RESIDE?(E.G. MAFIKENG CITY)
.....

THANK YOU, GO TO NEXT PAGE.

SECTION A

SITUATIONAL ANALYSIS OF MATRIC (ABET) LEARNERS)

1.QUESTION 1

MAIN QUESTION

What are the common problems experienced by the target learners(drop-out grade 12 learners, employed adult learners) identified for this study?

Out-of-school youth of school -going age and employed adult learners have unique problems in their own geographical areas. These need to be spelt out so that a solution is found. To answer the general question above, you are requested to respond to the following sub-questions below

What is the problem for ABET school learners in your area? ABET school learners in your area?

	SUBQUESTION	YES	NO
1.	Dark nights		
2.	Far-away schools		
3.	No educators		
4.	Educators often absent		
5.	Classrooms not electrified		
6.	Poor buildings		
7.	No books		
8.	Poor chalkboards		
9.	Dangerous roads to school		
10	Lack of Transport		
11.	Any other problems ? If yes, use separate page to write them down.		

2. QUESTION 2

MAIN QUESTION

Is the number of problems experienced by out-of school youth and adult learners attending "night school" in the rural areas of the NW Province significant enough to warrant intervention through intensive and extensive assistance to these historically disadvantaged learners? To answer the question above, you are requested to respond to the following sub-questions:

What is the ABET situation in your area?

Kindly respond to the following subquestions

	QUESTION	YES	NO
1.	High failure rate?		
2.	High dropout rate?		
3.	Shortage of tutors /educators?		
4.	Many cannot access classes in winter?		
5.	Many need assistance with grade 12 classes.		
6.	There is no help for matric dropouts.		
7.	The rate of learner absenteeism is too high.		
8.	Adult educators are often absent.		
9.	There are no teaching aids?		
10.	Classroom windows are broken?		
11.	Any other comments from you? Use the separate page provided.		

QUESTION 3**MAIN QUESTION**

What made you enter the ABET class for your matric examination preparation?

Select **YES** OR **NO** and tick next to each one of the reasons below.

No.	Subquestion	YES	NO
1.	No space for repeaters in the day school.		
2.	Tied of strict school rules.		
3.	Too old to attend school.		
4.	Employed.		
5.	Are you a grade 12 repeater?		
6.	Do you attend ABET classes during the day?		
7.	Do you attend your classes at night?		
8.	Did you have problems with your subjects last year?		
9.	Are you happier in the ABET school than at day school?		
10.	Do you experience many problems in the ABET school?		
11.	Do you have better teachers at ABET school?		
12.	Is there something else you want to tell about your problems in your ABET centre? If YES, then use the separate sheet provided to tell your story. -----		

QUESTION 4

If the university were to offer home study (distance education) classes to your ABET grade 12 classes in your district/learning site, would you....(tick YES or NO next to your preference)

	SUBQUESTION	YES	NO
1.	Have lecture notes delivered to your school		
2.	Fetch your notes from the university		
3.	Ask ABET tutors to work with the university		
4.	Have everything done by the university		
5.	Is your community center safe for delivery of notes?		
6.	Any other comment you want to make? A separate sheet is provided for your comments.		

THANK YOU, THIS IS ALL

Appendix B

The questionnaire below is designed as part of the main survey to solicit information (directly and indirectly) about the situation in disadvantaged rural North West areas and to solicit your opinion regarding the situation, as well as your co-operation towards finding a technology-enhanced solution to the general problem facing these less privileged out-of-school (grade 12 learners and their employed adult counterparts who do not have access to the traditional ABET class and live in remote rural and other disadvantaged settlements in the province.

You are requested to respond to the questions to the best of your ability. Do not write your name anywhere. Your responses will not be used anywhere except in the application of this research.

DEMOGRAPHIC DATA

PLEASE TICK WHERE APPLICABLE

1. GENDER MALE..... FEMALE

2. ARE YOU A STUDENT AT THE UNIVERSITY OF NORTH WEST? YES...NO...

3. ARE YOU A LECTURER AT THE UNIVERSITY OF NORTH WEST?
YES..... NO.....

4. IF NOT A LECTURER, WHAT IS YOUR DESIGNATION?.....

5. AGE (TICK APPLICABLE RANGE)
 - BETWEEN 18 AND 22
 - BETWEEN 23 AND 27
 - BETWEEN 28 AND 32
 - BETWEEN 33 AND 37
 - ABOVE 37.....

6. WHERE DO YOU RESIDE? (E.G. MAFIKENG)

THANK YOU, PROCEED TO NEXT PAGE

QUESTION 1

If the university were to assist the less disadvantaged ABET matric learners with distance education classes, would you readily opt for.....(TICK YES OR NO)

	SUBQUESTION	YES	NO
1.	Training of local educators.		
2.	Tutorials sent to learners		
3.	Classes held at campus during vacation		
4.	Video lessons for learners		
5.	Tutorial assistance by final year students		
6.	Recorded audiocassette lessons		
7.	Distance learning packaged notes		
8.	Radio lessons		
9.	Saturday classes for the project		
10.	Computer-based lessons		

THANK YOU, PROCEED TO NEXT PAGE

QUESTION 2A

How ready is the university to accept this social responsibility and how much capacity has it to offer assistance towards these underprivileged youth?

	SUBQUESTIONS	YES	NO
1.	Does the UNW have the capacity for distance training of ABET grade12		
2.	Can lecturers be assisted with design of learning packages to learners?		
3.	Would the lecturers offer Saturday classes to learners?		
4.	Would distribution of notes be a problem?		
5.	Would distribution of tutorial notes cause any problem?		
6.	Can the university organize teleconference lessons		
7.	Can graduate and third year students be used?		
8.	Can local schools be persuaded to distribute notes?		
9.	Can lecture materials be distributed in post offices?		
10.	Are multipurpose centres suitable for distribution of notes?		
11.	Can television lessons be used?		
12.	Can technology partners be found?		
13.	Has the project the potential to succeed?		
14.	Do you believe that local schools can support the project?		
15.	Can existing ABET providers support the project?		
16.	Can local business be persuaded to help		
17.	Do you believe that government would co-operate?		
18.	Do you think that villages would be supportive?		
19.	Can the SRC be persuaded to assist?		
20.	Can the Youth Commission in the Province be persuaded to help?		

GO TO NEXT PAGE

QUESTION 2B

What would be the most cost-effective and practical technology to supplement DISTANCE EDUCATION notes? (please indicate your choices below by ticking next to choice and then give reasons in next column).

CHOICE OF TECHNOLOGY	REASON
i.video ii.e-learning, including web-based computer lessons iii. a combination of the three technologies iv.Any other	

QUESTION 2C

What are your thoughts regarding the use of electronic learning through computers for distance education of rural and other disadvantaged matric learners? (only two responses needed here, with reasons below)

	RESPONSE	YES	NO
A.1)	POSSIBLE		
B.2)	POSSIBLE BUT DIFFICULT		
C.3)	IMPOSSIBLE		
D.4)	HIGHLY RECOMMENDED		
E.5)	NOT RECOMMENDED		
F.6)	CAN BE SPONSORED		
G.7)	CAN BE SUPPORTED		
H.8)	LONG OVERDUE		

ANY OTHER COMMENT FROM YOU?

.....

NEXT PAGE ...

QUESTION 3

What relevant, most suitable, most acceptable and cost-effective technologies can the UNW use for the development of a technology-enhanced system of distance learning provision for these identified youth?

If the University of NorthWest were to assist with distance education classes would you opt for?

	SUBQUESTIONS	YES	NO
1.	Training of educators in distance education?		
2.	Correspondence lessons sent to ABET schools?		
3.	Tutorial notes made at the university?		
4.	Vacation classes for ABET learners?		
5.	Video lessons for ABET learners?		
6.	Visiting lecturers on Saturdays?		
7.	Graduate student assistants tutoring?		
8.	Recorded audiocassette lessons		
9.	Full-time Saturday classes?		
10.	Packaged distance learning notes?		
11.	Collaboration with Institute/Faculty of Education?		
12.	Joint venture with experienced high school ABET educators?		
13.	Computer-based lessons /collaboration with computer company?		
14.	Utilisation of SABC television lessons?		
15.	Any other comment?		

COMMENTS

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NEXT PAGE...

QUESTION 4

How ready are the schools and the education fraternity , including the department of education and other relevant structures to support the move to establish technology-supported learning and dissemination centres for ABET learners in the disadvantaged and rural areas of the North West Province.

	SUBQUESTIONS	YES	NO
1.	Newly built schools for project.		
2.	The department of education can support the project.		
3.	The SABC can support the move.		
4.	The “Liberty Life” company can support the move.		
5.	Local schools can support the move.		
6.	The UNW has resources for the model.		
7.	Any technology company can support the model.		
8.	The vacation school model can be supported by all.		
9.	Some NGO’s can support the move.		
10	Any other ideas or comments from you? Use space provided.		

IDEAS OR COMMENTS

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THANK YOU, THIS IS ALL.

INTERVIEW SCHEDULE

1. Can the idea of collaboration be supported?
2. Can the university of North West be leader in ABET matric support?
3. Can rural communities be made viable and sustainable mentors of technology-based education projects for matric dropouts?
4. Can the university-led, community supported project of technology-enhanced distance education provision be supported by the department of education?
5. Can TELKOM support the move? (Or any other company?)
6. Can technology experts support the move?
7. Can the project be implemented soon?
8. What are the problems that need to be solved first?
9. Any other suggestions /comments?
10. Do you wish to ask me any questions regarding this issue?

THANK YOU, THIS IS ALL.

