

**TELEMATIC TUITION IN A SOUTH AFRICAN HIGHER
EDUCATION INSTITUTION: A CASE STUDY**

by

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DECLARATION

“I declare that the Dissertation hereby submitted to the University of the North for the degree of MASTER OF EDUCATION has not previously been submitted by me for a degree at this or any other university, that it is My own design and in execution, and that all material Contained therein has been duly acknowledged.”

Signature: 

MAPULA MARTHA MALATJI

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ABSTRACT

This study portrays the effectiveness of telematic tuition in a South African higher education institution. Technikon Free State is used as a case study. One of the key challenges in higher education institutions is that, old problems in teaching and learning are worsening, and new ones are surfacing. In this study, a number of factors contributing to quality improvement were looked at, such as: the learning styles, teaching-learning theories, and the principles of communication. As long as the lack of culture of constructive teaching and learning culture is allowed to continue, particularly in telematic tuition, lifelong learning will not contribute significantly towards the education system.

The respondents who participated in this study are learners and lecturers who were randomly selected from Technikon Free State. They were found to have succeeded in demonstrating that the success of telematic tuition in higher education institutions rests on the co-operation among the learners and the lecturers, so that higher standards of performance are produced.

The examination of some teaching - learning theories articulates the underlying ways and means of developing telematic tuition in higher education institutions. It has been realised that flexible access, flexible participation, flexible teaching methods and flexible resources are brought to light once the explored theories are understood.

In the compilation of questionnaires, it was borne in mind that the learners and lecturers might be experiencing problems related to computer literacy. The response to such questions highlighted that training in telematic tuition is a priority, not only at the beginning of the year, but also continuous exposure to computers is necessary.

The results further identified the most preferred learning styles of the learners when writing assignments and preparing for their examinations. The aim was to investigate and gauge the expectations of both the learners and the lecturers at the employment of telematic tuition. That being the case, it is the lecturers who can assist the learners to change towards helpful and progressive learning styles. In line with the fundamental modes employed in telematic tuition, that is; contact mode, paper-base and interactive television teaching, greater need of balance of usage so that some of the learning styles like deep approach, are seen to be working.

This study therefore, concludes by recommending that telematic tuition is a step on the way to establishing the trend of activities taking place in the teaching and learning environment.

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CHAPTER ONE

GENERAL ORIENTATION

1.1 BACKGROUND TO THE STUDY

The world is obsessed with information, including the higher educational institutions in South Africa. Since the on-campus tuition is riddled with the atmosphere of uncertainties due to political movements, the fees rocketing every year, the unstable status of the economy in the country, redeployment and retrenchment of workers, just to name a few, great numbers of students opt to learn through distance education. To this fact, Lyons (1992:51) is of the opinion that education in South Africa needs reform.

Apart from striving for quality information, the challenge is the access, distribution and delivery. Law (1999:17) opines that quality of knowledge delivery, DILE (Distributed Intelligent Learning Environment), matches that of a professional teacher because domain issues, teaching strategy, and also the student's knowledge are all taken into account. For example, the students in rural, semi-urban and those in the urban areas, to an extent, miss the opportunity to have access on quality information in time. It is therefore important to heed the words of Morad (1990:51) that inequality of access to the new technologies is also a significant problem that must be addressed as we move forward in the use of IT...

That being the situation, distance and open learning, however, is not a new concept in South African education. If distance teaching universities are regarded as open universities, the oldest university, is the University of South Africa (UNISA), which started

teaching at a distance in 1946 (Holmberg, 1989:24-28). Arguably, their long period of practice in distance and open education is often frequented by the negative experiences of dropouts and non-starters. Baath (1984:32) contends that when non-starters ... are included among non-completers, dropout rates around 50 percent are not unusual ... Non-starters are sometimes as frequent than 'real' dropouts. This phenomenon appears to persist over time, despite numerous attempts to investigate and solve the problems of teaching and learning. One is likely to cast doubt on the prevailing practices of teaching strategies, and the lack of insufficient resources. With the Historically Disadvantaged Universities (HDU'S) like the University of the North, Venda, North West, Transkei, Fort Hare and Zululand, which are currently experiencing the dramatic decline in student numbers, it is felt that the options are open to employ telematic tuition in teaching and learning, for its potential lies in the flexible educational environments an interactive supportive systems for students and lecturers. This innovation is about Interactive Television Teaching (ITT), Internet, E-mail, Computer-Aided-Instruction (CAI), Tutor Support Centres, Paper-based correspondence and Telecommunications. In simple terms, it is Package Learning and Teaching to solve the old problem of the sole dependence on print and postal services. Invariably, Eraut (1989) as quoted by Plomp and Ely (1996:5), charges that the conceptual frameworks evolved during the 1960's still inform what is taught as educational technology in the 1990's. This idea can be extended and framed as: conceptual frameworks that evolved in the 1960's still inform what is taught as educational technology in the new millennium. Oberholster (1992:43) contends that 'Die wêreld van die volgende eeu gaan groot eise aan die mens stel, veral in die beroepswêreld waar ernstige probleme opgelos sal moet word'.

The centralist approach to teaching as observed at on-campus teaching and learning, depicts the student as inferior with less knowledge, and the lecturer with more knowledge. In this sense, the mercy of the student rests wholly on the lecturer, instead of both moving along together and informing one another to affect the quality of experience, the attitudes and motivational levels. Cotton (1995:44) rejects the centralist approach, and terms it authoritarian – the traditional organization with a teacher firmly in charge ... Passive

learners who are expected to do what they are told to do. Moore (1994:1-5) has realized that in traditional school settings, learners are very dependent on teachers for guidance, and that in most programs, conventional and distance, the teacher is active while the learner is passive. Besides the approach accomplishing the mission of listening school, its traditional format of teaching and learning is exhaustive, and divorces the visions of curriculum 2005 before marriage.

Normally, people fear what they do not know (Generalized Anxiety Disorder). This anxiety disorder makes them to have experiences of oscillation between comfort and discomfort. Sue, Sue and Sue (1997:195) explain that this disorder is characterized by persistent high levels of anxiety in situations where no danger is present. In educational interpretation, this fear can be regarded as the beginning of cognition which is closely related to an anticipation to have a pleasant, interesting event in teaching and learning. Having said that, it is an undeniable fact that most of the teachers/lecturers are no products of telematic teaching. They therefore seem to be reluctant or resist to accept change. Some still believe that technology is industrially based. To accept it, is to replace the teacher/lecturer, little knowing that educational technological equipments supplement or assist. Chaptal (1997:12) highlights that the abilities of teachers should be enhanced. This highlight brings the understanding that distance and open education depends on the flexibility of the teacher/lecturer, as well as the appropriate and relevant use of technological equipments. Otherwise, teaching and learning at a distance will either remain grounded or crash from the take off. For that matter, Eraut (189), as cited by Plomp and Ely (1996:15), asserts that it makes little sense to design machines without thinking about their human operators, and also makes little sense to create human jobs without considering whether some tasks can be delegated to machines than others.

The machines talked about can be understood as a set of planned procedures in which man and machines' capabilities are used in an integrated manner to achieve results man

could not achieve. The attitudes are actually short-term emotions which do not last. Burton (1992:24) points out that, the importance of our attitude towards information technology lies not simply in how we interpret the changes it brings about, but also in our attitude to the technology itself. With the right attitude, we need to be intimidated by IT, but can choose where it will take us – Indeed, it will take us, will adopt it to bring about desired aims and objectives.

According to Simonson (1999:4), in 1995 it was stated that ‘no one really wants to learn at a distance, but ... everyone demands the opportunity to learn at a distance.’ Since most of the students who normally study through distance and open education are adults, employees, employers, the redeployed and the retrenched, any little or no progress experienced in their studies, does not meet their demands, but causes demotivation. Telematic tuition in distance and open education fights demotivation tooth and nail, and relieves the students from the clothes that pinch. It is motivation above all else which, despite physical and general social environmental problems, brings success (Sewart, 1998:168).

1.2 KEY QUESTIONS TO BE ANSWERED

With the foregoing background still in mind, it would seem much of the life threatening problems are centred around education in general, particularly how effective teaching and learning in distance and open education can be done, regarding the use of technological equipments, hence the following key questions to be asked:

- 1.2.1 What is perceived to be the effective role played by distance and open education in South Africa?

- 1.2.2 What is the current state of affairs on distance and telematic tuition in South Africa?
- 1.2.3 What role can telematic tuition play in distance and open education at higher institutions of education?
- 1.2.4 How can the learners in distance and open education be assisted so that they do not become isolated learners and develop the skills of negotiating the information resources available to them?
- 1.2.5 Can telematic tuition be a solution towards effective teaching and learning?

1.3 AIM OF THE STUDY

The study examines the effectiveness of telematic tuition at higher institutions of education in South Africa, and attempts to fathom some factors which may give attention, action and reaction towards the improved methods of teaching and learning. Therefore, the aim of the study is:

- To outline a clear understanding of the role played by distance and open education at higher institutions of learning.
- To investigate the current state of affairs on distance and telematic tuition in South Africa.
- To examine the role telematic tuition plays in distance and open education at higher institutions of education.

- To establish the extent of the need to train teachers/lecturers in the use of telematic tuition for effective distance and open education.
- To find out whether telematic tuition can be a solution towards effective teaching.

1.4 SIGNIFICANCE OF THE STUDY

The researcher is hopeful that on the increase of telematic tuition in distance and open education, teaching ways will improve, and the following will apply:

- The significance that telematic tuition in education promotes effective communication in teaching and learning. Lecturers need to realize their importance as encoders of messages, and their ability to address the deep-rooted problems they experience in teaching.
- The study is also important for better understanding of telematic tuition. This understanding will enhance the relationship that is expected to grow and continue to exist between students themselves, student and tutor, student and learning material.
- The study could also inform the authorities in distance and open learning to develop and apply appropriate administration to ensure minimum stressful teaching and learning, and make distance education, a study destination.

- This study is significant in the sense that it is problem solving of the reluctant, non-starters and dropout students in the teaching and learning field. The findings will hopefully identify weaknesses in the pre-entry educational backgrounds which may explain the observed failure rates. Such knowledge will be helpful in guiding lecturers and teachers in their designing of suitable courses and instructional methods that will improve teaching-learning processes.

1.5 RESEARCH APPROACH

Research approach is defined differently by different authors as follows:

- Gary (2000:3), research approach is the systematic application of a family of methods that are employed to provide trustworthy information about problems. He goes further to explain research as an ongoing process, based on many accumulated understandings and explanations that, when taken together, lead to generalizations about educational issues and ultimately, to the development of theories.
- Anderson (1998:6) is of the opinion that research in education is a disciplined attempt to address the question or solve problems through the collection and analysis of primary data for the purpose of description, explanation, generalization and prediction.
- Cohen and Manion (1997:10) citing Mouly (1978), agree that research is best conceived as the process of arriving at dependable solutions to problems through the planned and systematic collection, analysis, and interpretation of data. It is a most important tool for advancing knowledge, for promoting

progress, and for enabling man to relate more effectively to his environment, to accomplish his purposes, and to resolve his conflicts.

The preceding definitions have important implications for researchers, that there is a continued interest in using a diversity of methods, depending on the type of the problem. The definitions also bring the understanding that educational problems have been there before, for as long as man educates, and is educative. Researchers are therefore advised to read widely to ascertain what has been researched and to keep abreast of problems stemming from the previous research.

1.5.1 Qualitative research

This is a research method based on the notion of the sensitivity of the context. It constitutes an interpretative effort. It is believed that the physical and social environment in which people find themselves has a great bearing on what they think and how they act. In this study, the quality of technological equipments used in teaching and learning will be given attention. According to Grant and Fine (1992 : 405-446), qualitative research method is flexible and typically evolves contextually in response to the lived realities encountered in the field setting.

1.5.2 Quantitative research

Quantitative method of research will be used to gather data from both learners and lecturers. Its combination with qualitative method of research will strengthen the research findings.

The nature of this study about the effective use of telematic tuition at higher institutions of education, agrees to the employment of a case study, so that research leads to new research, and solving one problem may lead to the discovery of numerous others. This explanation leads itself to:

1.5.3 Case study

Yin (1994:13) gives two part technical definitions of case study as follows:

1. A case study is an empirical inquiry that:

- investigates a contemporary phenomenon within its real-life context, especially when
- the boundaries between phenomenon and context are not clearly evident.

2. The case study inquiry

- copes with the technically distinctive situation in which there will be many more variables of interest than data points, as one result.
- relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as another result.

- benefits from the prior development of theoretical propositions to guide data collection and analysis.

The understanding the case study method probes deeply, and analyses intensively the interaction between factors that produce change or growth. The aim of case study in this research is to gain a better understanding of telematic tuition at higher institutions of education.

1.5.4 Sample

The Telematic division of the Technikon Free State will constitute the cases. The reason for the selection of this institution is the record of its past participation in telematic tuition. Both students and lecturing staff will be considered for the study.

1.5.5 Collection of data

The information required for the whole study will be collected through literature review and questionnaires.

1.5.5.1 Literature review

Research is not conducted in a vacuum. It is therefore important for every researcher to spend time reading the topics that other researchers have written about concerning the topic of his/her own interest. The time spent and the knowledge gained will help the

researcher not to repeat other people's mistakes or maybe fall into plagiarism. Library catalogues, newspapers and educational journals will be read to obtain recent and valuable information. Special attention will be given to articles in Educational Media, Information Technology, Higher education and Educational technology.

For this study, literature review will help to identify the problems encountered in some research proposals concerning distance and open education, as well as to increase human knowledge that every contribution builds.

It is through literature review that the light is shared about the establishment of several study centres (satellites) which are spread throughout South Africa, with print and postal services as other means of communication, in an attempt to reach the students at remote places. While these attempts cannot go unnoticed, lack of effective teaching and learning through telematic teaching makes distance learning more distant. Patterson (1999:20) contends that interactive classroom bridges rather than creates distances to enhance both teaching and learning.

1.5.5.2 Questionnaires

Questionnaires will be formulated in such a way that both learners and lecturers would not experience difficulties. This means that the language used would be simple.

1.6 DEFINITION OF CONCEPTS

For the sake of clarity, some of the concepts in this study deserve to be defined. To avoid confusion that often exists about what certain concepts mean, Jones (1989:9) alerts

that terminology is the dragon at simulation gate. The same applies to the various meanings available concerning the concepts: telematic tuition; distance education; open teaching and learning; effective teaching; effective learning and educational technology.

1.6.1 Telematic tuition

Telematic tuition is a scientific strategy employed to take the educational services to the remote located learners throughout the country and the world, breaking the cultural boundaries, so that distance is taken out of distance education. The students are empowered academically, technologically and socially. This package-based eye-catcher at higher education institutions, is able to keep them in the system. The assurance is made by Papo (1998:11) that the potential of new technologies that have been developed to support greater teacher effectiveness has increased.

Telematic tuition as flexi-learning philosophy, can be equated to co-operative learning which is an organizational structure in which a group of students pursue academic goals through collaborative strengths, and assist each other in completing the task. This method encourages supportive relationships, good communication skills and higher – level thinking (Hilke, 1990:8).

Telematic tuition concerns vertical digging and horizontal casting from related and opposing information from one or more sources. When this happens, the students get provoked and become active team members. This activity can be referred to as ‘information superhighway’ in the sense that the students become very busy, with frequent visits, and free to exit at any time.

Telematic tuition is based on the premise that students are at the centre of the learning process, take responsibility for their own learning, and work at their own pace and place. It therefore includes the whole spectrum of educational modes as illustrated in the following brief examples:

- Paper-base correspondence

Verduin and Clark (1991:86) emphasize that currently, print media remain the backbone of distance education and are often used in combination with other media. This is a step where text books are prescribed, study guides and tutorials posted. There is communication through assignments, key answers to the questions as well as the progress report.

Since many distance education students have little time for class, less time for studies and definitely no time to waste, CAI accommodates learners through WWW (World Wide Web) to create a meaningful learning environment where learning is fostered and supported (Khan, 1998:63-71).

There are e-mail facilities to make the course more transparent. This shared, filtered environment gives information to all the users irrespective of their locations, age, ethnicity, gender and physical limitations.

- Study centres

Study centres could be the home, work environment, main campus, satellites and learning group centres. Per appointment, the students are open to meet their lecturers telephonically or by letter writing. There is also tutor support at different satellite points.

These can be summed up by telecommunications, a meaning which includes all services, products, media and methodologies used to deliver information electronically, from a simple telephone to sophisticated fibre-optic networks (Charp and Hines, 1998:94).

1.6.2 Distance education

The following definitions are noted:

Holmberg (1989:3) asserts that the term distance education covers various forms of study at all levels which are not under continuous, immediate supervision of tutors present with their students in lecture rooms or on the same premises but which, nevertheless, benefit from planning, guidance and teaching of a supporting organization. He further explains that teaching and learning by correspondence is the origin of what is today called distance education ... Correspondence education is taken to denote teaching in writing, by means of so called self instructional texts, combined with communication in writing, that is, correspondence between students and tutors.

A short definition of distance education might be 'any formal approach to learning in which a majority of the instruction occurs while educator and learners are of a distance from one another' (Verduin and Clark, 1991:32). The same sentiments are shared by Offir and Lev (1999:32) that distance learning is a kind of teaching method in which the teacher and the students (learners) are separated from each other by place and/ or time. In the same vein, Roberts, Blakeslee, Brown and Lenk (1990:193) believe that the use of

telecommunications offer instruction to students removed geographically 'or in class' at different times, or both, is known as distance education.

What do all the preceding definitions entail? They all emphasize the physical distance which is marked by the absence of the teacher/lecturer when teaching takes place. What immediately crops into mind is that the referred distance is geographical, and can send wrong messages by creating a psychological gap amongst prospective students.

Nonetheless, Bates' (1996:485) clarification has a bearing on the concept of distance education by reflecting on the first generation development of distance education which is characterised by the predominant use of a single technology, namely correspondence by mail, subsequently radio, then television. He goes further to state that there is a lack of direct student interaction with the teacher originating the instruction. Whereas, the statement is true, it however, has the connotation of the geographical distance. Other than the prescription, it is necessary to mention that the implementation of telematic tuition in distance education, nullifies the geographical distance by opening several ways of communication in between the students and the student-tutor at any time and place. Therefore, the acceptance of the word distance, finds its dictionary meaning when it distinguishes the ways of teaching at on-campus and off-campus. To these facts, Patterson (1999:20) poses a question that, "Distance learning: A misnomer?" The impact of the question challenges or suggests to have a constant revision on what actually distance education is or not, for there is a great deal of excitement in education today in the search for new ways to teach and learn, using the increasingly easy access to information provided by electronic works.

For not arriving at a conclusive definition of distance education, facts can be attributed to its nature that it is a complex phenomenon which encompasses the stakeholders (tutors and students) of not the same location, time, relative and constructive technology as well

as weight of the content. Having said that, telematic tuition would be comfortable with the definition that distance education is any course delivered with tools or technologies designed to overcome restrictions of either same-time or same place learning, (Daniel, 1997:29). Indeed, distance education is a form of independent study designed to make study accessible for those students who cannot attend classes on campus at regularly scheduled times during the day or evening (Niagara College site, 1997: [online]. The reason behind the support is that telematic tuition for the distanced students of higher institutions, bridges the distance and time and builds new horizons by way of immediate reinforcements and feedback. Katz (2000:25-30) advocates that distance learning methods which offer the highest levels of social (video-conferencing) are considered by students to be more satisfactory, and lead to higher levels of attainment.

1.6.3 Open teaching and learning

The word 'open' is in vogue in South Africa's institutions of higher education today. It is understood as the avoidance of the avoidable restrictions. It, however, ought not to be misinterpreted as lawlessness in teaching and learning, but would rather suggest that learners take responsibility for their own learning, hence the stand taken by Rowntree (1992:13) that open learning involves reducing barriers to access and giving learners more control over their own learning.

Openness in teaching and learning is realized when higher educational institutions are open with respect of place, time, content and the mode of delivery (Dewal, 1986:8). In this sense, telematic tuition finds its actual interpretation. Open learning is realized in open teaching. They both amount to deep education structure which suggests efficiency and effectiveness of the proper use of learning materials, and willingness from the participants.

The challenge that we face at the dawn of a democratic society is to create an education and training system that ensures people are able to realize the full potential in our society, as a prerequisite for the successful achievement of all others ... (A.N.C : 1994, RDP par. 3.1:59). This perception does not exclude distance education mode of learning, and therefore draws the attention to the recent flood of advertisements in media that many institutions of higher education offer 'open teaching and learning'. Whereas change is unavoidable, a question arises as to 'how open is open teaching and learning?' From the telematic tuition point of view, a comprehensive analysis would seek to answer the questions '*Who can learn? What can they learn? How can they learn?*'

Open teaching and learning addresses a question of culture. Lest South Africa's institutions of higher education forget that they emerge from an era in which many cultures were neglected, distorted or kept to oneself. The learning content contains culture which is realized in open teaching. But, teaching and learning that is frequently regarded as knowledge transfer from one teaching vessel to another, or the one which means the delivery of lecture ... (Lockwood, 1995:26), does not open up the channels to learn about other people's cultures, but encourages the students to lag and limper behind the drive to enculturation. It is within the spirit of telematic tuition in distance that the multi-coloured cloth of cultures is weaved, so that teaching and learning becomes open.

On the whole, open teaching and learning seeks to provide students with much choice and control as possible over content and learning strategies (Foks, 1987:76).

1.6.4 Effective teaching

Effective teaching is a co-operative matter and not merely an accidental social gathering of a teacher and a student. This is because among the educational problems that beset

South Africa's institutions of higher education today, none is as compelling as having teachers/lecturers who are competent.

A teacher/lecturer is said to be effective if what is encoded becomes meaningfully decoded by the students. It implies that the students must be able to interpret the message and respond by throwing back the challenging questions to the teacher, so that he (the teacher) either applies other methods and techniques in his teaching, until the students become the owner of the information.

Teaching is aided by the suitability of teaching media for effectiveness, and not because media happen to be available. With regard to distance education, which caters for students who are indirectly interacting with the tutor, effective teaching depends largely on quality interactive learning materials and assessment.

When teaching ceases to be effective or educative teaching of the students to enable them to accept their due responsibilities, it has no pedagogic justification, and in fact has departed altogether from the field of educational technology.

1.6.5 Effective learning

According to Verduin and Clark (1991:24), learning is signified by a change in behaviour or a movement from one state of behaviour to another through the acquisition of new knowledge or skills for personal use. This behaviour is an affective response observed in terms of answering questions, either verbally or in writing. In distance education, the students communicate verbally in group discussions and writing assignments. The

knowledge gained compels them to seek more information and shift from the pole of 'I do not know' to the pole of 'I know'.

Effective learning takes place through interactivity. Interactivity needs not be looked at as simply as physical activity at the interface, but in terms of the cognitive interplay between internal and external representations that arise in different settings. This requires how the students read, abstract knowledge from a diagram and make connections between different elements of the display in a temporal sequence.

Effective learning as a process involving the acquisition, storage and application of knowledge, skills, ways of thinking resulting in the learner's behaviour, represents well the expectations of OBE (Outcomes Based Education). But if the necessary anchoring ideas are lacking and are not supplied, the result will be mechanical memorization and rote learning.

Effective learning acts as a mother body to describe a multi mode of education including contact and distance education. In essence, it is a philosophy of education, which refers to a student centred approach (pedocentric). Its success can be attributed to the evaluation methods used, the modes of teaching and learning and the appropriate use of time, space and pace. Johnstone (1986) as quoted by Huddle, Bradley and Gerrans (1992:11) notes that, for learning to be done efficiently, incoming material has to be operated on so that it is shaped, organized and tied efficiently to existing knowledge.

Within the concept of effectiveness, learning cannot be simply a matter of 'acquiring' knowledge, but is a constructive process that involves the negotiation of meaning, which assumes the participation of others (Seligmann, 1998:5-6). Seemingly, Hibbard (1998:1)

broadens the definition of learning to mean certain communications, collaboration between teacher and student, and performance support.

1.6.6 Educational technology

Thomas and Kobayashi (1987:1) commence by drawing the attention that there is no universally agreed upon definition of educational technology. Even those who specialise in this field as a professional pursuit have failed to concur on what exactly should be encompassed by the term.

Following the preceding reports, educational technology which emerges as a field of study and occupational category during the 1960's (Eraut, 1996:456), is a complex and critical issue. Thomas and Kobayshi (1987:1) have the explanation that it is a complex and integrated process involving people, procedures, ideas, devices and organizations for analyzing problems, devising, implementing, evaluating, and managing solutions to those problems involved in all aspects of learning ... Advocates of educational technology.

With the available definitions given, educational technology contains the ideas about technology **in** education and technology **of** education. The distinction between these ideas triggers the awareness that telematic tuition sounds louder with hardware and software (technology **in** education). Hardware is a tool like a computer or television which contains and stores the learning content or the stimuli. Upon its operation, the software or the information, stimulates the learner to respond. The kind of software dictates which hardware to use in teaching and learning. The modern hardware in distance education is able to dish out and serve multitudes of students timeously and evenly at different points of learning.

Indeed, technology **in** education is technical. It becomes the eye of the teachers/lecturers to view the scientific approaches to teaching and learning problems. These scientific approaches include the best ways of reducing the costs of technological equipments without affecting the quality of teaching, hence technology **of** education. At this stage, responsible decisions are taken, recommendations are made. These are based on a study of a particular system as a whole. This is a stage where an education technologist plays a major role in guiding and describing the practice, for he/she is able to attract resources and sponsorship to justify the academic status. The realization is that, technology **of** education depends on technology **in** education to put educational technology on its rightful place.

Educational technology suggests a breadth of impact that technology exerts in the future. On its analysis, constructive and relative educational technologies come to the fore. Constructive educational technology is problem and solution driven. The problems encountered in teaching and learning in distance education are analysed and decomposed into sub-problems until a solution comes to the surface. It focuses on the selection and evaluation of instructional instruments. Procedures and devices (relative educational technology) depend on how the instructional instruments are selected so that teaching and learning does not become an accidental event. In a lighter vein, procedures are methods or techniques. It therefore has to be stressed that the combination of constructive and relative educational technology can make the ordinary teacher/lecturer, to become that of superior performance. Reigeluth (1993:1) ascertains that educational technology equips one with the knowledge and competence for improving the educational process; knowledge and competence for using hardware and software.

1.7 SUMMARY

From this chapter, it is envisaged that the power of information revolution, characterized by technological equipments, demands high critical thinking from the teachers/lecturers so as to be the movers and shakers of education. Whatever the past successes of traditional modes of teaching, they are no longer adequate to meet the challenges of teaching and learning in this century.

This chapter has explored the lifelong learning process. Though being not a new concept, it has been seen as a risk, time consuming and a costly exercise. This is due to the lack or slow supply of modern educational technological equipments at higher institutions. If adequately supplied, these equipments, more often than not, are met with reluctance or under/illskilled teachers/lecturers, instead of being innovators who are prepared to take the risk to try out new ideas. This chapter explored that good communications infrastructures will promote the lifelong learning activities and offer a widening of catchment areas to include anyone who wishes to participate in distance education.

In conclusion, some questions are posed as springboards for whatever path people choose to improve their present situations:

- How might the efforts to bring about change in one's situation be uplifted – be it personal, institutional or social level?
- If the emphasis is on social change, to what cost can people deny the importance of their personal awareness as the basis for the changing behaviour and the functioning of higher education institutions in the direction of learning?

1.8 RESEARCH FRAMEWORK

Chapter one gives a background study and the aim of the problem. Related definitions of concepts are laid. Added, are the different methods which will be used to collect data.

Chapter two covers the area of distance education and lifelong learning. It will also give a glimpse on theoretical implications on teaching and learning. This chapter will spell out the advances and influences that technology has on the society to promote lifelong learning.

Chapter three explores linking teaching and learning in distance education at higher institutions of learning, with greater emphasis on telematic tuition system. The eyes will be fixed on teaching at a distance through telecommunications and networking systems. Also included, are different strategies for learning.

In chapter four, the development of empirical research design, results and discussion are given attention. This is where the research instruments are seen being administered in the field, and analysed by using Ms. Excel computer programme.

Chapter five is reserved for findings on how some higher education institutions go about implementing telematic tuition. It will also provide the recommendations and suggestions based on conclusions arrived at.

CHAPTER TWO

DISTANCE EDUCATION AND LIFELONG LEARNING

2.1 INTRODUCTION

The ongoing movement of individuals as learners from one mode of learning to another, for instance; from on-campus tuition to distance learning and visa versa, also from employment situation, back to training for second chance learning, suggests a growing need for individuals to improve and maintain their quality of life. This active interest reflects seemingly an understanding that participation in education and learning throughout life can benefit the society. This accent does not exclude the lecturers at higher institutions of education, that they need to stress to their charges the principle of awareness and think creatively about teaching and learning. With the support from the Department of Education, the creation of lifelong learning offices would minimise the constraints encountered in education, particularly distance education. The Department of National Education (DNE) (1995 : 21) envisages that the over-arching goal of policy must be to enable all individuals to value, have access to, and succeed in lifelong education and training of good quality.

The current outlook is that, as the enrolments at institutions of higher education are declining, the costs escalate. As the costs escalate, the quality of education either declines or minimally increases. With this fiscal crisis, those who are likely to benefit from such education are the wealthy. On the other hand, there are some obvious advantages as suggested by Lockwood (1995:88), such as being home-based and thereby eliminating to travel to a conventional institution which can be difficult for some students with a physical or sensory disability.

Following the preceding explanations, the concept of lifelong learning is advanced, and therefore becomes a means of survival in the learning society, Its definition and priority will be provided in this chapter, so that the word 'lifelong' is taken seriously. Efficiency and effectiveness in distance education is what each teacher / lecturer would like to be identified with. This will also be explored.

2.2 THE CONTEXT OF LIFELONG LEARNING

Distance education and lifelong learning are not clashing concepts, for the latter necessitates an individual to be aware of what is happening within his/her social, physical and technological environment. It is this environment which invites him/her to improve his/her educational standpoint, mostly through distance education.

Lifelong learning is a strategic process in which individuals are guided to work at what they want to learn, in interaction with others, within the context and framework of their situation. Given the fact that the 'wants' of different people differ, they however need to be guided. Garrison (1992:11) is of the opinion that while too little guidance can distort the educational process, too much direction can become indoctrination which could violate integrity of the education experience. To this end, guidance in education is given by the experts (teachers/lecturers) so that the intended goals are reached. The challenge, as Rogers (1992:11) states, remains to find the right balance between the discipline of what education is, and the freedom that it seeks to promote.

Several reports have been produced in the past about lifelong learning --- notably the 'No limit' report in the 1980's. According to Healy (1997:116), today the subject of lifelong learning increasingly occupies the centre stage of education policy ... Ministers accepted lifelong learning as the guiding principle for policy. It therefore firstly focuses on

knowledge which refers to giving meaning to information. Secondly, the focus is on empowerment (power is put in the hands of the individual to develop). The third focus is stimulation that gives a positive encouragement to make learning a pleasurable and rewarding experience. The fourth focus is on supportiveness which heralds the support of both learner and the lecturer, as well as the development of an infrastructure to satisfy the needs. Lastly, lifelong learning focuses on the continuous and available constant supply of learning opportunities for all who require it. Thus, learning communities can expand beyond a classroom, university or workplace organization to spread regionally, nationally or globally (Shrivastava, 1999 : 693).

Lifelong learning can be understood as the development of human potential through a continuously supportive process and empowers individuals to acquire knowledge, values, skills and understanding they will require through their life times. These are to be applied in confidence in all roles, circumstances and environments which emphasize both educational and social aspects.

Needless to say, education is going through some changes in favour of putting the focus on learning and the individual's responsibility to define and invest in it as a means of realising his/ her own potential. Despite the proliferation of international electronics networks used by institutions of higher education for a variety of collaborative activities, the vast difference between developed and undeveloped nations in the provision of distance learning tool, needs to be urgently and continuously addressed if lifelong learning is to be improved and continued.

In addition, the forms of delivery patterns in lifelong learning are changing significantly over the years. Even though the technological products are technologically-driven instead of learning-driven, they will strengthen the tendency to reproduce information

(Simonson, 1997:9). Lifelong learning can be promoted by the utilization of many methods. Huei-wen (1999:119) highlights the following points:

- Creating network allied activities.
- Promoting online learning passport activity; accumulate learning achievement.
- Integrating learning organizations and community centres to expand the network use population.
- Holding international conferences to share experiences and knowledge.
- Attending international lifelong learning organizations to share experience and knowledge.

2.3 PRINCIPLES FOR IMPLEMENTING DISTANCE EDUCATION

2.3.1 Principle of communication

The success of distance education depends largely on communication among and between the components, namely: the course instructor, the learner, technology and material. The aim is to shorten and balance the educational distance. This principle ensures meaningful individual contact at the individual's pace. The lecturer is able to group individual problems, diagnose them and arrive at one common problem. It goes without saying that the study group is an important element of the principle of individualization. This principle does not imply that group work is lost, because the group itself is made up of different individuals. Staude and Bekker (1996 : 149) also believe that communication is thus the oil that lubricates the various parts so that they can function smoothly. They further see communication as a four-way process – telling, asking, listening and understanding. 'Telling' involves keeping your customers informed on all aspects relating to them. 'Asking' is the action necessary to get the communication

process under way and asking for information. 'Listening' well is the best guarantee that one will receive and understand the messages directed to one's way. The main task in the communication process will be to create 'understanding' with all the learners. In keeping with distance education, the entire four-way process of communication is integrated within the concept of telematic teaching.

Anstey (1991 : 222) sees communication as a complex and changing continuous process to which each of the participants bring his/her own unique background of life experiences and consequent ideas, beliefs, intentions, feelings and behavioural predictions. Wheeler (2000 : 28) assert that communication is the lifeblood of a working relationship ... we can always find ways find ways to improve it ... but the simplest and powerful role of thumb is to consult the relationship partner. In this commitment, rests the prerequisites to improve communication between the sender and receiver of knowledge. These prerequisites are illustrated in the following diagram:

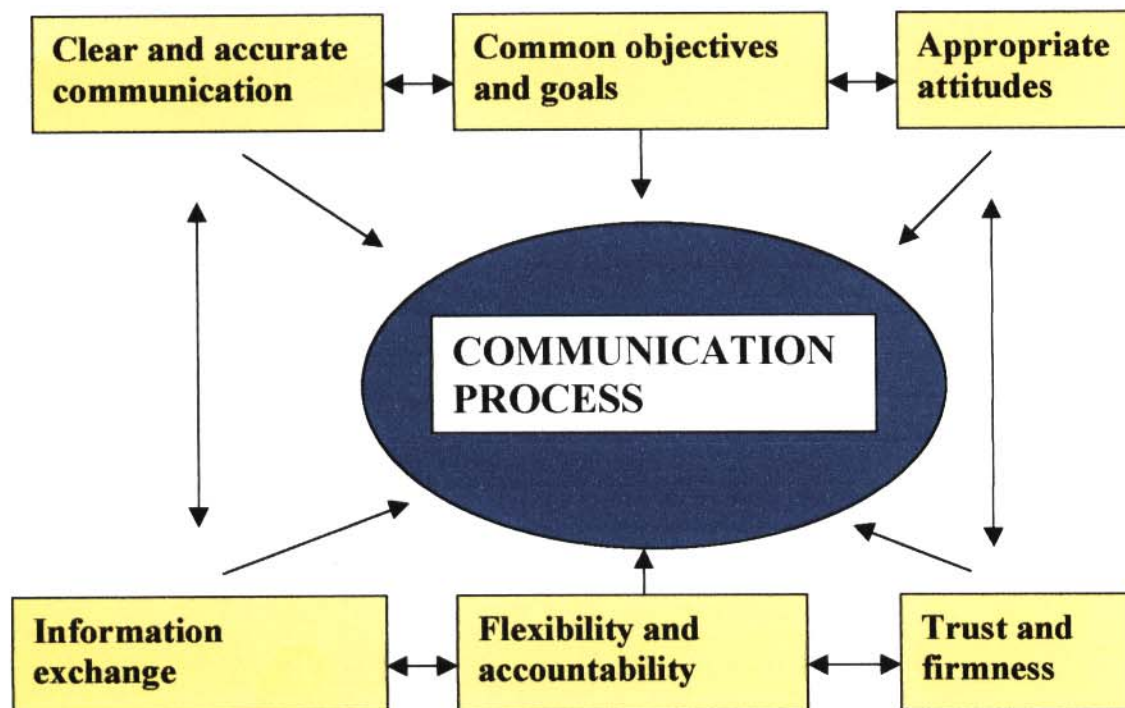


Figure 2.1 Prerequisites to improving communication between sender and receiver.

If these prerequisites are absent, successful use of communication is unlikely. The clarification of the above illustration follows:

2.3.1.1 Clear and accurate communication

This is the process whereby understanding is achieved. The needs should be specific and in concrete terms so as to grasp the full meanings of statements by all the learners involved. Unclear and inaccurate communication will probably send the students more astray than their remote locations, particularly in distance education. It also calls for the lecturer to abstain from using ambiguous terms which would make the content more complicated.

2.3.1.2 Common objectives and goals

There are common goals which are required to make teaching and learning a success. These are important so that greater benefits are likely to ensure from collaboration rather from competition. The different objectives which the learners bring to distance education need to be given equal attention that can be created by collaborative effort.

The common goals, if well administered, will result in shared goals. The shared goals work towards the common objectives. In teamwork, the other's goals are not independent, but rather dependent on other learners' goals.

Then, there are joint goals which are built from intensive efforts from each member of the community in learning. Effective teaching and learning is achieved if the objectives and

goals are not scattered. Joint goals can be looked at through the eyes of the 'Tirisano' campaign propagated by the Minister of education, Kader Asmal, from the belief that communication in teaching and learning is the mother of success. 'Tirisano' is a term from 'Setswana' language, which means 'unity is strength'. It suggests that teaching and learning is not a one man's job, but can grow from strength to strength through joint efforts of educators and learners. Along the way, new problems are solved, while taking into cognisance the old ones which paved the way to the present conditions. The participation of learners in 'Tirisano' is also marked by their much needed input which would be evaluated against the educational goals and objectives. The emergence of telematic teaching in some of the higher institutions of education is a proof to show that attempts have been made to reach the learners everywhere and at anytime.

2.3.1.3 Appropriate attitudes

'Attitudes', as an affective factor, is an integral part of relationship formation that affects the thinking and behaviour of the learners. Learners can develop a negative attitude towards a lecturer who is not sure of the subject matter, who lacks human relations, whose method of teaching runs parallel with the content, who does not interact with them (learners) and whose usage of media is harphazard. All these factors contribute to a communication breakdown. It has been a common, and to some extent, a hidden practice at schools to teach the subject that one is not qualified for. When this happens, the whole class is tuned to move at a lower gear, as the teacher would likely not make any subtractions nor additions towards the learning content. Because attitudes are innate feelings which cannot be measured, if inappropriate, communication between the teacher and the learner is bound to suffer.

2.3.1.4 Information exchange

Important here is that information exchange promotes feelings of psychological closeness. It allows proper focus on the content and reduces power differentials associated with monopolies over data. It promotes good working relationships.

Information exchange tries to weed out selfishness and promotes openness in communication. The more little is known, the more information exchange is needed from those in the know. The exchange of wrong information should be guarded against, for it will amount to communication in the wrong direction.

When the learners in distance education exchange information, they are expected to argue and ultimately reach a consensus as to, for example, whether certain rules or principles still carry water in the changing world. In telematic tuition, information exchange is enabled through the chat and discussion tools. These are instant communication tools where the lecturer is able to compose and edit important messages to the learners. The same applies to the learners chatting and discussing their assignments.

2.3.1.5 Flexibility and accountability

Inflexibility places serious constraints on the communication process. Care should be taken that low accountability to communication may allow low communication but less problem solving, whereas high accountability tends to promote competition as members of a team try to meet their demands and try to show strength. The suggestion is that, there has to be room for mutual communication if knowledge is to be acquired.

2.3.1.6 Trust and firmness

Mistrust limits open exchanges of information and communication. Trust is a prerequisite for open sharing needs, underlying interest and fears, and should not be confused with yielding, for it implies a commitment to an end objective. In essence, the afore-mentioned prerequisites depend largely on the supportive techniques of the establishment of a listening environment for the improvement of communication climate, improvement of skills in message transmission, understanding of communication networks, the increase level of self-awareness and the listening behaviour. The analysis of these prerequisites follows:

- Establishment of a listening environment

This is about creating an environment that will be conducive to effective teaching and learning. Factors such as seating arrangement, destructive noise and activity are attended to if the participants are to maintain a level of alertness and attentiveness. It has been observed that many of the institutions of higher education and some of their satellites are situated in towns for various reasons, of which transportation is among the top list. This advantage, however, turns into a nightmare if the listening environment is noisy. With the factories in the neighbourhood, such an environment could be relegated to that of only hearing, and not that of listening.

- Improvement of communication climate

It is not only the physical environment that requires attention, but also important is the bargaining of the climate, which may be seen as the general psychological state of the relationship. This might produce hostile exchanges of information between the learner and the lecturer.

In distance education, the communication climate is enhanced by technology. If the learners are free to discuss their problems with the lecturer through the use of technological media, the climate is that of openness, more so, timeous feedback from both parties is automatic.

- Improvement of listening skills

Listening requires understanding. The pitfalls to listening skills could be that the learners are overestimated or emotionally involved, or permitting personal prejudices to impair comprehension.

- Improvement of message transmission

The messages must be complete and specific. These may be repeated by using more than one medium. The messages can be demonstrated or presented on written documents to back up verbal messages. The lecturer should try to avoid double bind messages, which are ambiguous and uncertain so that the learners are not put in an invidious position wherein the acceptance of message is interpreted as rejection of the other.

- Understand communication networks

In essence, the more centrally placed a learner in a group, the more independent he/she behaves. This promotes participation and openness.

- Increased levels of awareness

More often than not, there exists a screen of own biases, prejudices, experiences and expectations when people try to listen to each other. A self-aware lecturer or student is free to be more objective and emphatic in response to others in the process of communication. Thus, the more one is in touch with one's own feelings, attitudes and behaviour, the greater the chance that these would not be allowed to distort understanding or clear message transmission.

- Learning behaviour

The learners should give attention and interest to others. This can be achieved by withholding evaluation of communications until the message is complete. Pre-emptive judgements may preclude accurate listening to the total message.

2.3.2 Principle of interaction

2.3.2.1 Learner – to – learner interaction

Seligman (1998 : 13) is of the opinion that in many existing education systems, individual student contact with other students is essentially non-existent or at best

limited. This is true because most of the students in distance education study in isolation and only come to realise at the time of graduation ceremony that they were actually with others. This depicts a loneliness journey in education. Kupferberg (1996 : 228) points out that the most important aspect of higher education teaching from a pedagogical point of view, is the inherent lack of student participation. Thus, the importance of this mode of interaction needs to be acknowledged in educational planning for distance education to ensure that appropriate learner-learner collaborations are of immediate benefits.

Burke, Lundin and Daunt (1997 : 350-361) argue that in learner-learner interaction, both cognitive and social interaction aspects are important. The aim of social interaction is to provide mutual assistance to the members, of which the capital is contributed by each member. What is accumulated (most probably in bulk) from the interaction is shared amongst them all so as to build extra knowledge. As a result, social interaction becomes an association of learners working towards a common goal and for the mutual benefit for all its members. It all requires discipline and loyal support.

It is also possible that a learner from one interacting group joins a different group. With a repertoire of knowledge that he/she possesses, s/he is then able to assist others. This process of interaction environment change, brings together South African institutions of higher education in a way of revolutionising the face. Finnie (1989 : 66-69) postulates that interaction transports the student to a new cognitive environment which both activates and motivates learning.

Nourishing social interaction with cognitive interaction adds fun, excitement and self-actualization. According to Tuovinen (2000 : 20), communication is the key to all lasting learner-learner interaction. In fact, in the development of interactive multimedia for distance education, the learner-learner interaction can be satisfied in incorporating

distance collaborative communication learning activities among students into the content itself, as well as employing multiple modal communications.

2.3.2.2 Instructor – learner interaction

Berger (1999 : 689) contends that one of the striking benefits of on-line education, from an instructor's point of view, is a more personal dialogue with students. Since instructor-learner interaction dimension in distance education has improved from that of correspondence to that of two-way direction, there are exchanges of messages via e-mail, phone and video-conferencing. While this assertion is appreciated, it is important to keep in mind that the materials and feedback on assignments need to be synchronous in nature to avoid time delay. Usually, the longer time delay, the less effective the feedback. Bangert-Drowns, Kulik and Morgan (1991 : 213-252) believe that receipt of timely and appropriate feedback is a necessary condition for learning.

On the other hand, both asynchronous tutor – learner sessions are to be considered in planning total distance education programmes because when complex issues are discussed ... the participants need time to thoroughly digest new information and formulate considered replies (Tuovinen, 2000 : 18-22). To this, can be added that institutions of higher education deal with thought provoking subject matter, which sends the students to compare and contrast when doing research.

As a result of the development of sophisticated third generation distance learning systems, which include interactive video, e-mail, internet, intranet, and audio-graphic technologies, the learning activity via these distance learning systems has been redefined to include and focus on teacher-student interaction (Tretin, 1997 : 261-270).

This mode of interaction can be regarded as a family atmosphere where learners get personal feedback, a response from someone who knows more about them (lecturer). Distance education learners may be in a particular need of help because they are usually in a slight position to pick up clues from other learners. Too easily they can become 'out of sight, out of mind', unless proper support is designed into the system. Some learners may need help in getting started, organize their time or cope with self-doubt. It therefore necessary to keep the help-line open for counselling and accommodating such requests to those who have family and job related problems. Wheeler (1999: 21) acknowledges that the provision of tutor support is vital for the success of learning. He further states that the students who are left to survive without expert help and advice, often flounder and fail, whether they are studying at a distance or not. This statement is also supported by (The Institute for Higher Education Policy, 20002 : 25-26), that learner interaction with lecturers and other learners is an essential characteristic and is facilitated through a variety of ways, including voice-mail and/or e-mail.

2.3.2.3 Instructor – content interaction

Information keeps on changing as the new one becomes available. Therefore, while the course is in progress, the changes can be provided through internet, voice-mail comments or maybe an additional matter on the feedback from the lecturer. This content can be added at the pace that best suits the learners' needs.

Interaction with the content during the course cannot be avoided if it is timely and include current motivating information. Tuovinen (2000 : 18-22) is of the opinion that if lecturers are used to being able to change the lecture content up to the last minute, they often feel constrained by the long lead times required for the preparation of printed, audio-visual or computer-based distance education materials. Price (1999 : 23-28)

advises that some subjects require more frequent updating than others do. Those that deal with some aspect of technology will certainly require frequent updating.

Instructor-content interaction strikes charges that the lecturer should remain a student. If this happens, the students will peel off the habit of asking for examination scope, knowing that the content was not only enough, but also relevant to equip them with knowledge and skills to be on par with their counterparts.

a) Strategies to improve interaction and feedback

Individual student needs, need to be identified and met. In order to improve interaction in distance education, the following strategies are suggested by Uidaho (2000 : 2):

- Use pre-class study questions and advance organizers to encourage critical thinking and informed participation on the part of all learners. Realize that it will take time to improve poor communication patterns.
- Early in the course, require the students to contact you and interact among themselves via electronic mail, so that they become comfortable with the process. Maintaining and sharing electronic journal entries can be very effective towards this end.
- Arrange telephone office hours using a toll free number. Set evening office hours if most of your students work during the day.
- Integrate a variety of delivery systems for interaction and feedback, including one-on-one and conference calls, fax, e-mail, video, and computer conferencing. When feasible, consider personal visits as well.

- Contact each site (or student) every week if possible, especially early in the course. Take note of students who do not participate during the first session, and contact them individually after class.
- Use pre-stamped and addressed postcards, out of class conferences, and e-mail for feedback regarding course content, relevancy, pace, delivery problems, and instructional concerns.
- Use an on-site facilitator to stimulate interaction when the distance students are hesitant to ask questions or participate. In addition, the facilitator can act as your on-site “eyes and ears”.
- Call on individual students to ensure that all participants have ample opportunity to interact. At the same time, politely but formally discourage individuals or sites from monopolizing class time.
- Make detailed comments on written assignments, referring to additional sources for supplementary information. Return assignments without delay, using fax or electronic mail, if possible.

2.3.3 Principle of motivation

Learners who fail repeatedly become defeated and disillusioned and eventually drop out of the system. Continuous change of courses by students at higher educational institutions is, to an extent, caused by lack of self-motivation. Cunningham (1991 : 13-17) suggests that the major theme is one of focusing education around a set of realistic, intrinsically motivating problems.

A learner who is intrinsically motivated is goal orientated, can study independently, has interest in the object or theme, possessing an inquiring mind and will interpret unsuccessful attempts (failures) positively. The position is more acute with distance education learners. However, Kannaiyan (1997 : 27) feels that people learn best when

engrossed in the topic and motivated to seek out new knowledge and skills because they need them in order to solve the problem at hand. Staude and Bekker (1996 : 175) add that motivation comes from within.

Motivation is stimulated by knowledge and progress. These are centred on how feedback is administered by the lecturer. Bonk and Cummings (1998 : 85) assert that motivation by feedback can be done publicly, privately or meshing the two. When the progress is witnessed privately, there is no peer inspection or collaboration. This is mostly by a one-way mode of printing. But when electronic conferencing environment is used, (publicly), along with comments and reactions, collective feedback is intended to nature intrinsic motivation and appropriately sets high and challenging standards. McIsaac, Blocher, Mahes and Vrasidas (1999 : 121-131) agree with some reservations that general feedback addressed to the class as a group is also advisable, but it is individual feedback that touches the student. Rogers (1993 : 20) suggests that the real challenge remains to find the right balance between the discipline of what education is and the freedom that it seeks to promote.

Motivation is stimulated by co-operative learning in group work discussion and communication network. The content of teaching and learning at higher educational institutions itself, consists of scientific knowledge transmitted by means of scientific concepts and judgements. According to Papo (1997 : 60), in a co-operative learning situation, students are required to analyse, comprehend, discuss, and summarize orally the material being learnt.

In a distance learning mode, the learners are motivated by the telematic learning environment to encourage commitments, receptiveness, active interest, participation, dedication, curiosity and vision. The core business of the lecturer is to create an environment which will cater for these needs.

2.4 THE SIGNIFICANCE OF THEORIES IN DISTANCE EDUCATION

At the onset, the application of theory-based research guides practice in a field and provides the practitioners with new tools and strategies that lead to improved instruction (Morrison, 1999 : 14-18). When many people, including teachers/lecturers, cringe at the thought of the discussion of theory, Simonson (1999 : 5) opines that theory helps us bear our ignorance. This could be attributed to the fact that certain aspects of learning theories are emphasized at the expense of others. They therefore seem to contradict each other. It is these contradictions that make it crucial to discuss their important contributions to teaching and learning and to find better ways of how to understand them.

Simonson (1999 : 5) concedes that theory is something that can eventually be reduced to a phrase, a sentence, or a paragraph, and which, while subsuming the practical research, provides foundation on which the structures of need, purpose and administration can be erected. The researcher simply implies that phrases, paragraphs or sentences are difficult to understand, and if theory is equivalent to that, its contribution to distance education cannot be ignored. This explanation sees teaching and learning as a phenomenon of a field of enquiry of which the foundation is set by theories. Therefore, theory is a systematic ordering of ideas and an overarching logical structure of reasoned suppositions which generate testable hypotheses. In distance education, theories directly affect telematic tuition so as to avoid trial-and-error approach.

2.4.1 Cognitive theory

The cognitivists, Gagne, Ausubel and Piaget hold that when the learner is confronted with the learning task without having mastered the previous one properly, learning

problems arise. Again, the cognitive structures have to exist and be stable. They also regard the importance of the learning content to suit the level of the learners.

Carrying the idea from the preceding paragraph, it is assumed that the learners at higher institutions of education are able to read and write. This is the level of development which puts them on par with others. When the learner receives information, and up to the point he/she responds, something happens in his/her mind. The cognitivists endeavour to explain such a process. This is the reason why they do not put emphasis on Stimulus-Response concepts, but emphasize on what happens between them. Henri (1992 : 136) asserts that when the information is processed, information processing is seen as In-depth processing. The following expressions are the highlights:

- Linking facts, ideas and notions in order to interpret, infer, propose and judge.
- Offering new elements of information.
- Generating new data from information collected by the use of the hypothesis and inferences.
- Proposing one or more solutions with short, medium or long-term justification.
- Setting out the advantages and disadvantages of a situation or a solution.
- Providing proof of supporting examples.
- Making judgements supported by justification.
- Perceiving a problem within a larger perspective.
- Developing intervention strategies within a wider framework.

The In-depth processing is the opposite of surface processing which happens when the learner unnecessarily repeats information contained in the statement. This is the result of the lack of conceptualization. Most of the students in higher institutions of education are inclined to reproduce what stands in their study guides, propose solutions and offer explanations or make judgements without justification. Some do ask questions which invite irrelevant information for the sake of being seen as doing something.

Notwithstanding these problems, cognitive theory emphasizes the establishment of the cause of incorrect responses rather merely rectifying the incorrect answers.

The advocates of cognitive theory consider that distance learning resources should take note of the levels of the learning skills which the activity tries to cover, whether this be knowledge acquisition, comprehension, understanding, analysis or evaluation, (Passey, 2000 : 37). The hierarchy of the learning process suggests a particular value and effectiveness of learning at the higher levels that identifies and emphasizes problem solving. Barnett (1992 : 26) explains lucidly that there is something of value in (an) imagery of ascending levels of understanding. This is justified by arguing that the higher order concepts, with greater explanatory power, are what genuine higher education learning is about. The psychologists, French and Colman (19995 : X) have realized that information-processing models of cognitive processes are often represented as flowcharts.

Flowcharts highlight the often implicit assumption that mental operation occur in a clear sequence. The following illustration serves the purpose:

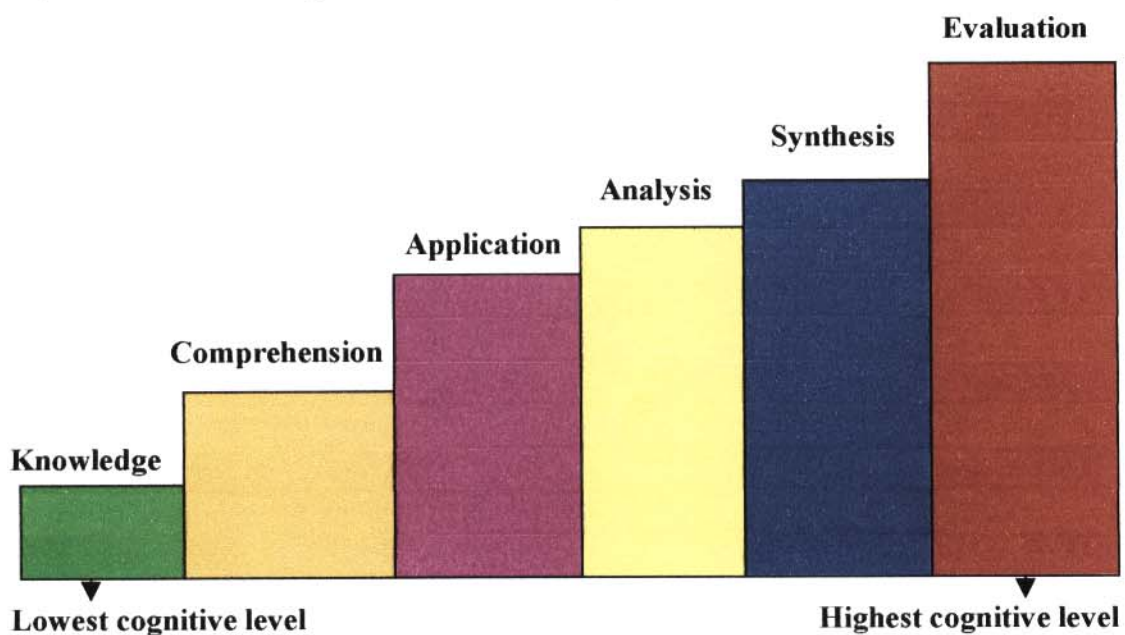


Figure 2.2 A schematic representation of cognitive higher order concepts.

The diagram illustrates the progressive development of cognitive objectives or intellectual abilities. The assumption is that the different levels are arranged hierarchically, that is, one moves progressively from the first objective of the lowest or simplest level, which is attained first – to the next level until one finally reaches the highest level. It is an anticipated level. At a given time, each individual learner functions at a certain level. The demand is that the learners should not advance to a higher level until they are ready to do so.

The cognitive approach clarifies that, between the two extreme poles of Stimulus – Response, there is a series of systems taking place. These are attention, perception, thought processes and decision. These are mentalistic concepts which cannot be measured nor quantified, but will either transform or alter information to form new interpretations. The mind, in the form of schemata, allows an individual's knowledge to interact with the incoming information. Ignorance of the role played by these concepts in teaching and learning, results are that the learners are not set free. Higgs (1995 : 7) contends that the premise of human being should be truly free. Any form of domination is an infringement of freedom, particularly if it distorts one's ability to communicate with, and relate to each other. This idea brings forth the value of communication in distance education. Technological communication serves as the main root which stretches from near and afar to feed every student equally. It needs to be controlled in such a way that all those engaged in teaching and learning are able to exercise positively their feelings, attitudes, emotions and thinking, so that the decisions taken are right responses. In other words, any response depends on these systems.

The types of learning problems can be subdivided into categories of verbal information, intellectual skills, cognitive skills and attitudes. A brief explanation of each category is as follows:

2.4.1.1 Verbal information

Verbal information plays a vital role in teaching and learning at a distance through telephones and conferencing. Difficulties in understanding verbal communication hamper the learning act. Through message exchanges, the lecturer is able to detect mental errors easily when the learner explains how he/she thinks, and how much the learner is knowledgeable about the content. Knowledge, as Duffy, Lowyck and Jonassen (1993:10) add, is a dialect process, the essence of which is that individuals have opportunities to test their constructed ideas on others, persuade others of the virtue of their thinking and be persuaded. During physical contact sessions in distance education, the learners are given the opportunity to verbalise, that is, they are given a topic to prepare so as to share with the class. Although this being a good and fertile chance for gauging the progress, some learners are reluctant to take the lead. But this activity is able to change the introverts into extroverts.

2.4.1.2 Intellectual skills

Intellectual skills involve symbolic activities distinguishing the intellectual skills of discrimination learning, concepts learning, principles of learning and problem solving. For example, a learner can only solve a mathematical problem if he/she knows that the area equals Length x Breadth ($L \times B$). He/she has to know the concepts involved and the difference between length and breadth. Learners will master the new context if he/she has mastered the preceding one. Classification enables them to know concepts, which are to be used in various contexts.

2.4.1.3 Cognitive skills

The understanding is that a learner develops his own strategies for paying attention, storing and recalling the learning content, solving problems and performing other activities. Structuring content, which is the teacher's task, will make it possible that what was taught can be stored easily in the long term memory that it is subsequently recalled. The problem of recalling is traced from memorization. Henri (1992 : 117-136) elaborates that if the learning content is memorized mechanically, it becomes unstable and easily forgotten. In the teaching of science subjects mostly, rules are drawn after learning opportunities have been organized into experiments (induction method). The rules drawn from observations cannot be forgotten for they have been measured.

The learning content of the advanced students demands research projects. Without having acquired the cognitive skills, the learners will be unable to neither relate concepts nor defend their cases. According to Henri (1992 : 117-136), cognitive skills involve reasoning, judgement skill inference and in-depth clarifications. Without these skills, Duffy, Lowyck and Jonassen (1993 : 293) quote Park by asserting that some learners act as globe-trotters who get everywhere without finding a place to rest or stay: They relate everything to everything else and end in total chaos and confusion because they do not focus on details and procedures.

2.3.1.4 Attitudes

Learners have their own preferences, anxieties, dislikes and need satisfaction. Attitudes are able to decide the level of the learners' attention. These are strong feelings, which can last for a long time, and can jeopardise the intentions the learner's long-life learning. The assignments, comments by the lecturer, and the physical environment may cause

learning interferences. It is assumed that the learners put themselves on individual scales as to which way one is leading. Adult students would try to maintain their self-respect. If the learning content does not challenge their thought, if it contains racial discrimination phrases or maybe does not satisfy their fundamental needs, attitudes are bound to be attached. The credits or year marks given, cause anxiety as they prepare for examinations. This is the reason why at the time of writing exams, verbal or written technological communications exceed the normal time. Cognitive theory is understood as addressing these attitudes in time so that each ladder of psychological needs is climbed to satisfaction.

2.4.2 Constructivist theory

The constructivist theory is based on the philosophy of constructivism and that of constructionism. The former, as conceded by Dick (1991 : 41), places emphasis on mental processes in establishing meaning, and therefore requires self-regulation and the building of conceptual structures through reflection and construction. It suggests that much weight is thrown on learner-centredness. The technologically enriched environment of telematic tuition creates a learning space to support self-regulation learning. As a result, context is an integral part of meaning, and therefore a lens through which the world is seen.

2.4.2.1 Characteristics of constructive learning

One goal of education is to move learning from warehouse of students' heads of inert knowledge, to the active integration of information into students' cognitive structures to build ideas or skills. As advocated by Berge (1998 : 72- 74), constructivism is what is thought to be critical, is active participation and reflection by the learner, while

recognizing the flexible and dynamic nature of knowledge. Constructivism is a theory that locates meaning in language and the implied socio-cultural context (Steffe and Gale, 1995 : 28). As a change in the epistemology of schooling, it is realized that constructionism locates meaning in the context of the environment in which it is encountered.

Constructive learning carries words like; active, cumulative and goal directed. It is **active** in a sense that a student does certain things while processing incoming information in order to learn the material in a meaningful manner. The key word **constructive** supposes new information must be elaborated and related to other information to retain simple information and to understand complex material. A **cumulative** character suggests that all new learning builds upon, and utilizes the learner's prior knowledge. At this point of cumulative learning, the quality of prior and new learning is questioned. It does happen that prior learning confuses new learning, or either prior learning gets confused by new learning. This happening becomes of great concern when learning is to be cumulated across learning situations. The technological environment which the distance education learners never came across with, would make it difficult, or rather delay constructive learning to take off from the ground.

Constructive learning as goal directed, stresses that the learner should be aware of the goal towards which he/she is working. Goal-directedness supposes no deviation, in particular, a deviation with non-academic reasons. In this case, diagnostic and reflective actions play a major role. These characteristics are emphasized by Brown, Collins and Duguid (1989 : 32-41) who remark that the constructive view of learning holds that learning is an active process constructed upon prior knowledge and is context dependent. From a constructive perspective, students make sense of their understandings of science based on their prior experiences (Tobin and Tippin, 1993 : 3-31).

2.4.2.2 Principles of constructive learning environment

One goal of instructional design is to allow and encourage the experience of the constructedness of knowledge of the world, a feature which is always invisible in ordinary daily interactions. Many voices can be heard these days criticizing the state of education and calling for **restructuring**. The actual problem seems to be demanding the higher education institutions to identify the learning problems in terms of the decline from earlier standards. Instead of moving back, it is essential to face forward and construct the learning environments. With telematic tuition, Duffy, Lowyck and Jonassen (1993 : 237) comment that the technology-based environments should fulfil an information or knowledge construction need for the learner. Once a need is perceived, the learner will initiate a dialogue with the environment, to the degree that the environment is able to support the need that the learner's interactions will be engaging. This brings the understanding that if the learner seeks the information to solve the problem, the constructive learning environment need to be understood. The following are principles of constructive learning environment as seen by Duffy et al. (1993 : 294):

- Embed constructive environment in a total instructional system.
- Teach learners how they can learn in a constructive way, embedding or immersing this learning to learn into the environment.
- Teach self-regulatory skills.
- Teach teachers how to use constructive learning environments.
- Find a balance between contextualization and de-contextualization.
- Develop learning environments that explicitly organize aspects of self-regulated learning, preparation, learning skills, self-regulation, judgement and feedback, motivation and concentration.

The principles confirm that learners' participation in distance learning cannot be missed or denied because they are the ones who know their previous knowledge that should be used cumulatively. They are the ones who can be diagnostics of their own learning; they are the ones who can be active participants in the learning process.

Understanding constructive theory supposes that learning cannot be expected to result from constructive learning environments automatically. The persistent beliefs, styles and habits of the learners' long history of experiences with learning, are contributing factors to the difficulties that emerge when constructive learning has to take place. According to Prawat (1991 : 3-10), we need learning to learn the approach embedded or immersed in constructive learning environments.

2.4.3 Theory of independent study

Students in distance education are independent in the sense that most of the time, they are physically separated from their lecturers. Of the four elements in the didactic situation, namely: teacher, learner communication systems and the learning content, Simonson (1999 : 6) proposes a reorganisation of them so as to accommodate a physical space and allow greater learner freedom. He actually suggests that the independence of the learner should not be seen to be obscured by other elements. Theory of independent study outdates the teacher concept as the only active partner. The truth lies in the fact that the advanced distance education students ought to complete the course successfully. Moore (1993 : 1-5) advocates that the autonomous learner needs little help from the teacher, who may be more of a respondent than a director. The individual needs of the learners are brought to the forefront in distance education which uses electronic technology, because separation of learners from the instructor requires to take more responsibility of their learning.

2.4.4 Theory of behaviourism

The forerunners in this theory, amongst others, are Skinner, Thorndike and Pavlov. It is from this theory that learning by trial and error has emerged. The same applies to teaching and learning, where different projects and methods of teaching and learning have been tried and tested. The behaviourists were probably right in their contention that *thought* cannot be studied effectively via introspection. The mentalists, on the other hand, were correct in asserting that complex behaviour could not be explained without reference to *internal mental processes*, (Evans, French and Colman, 1995 : 60). As these remarks demand attention from the teaches/ lecturers, it becomes necessary to analyse the thoughts of the behaviourists, so that when applied to teaching and learning, they, (teachers/lecturers) do not fall into the trap of inconsistencies in their application of methods.

The theory of behaviourism prescribes the learning outcomes. According to Lepper, Woolverten, Mumme and Gunter (1993) as cited by Wishart and Blease (1999 : 26), people are challenged by activities they perceive as meaningful and where they are uncertain of their outcome. It therefore puts more emphasis on the key words Stimulus and Response to solve the learning problems. The idea that instructional design can be prescribed, is based on the belief that it is possible to predict a learner's behaviour. In terms of telematic tuition, the learners can be influenced by technology (stimulus) in predictable ways. If the subject matter is broken down into objectives, it becomes easier to be handled and mastered. In the process, the teachers'/lecturers' task is simplified so that they can find time to attend to other important instructional matters.

There exists a thin line between the theory of **behaviourism** and the theory of **cognitivism**. The emphasis on stimulus (behaviourism) activates the thought (cognitive) of the learner so that he/she acts. To put it more clearly, the learners get stimulated first,

then act. It is from these actions that the behaviourists' point of behaviour is much emphasized. From the teaching perspective, other learners are able to pass while others fail even though given the same task. The behaviourists reveal that this problem has much to do with the power of stimulating teaching media that the teachers/lecturers select and utilize. Among other concerns of telematic tuition, is for the teachers to select technological media of which the characters are able to combine so that the power of teaching is increased. This point is in line with the law of reinforcements, which means the repetition of stimulus. For example, a scene from Shakespeare can be repeated by utilizing video, which can be instructed to pause and repeat. A behaviour which is reinforced, increases in frequency, magnitude and probability of occurrence. Staude and Bekker (1996 : 175) claim that all evidence indicates that the more frequent and prompt reinforcement is, the more effective learning will be. Reinforcements can be continuous or intermittent (partial). If partial, it means that the teacher/ lecturer can determine the number of responses. It takes time, but the learners are kept suspended and at the same time anticipating the reward. Programming the learners while using the computers, is the one which would release the correct answer only when the learner has given his/her response. The law of reinforcement joins hands with the law of preparedness of the learners and the learning environment where necessary pre-arrangements are made so that the positive or negative responses can be analysed.

The main contributions of the theory of behaviourism to teaching and learning in distance education can be understood as:

- Objectives are stated in terms of desired terminal behaviours. It means that teaching and learning is under control.
- Feedback is emphasized.
- A student's progress through a lesson is recorded.
- Teaching machines are used to reinforce the desired terminal behaviours.
- Learning can be individualized.

- Learners are placed in a sequence of instruction where they can achieve at a high level.

2.5 EFFICIENCY AND EFFECTIVENESS IN DISTANCE EDUCATION

Technological advances have made education a challenging and exciting time to be involved in teaching and learning. Nonetheless, higher institutions of education are still facing important decisions on how to use new technology, particularly telematic tuition for their instructional programmes and administrative purpose. But the point of efficiency and effectiveness stretches beyond affordability, capability and usage of these materials. It is therefore no longer a question of '*if technology could be used in education*', but rather a question of '*how and for what purpose*'. It is no longer a question of '*Will technology replace the teacher?*', but rather, '*How can it be used more effectively?*' to expand the capabilities of the teacher.

For efficiency and effectiveness in teaching and learning, the following are continuous responsible questions to be asked:

- What should the students learn?
- How should they learn?
- How long should it take?
- Can the teachers/ lecturers do it better?

Based on the preceding questions, the following need to be clarified:

Efficiency and effectiveness are intertwined, but only taken as separate entities for scientific purpose. Effectiveness is a measure of the extent to which outputs meet the needs and demands of the learners. This means that effectiveness is about doing the right things right after identifying the needs of the learners. This supposes scanning the environment and setting the objectives and strategies to satisfy those needs. South African institutions of higher education have been concentrating mainly on efficiency, which is defined as doing things right, and thus falling into a trap of doing wrong things right for fear of being inefficient. What is needed is a combination of both effectiveness (doing the right things) and efficiency (doing things right). Dwyer (1999 : 248-256) contends that if you do not have the knowledge or time to do it right the first time, it is going to be extremely difficult to access adequate resources to re-do it.

Effectiveness is about how well technology does the job it is assigned. If a specific educational medium is used, are the learners who are taught through it more successful than the others who do not have access to computers, for instance? Are the intended goals reached? These questions are related to the quality of technological medium in the context of distance education. Quality can best be defined in terms of satisfaction of the learners. In order to maximize the learners' satisfaction, well trained, knowledgeable, skilled and sensitive educational technologists are needed. So far, many universities have attempted to have technological laboratories, and many can be said to be only efficient in terms of the quantity of the equipments (tools) available, and not for quality. If the educational technologist ignores to update the equipments for the benefit of the learners, quantity of tools fails not assist the learners. The availability of the technologist when in need for services to familiarize the learners with the learning equipments, is something to be desired for efficiency and effectiveness in teaching and learning. His/her patience will reach the vast population as against the students learning by trial and error. According to Dwyer (1999 : 301-309), consultants help people become comfortable with computers and common software, recover information from virus infected disks and answer questions on all types of hardware, software and networking. Once the learner comes

across the word 'virus', he/she suddenly becomes frustrated. It is actually a harsh term, but the presence of a technologist changes the picture.

Distance education is currently being driven by money, market or mission. In the future it will be driven by effectiveness and efficiency (Dwyer, 1999 : 248-256). A point is put across that computers are expensive. Repairing them constantly increases the costs. What is important is the comprehensive design and conscientious development to reduce the costs and increase the benefits. Also, the administrators need to know the cost per average student per unit of study, having in mind the global audience in distance education.

Besides a possible solution of setting learning centres less affluent access to new technology, the factors affecting efficiency, for example, time, energy and space, need to be given consideration. If time is controlled properly, less energy and less space is used because what was to be one big area (the main centre) for learning, is divided into many educational centres reaching all the learners at their different places of learning. This expansion of space actually becomes less costly and more efficient to the course instructor.

Having said that, technological anxiety is one factor, which can make what is efficient not to be effective. Many learners may feel threatened by technological equipment and experience technological anxiety. This could be the reason for avoiding the use. But Thompson (1990 : 6) sends an encouraging message across that even the important invention (the printing press) may have seemed threatening to some, just as computers seem to be threatening to certain people today. He actually means that there is always a teething stage and the effective feeling about technology to teachers and learners can be overcome.

2.6 THE CHALLENGES FOR DISTANCE EDUCATION DEVELOPMENT

Some of the higher education institutions are already utilizing some form of distance education, many are still contemplating the use of distance education technologies to improve their position in academic environments. Therefore, there is a great need for teachers/lecturers to review their instruction in communicating knowledge to the learners. Baumgartner (1999 : 3) holds that ... teaching has to be considered as skilled practice, consisting of numerous components skills to be trained, so that future 'knowledge workers' can successfully deal with unstable, uncertain and complex situations. In simple terms, 'knowledge workers' are the teachers /lecturers, and the complex situations refer to the teacher's role in times of technological changes. Does he/she still deserve to be called a teacher even in a technological environment?

Developing instruction for distance education requires expertise and co-operation, which implies that passing from novice to expert becomes a complex process, which needs analyses. Dwyer (1999 : 248-253) launched an action plan with hierarchically arranged steps to guide the development of instruction in distance education. Thus:

1. Familiarization
2. Utilization
3. Integration
4. Reorientation
5. Evolution

A comprehensive look of the above steps follows:

2.6.1 Familiarization

Familiarization refers to knowing something or becoming acquainted with something. This is the stage which decides or underlies the higher-order categories and essential for their attainment. It depends much on awareness, willingness and attention. If the subject matter experts, programmers, multimedia specialists, learners and information specialists are not aware of the changes around them, and are not willing to change or to know, they will not pay attention. The situation will remain unfamiliar to them.

In distance education, there are tutors who are to represent knowledge experts at different centres attached to the main campus. They need to be well conversant with the content. They must be able to help solve the problems that the learners have concerning the learning material. Once the expert or tutor is familiar with technological equipment, he/she will be able to set the learners on track. He/she should be aware that distance education is open with limitations. The old school of thought methods of instruction, which resemble autocracy, are to be replaced by interactivity. As he/she interacts with the learners, is directed technologically as to which media to use, for what purpose and what type of content. To him/her, familiarity supposes relevance and appropriateness in media usage.

Familiarization means making things easy, but not taking them easy. The learners are familiarized with the terms used in educational technology, for instance: media; software; hardware; technology in education; technology of education. For effective teaching and learning, learners are able to make sense about definition of concepts when they see concrete things. If hardware is supposed to be a tool like a computer which contains

software, why not do the explanations in the laboratory of educational technology for the sake of concrete explanations rather than abstract? By so doing, familiarization will be more effective and will arouse curiosity and interest further. Most notably, knowing definitions supposes retainment of knowledge and apply it to solve problems. Taking advantage of their motivation, curiosity as well as their fascination with new terminology, it will be easy to develop their communication skills.

The learners need to be familiarized with the requirement of distance education. Communication of assignments and feedback can be done through correspondence (one-way means). This option is still permissible, but is slow and risky as many important materials are likely to get lost. The learners who had nasty experiences with method would like to be familiarized with computers and e-mail for speedy and assurance of receipt. Berger (1999 : 686-690) puts it straight that with a click of a mouse, you can return feedback to the students.

2.6.2 Utilization

Improved technology makes it possible that distance education is brought to the environment of the learners. It is important for the learners to understand how it goes about its rules concerning immediate feedback provision, communication network, collaborative learning strategies, time and space factors, interactivity processes and the way they are to be assessed.

Utilization as a step in the development of distance education, gives the learners an opportunity to acquire learning experiences. Having the basic toolkit is one thing, being able to use it effectively is another. Advocates of technological media have realized on the other hand that the teaching and learning tools are often underutilized, and on the

other, being ineffectively used in the teaching situation. From time to time, the learners are required to submit typed assignments. The demotivated learners would go for a quick way of delegating others to type the work for them. As a result, the learner has not communicated or interacted with technological tools, and will unfamiliar with the developments. Exploring the materials which have been made available, will demonstrate the degree of mastery of their knowledge. Responding to the failure of the learners to utilize the technological equipment, Tergan (1997 ; 266) cites Weges et al. (1993) that ... it takes a relatively long period of time to become completely acquainted with a new study environment, especially an environment that stimulates very different facilities compared to printed materials.

Beyond the technical skills, the challenge for the learner is not only concerned with collecting and assimilating scarce and limited information, but to extract relevant and valid information from an information surplus environment of the internet.

2.6.3 Integration

The integration stage/step can be said to be a co-ordination stage where responsible decisions are taken. Therefore it is at this stage that distance education is given the qualificatives it deserves, hence the transformation of course curriculum. Similarities and differences are weighed against each other looking into the needs of the learners in the changing era. This step can be better understood in terms of commitment, transformation of course curriculum, and systematic instructional design.

2.6.3.1 Commitment

Commitment is the energy with which a person pursues and realises a perseverance and concentration. At the cost of repeating what other researchers in educational technology have emphasized, the learners in distance education bring with them different experiences from their previous involvement in education. It is these previous experiences, which will make them stay committed in the learning process. In other words, one cannot attribute meaning without being totally committed. The experiences, past and present, are necessary to intensify the commitment which in turn improves the quality of significance attribution.

The following questions are necessary and are taken as challenge in the development of distance education:

- What is to be integrated?
- Who is using technology?
- How often is technology used in teaching and learning?
- Why should technology be used in teaching and learning?

The response to the questions is that the learners and lecturers communicate through technology. If the use of technology is one sided, there is no integration. If technology does not address the content, there is no integration. Total integration involves learners and lecturers using technology together to meet the teaching and learning goals.

2.6.3.2 Transformation of course curriculum

A curriculum is a continuous process. The present definitions are seen as satisfying the curriculum in place. It therefore suggests that different definitions will keep on affecting the role of the teacher/lecturer and what is expected of the learners. A recent example is the much debated transformation of curriculum 2005, which unfortunately seems to be failing prematurely to stand the test of time, as well as the speculated curriculum 21.

The distance education courses or programmes are being modified when new ones are being introduced to increase the incentive among the students and prevent them from stepping out, (Águstsson, 1997: 54-59). This is an integration stage where learners are to be prepared for what they should expect. The preparations help them to cope with the information power of course curriculum transformation, especially that distance education curriculum slightly differs from the on-campus curriculum. Smaldino (1999 : 9-13) opines that courses previously taught in traditional classrooms may need to be retooled.

2.6.3.3 Systematic instructional design

Kemp and Smellie (1994 : 391) identify instructional planning as a procedure for instructional planning that involves the application of a number of interrelated steps pertaining to objectives, instructional stages and evaluation of learning. At this stage, the elements of instructional design are to be integrated to form a whole because it cannot succeed with isolated beliefs, understandings and attitudes, but rather, result in intersubjectivity of such practices.

The first element of situational analysis and determination of needs, requires the designer (teacher/lecturer) to collect and analyse data. He/she will thereafter have to compile a report. Having your own document is a purposive act of understanding oneself. There will be analysis of learning material, inspecting whether the texts are reader-friendly so as not to divide the learners into gender and colour. The aim is to unite and strengthen the students' morale for continuous improvement in the system. According to Kevin and Kruse (2002 : 63), this is the most crucial phase as all subsequent work is based on the outcomes of the analysis.

2.6.4 Reorientation

The biggest challenge in developing instruction in distance education is rethinking the learning act and the role of teachers. It is built on the assumption that the teachers'/lecturers' mind is already set on the present ways teaching, and to tune it back could be a lengthy, and therefore, a complex process. But, rethinking and reorganizing is always built on what is in operation, hence the establishment of in-service training institutions. Reorientation thus suggests strategic planning. Brandaõ (1999 : 54-57) is of the opinion that new teaching practices must be introduced, the school curriculum must be revised, school organization must be altered and the teacher training is urgent. Reorientation concerning distance education is described by Sherry (1999 : 337-365) as needing understanding the nature of philosophy of DL; identifying the characteristics of students in distant sites, developing technology-adapted learning opportunities; developing distance teaching strategies; training and application technologies; evaluation of students' achievements; and evaluation of sites.

Reorientation of curriculum necessitates reorientation of teachers/lecturers. They are to be trained towards placing the learner in the middle (Pedocentrism). The pedocentric approach is about caring for the learner to become an active participant and not a passive

recipient of information in distance education. The influence of learners in the preparation of learning materials cannot be ignored. A well-orientated teacher/lecturer will be aware of the fact that technology has much increased the number of learners in distance education, thus, the focus on them has been simplified. He/she is there to interact with them at any time and at any place (synchronous and asynchronous).

There are, however, problems encountered in the reorientation of lecturers. The political, budgetary constraints and the technological constraints often make the lecturer reluctant to change. It has been realized that the changes are often implemented even before the teachers/lecturers are given the opportunity to be trained. This is seen as a sudden change irrespective of the length of time, the energy exerted and the costs incurred in compiling the curriculum. Sudden changes often cause a psychological trauma to teachers/lecturers who would often conform to the dictation for the sake of the learners. Cornell and Martin (1997: 98) assert that teachers do not want to change their work habits, technology dictates new work patterns, the teacher has not had enough time to prepare and adjust to new technologies, the lack of incentives and technophobia are sometimes the obstacles which must be overcome. Smaldino (1999 : 9-13) highlights the problem by stating that the students may feel alienated and will begin to tune out. Peraya and Levrat (1999 : 108) have realized that many technical and logistical problems arise for which the teachers are only prepared.

Reorientation is a necessity, but the top-down management needs to be aware of the problems created, especially the timing of the changes and the environment of change. It is the era of technological environment of its own kind. Electrifying the learning environment, repairing and installing the furniture so that the teacher/lecturer finds meaning in reorientation, is of vital importance.

2.6.4 Evolution

Evolution is about unfolding the curve, opening out and giving off. It serves the twin goals of improving plans and programmes. Secondly, of implementing accountability. Thus, teachers/lecturers need to question themselves continuously whether the total number of students in distance education are being served and are equally learning. This step is supposed to be entirely open to provide the basis for constant programme accountability, and to be accepted as a normal aspect of organizational functioning.

Evolution suggests change to solve problems, and the accent falls on activity to stimulate thinking and action. The fact that there is continual interaction with books and technology, the participants in the development of distance education face questions such as: *What are the services available in the market? How does one cope with the quantity and quality, and where to place new resources and services?* Gouveia (1999 : 19-30) sees evolution as characterized by finding out about new services available in the market, how to cope with issues of quality and quantity, where to place new resources and services, how to keep laptop serviceable, how to maintain software --- issues like different versions and how to operate systems and virus updates in the network.

2.7 SUMMARY

From this chapter, it is envisaged that the power of information revolution, characterized by technological equipments, demand high critical thinking form the teachers/lecturers so as to be the movers and shakers of education. Whatever the past successes of traditional modes of teaching methods, they are no longer adequate to meet the challenges of teaching and learning in this century.

This chapter has explored the lifelong learning process. Though not being a new concept, it has been seen as a risky, time-consuming and costly exercise, given the lack or slow supply of modern technologies at higher institutions of education. If adequately supplied, these equipments, more often than not, are met with reluctance or under/illskilled teachers/lecturers, instead of being innovators who are prepared to take the risk to try out new ideas. This chapter explored that good communications infrastructures will promote the lifelong activities and offer a widening of catchment areas to include anyone who wishes to participate in distance education.

Unless the teachers/ lecturers have a thorough understanding of theories, it will be difficult for them to communicate knowledge in distance education. They must be able to make a distinction between the given theories which equip them with the necessary direction to take when solving the learning problems. It then becomes evident that the employment of telematic tuition at higher education institutions demands critical thinking about teaching and learning. In this sense, this chapter has attempted to look at the different possibilities of putting theory into practice.

Finally, if the information presented in this chapter demonstrates anything, it is the importance of efficiency and effectiveness in distance education. The roles played by the teachers/lecturers, educational technologists and the learners, necessitate a flexible teaching-learning environment. Coupled with the principle of motivation, meaningful learning is achieved. This summary leads to the following chapter, chapter three, which looks into linking teaching and learning in telematic tuition.

CHAPTER THREE

LINKING TEACHING AND LEARNING IN DISTANCE EDUCATION

3.1 INTRODUCTION

Learners exposed to new information can be expected to acquire progressively more complex intellectual skills contingent on the level of their prior knowledge and the complexity of the new information (Dywer, 1999 : 255). This assertion throws light on 'learning experiences', a central concept in distance education. In this chapter, learning experiences endeavour to explain how the students experience their texts and technology. Also included, is how the information is processed in the instructional situation, thus inviting teachers/lecturers to question themselves as follows: *'Why in the midst of information technology, do learners perform differently when given the same task? Is it because the teachers' / lecturers' methods of instruction are outdated? Is it because the learners' previous learning experiences are too different and complex, to an extent that regarding them as useful hinders the learning cycle to be completed promptly as intended?'* Perhaps the most worrying feature could be the type of questioning (question structure format) which varies from lecturer to lecturer of which many of them have never trained as teachers / lecturers.

It appears that most of the students in distance education, approach their learning tasks by way of a push or pull style of learning, that is, they are more assignment and examinations-driven. Such concerns are given a broad coverage in this chapter by analysing learning strategies. Notwithstanding these difficulties, Wood, Ford, Miller, Sobczyk and Duffin (1996 : 79-92) assert that individuals with different cognitive styles approach similar information processing in different ways. Therefore a brief exploration

of the principles of implementing flexible learning will be given. Marzano, Pickering and Brandt (1990 : 17) are of the opinion that student thinking does not occur in neat, easily identifiable categories, and that it is also highly unlikely that any single learning tactic alone will ensure the creation of well constructed knowledge.

Portela (1999 ; 58-65) cites Spiro (1992) as saying, 'It is not sufficient just to link everything with everything else, some structures that support objectives are needed so that learners do not become lost in a labyrinth of incidental or ad hoc connections.' Distance education being as old as it is, is a busy area with a lot of information available more than ever before due to the introduction of technologies. Also, many teachers / lecturers take interest in updating the learners' standards of education by improving the methods of teaching. Therefore, linking teaching and learning needs to be carefully structured and be consistent. Examination will further be made on the ways in which distance education can be delivered through telematic tuition. A comprehensive discussion of how telematic tuition goes about, would be relevant to a dedicated body of teachers / lecturers, and to identify their priorities in teaching, to take special measures to improve the old ways of communicating with their learners.

Among the educational problems which beset higher institutions of education today, none is as persistent as the continuation of teaching and learning without focussing much on objectives, goals and outcomes. Even though the idea does sometimes crop in their (the teachers') minds, they are however not put in place appropriately. A broader analysis concerning these aspects will be given a space in this chapter, in an attempt to look at teaching and learning in action, with careful recognition of the opinion shared by Lemos (1996 : 151) that goals give meaning and direction to learning activities and provide criteria against which to assess learning process.

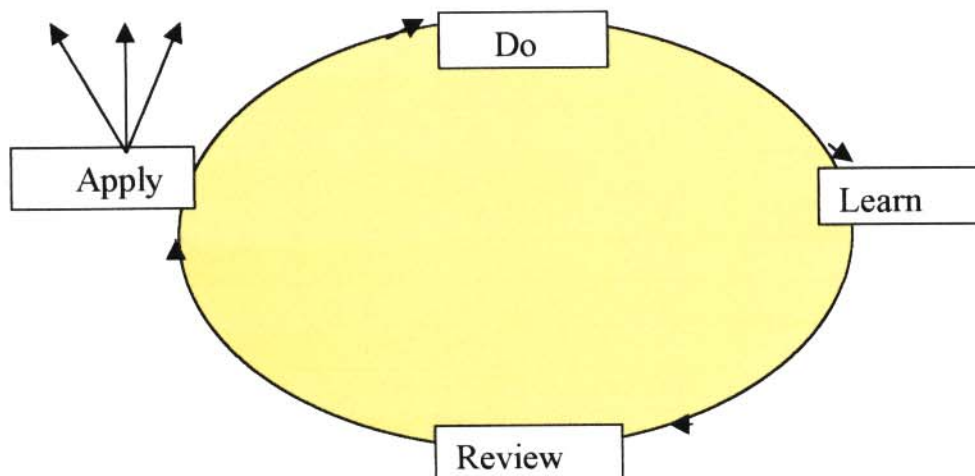
3.2 WHAT EXPERIENTIAL LEARNING ENTAILS

Experiential learning is flourishing and extending its influence through telematic tuition. As seen as the core of education, it has different meanings to different people, to learners in particular. In distance education, it reflects the depth, breadth and complexity of current developments of electronic equipments, and therefore affects and changes what the learners knew, know and what they need to learn. There are undoubtedly overlaps in the learning experiences, as a result, the focus on the learning cycle becomes a viable exploration. Weil and McGill (1990 : 16) advance the focus on experiential learning as, 'Reflection on prior knowledge as well as here and now experience within the group relationship itself, provides the basis for insight and change.'

3.2.1 Experiential learning as an organised learning cycle

Productive learning experiences do not occur without motivation. They are structured in a way that the learners get motivated to 'do' 'learn' 'review' and 'apply'. These may well be understood by the following illustration as proposed by Dennison and Kirk (1990:4):

Figure 3.1 Illustration of experiential learning as an organised learning cycle.



3.2.1.1 The 'Do' aspect

Most of what people learn comes from doing. This stage refers to the learning opportunities of doing something so that learning experiences can take place. The learners take part in doing experiments and research on their own. Arriving at the meaning of related concepts demands a deep digging approach. While students are waiting for feedback on their class contributions and are curious about the instructor's position on a topic, they typically want this after they have wrestled with key issues or problems on their own or in their small groups (Bonk and Cummings, 1998:85). Instructors are expected to organise the experiential learning of learners and increase the rate of learning. Providing materials like study guides, ideas and technology tools does this. Papo (1994:28) contends that components of the learning process respectively include the lecturer's behaviour, which is primarily motivation producing, perception directing, response eliciting and reinforcement providing. He actually suggests the switching from the transmission of material to that of experiential learning of students.

Ramsden (1992:151) sends a reminder that engaging students responsibly and actively with subject matter is very much harder. Consequently, this stage requires the teachers/lecturers to stand on their tenterhooks so that they can handle arising and challenging situations.

3.2.1.2 The 'Learn' aspect

At this stage, some theories are introduced. Learners as reflectors, are determined that they must have time to think about experiences when they confront them, and are therefore cautious when presented with material not met before. Learners as

pragmatists, understand the need to ensure that any new material encountered can be practically applied. They want satisfaction of the need to solve important problems. They make use of the adaptive instrument (brain) to make decisions in problematic situations. This means that when such situations arise, they consider all the factual aspects. On the basis of what they know, possible solutions are considered. They also think ahead of possible consequences. Therefore, experiential learning is a way of reconciling the two questions of 'how' and 'what' to learn.

So far, these steps of the learning cycle do overlap and are inseparable. At times, they might seem to be taking place simultaneously, but scientifically, they are not.

3.2.1.3 The 'Review' aspect

Distance education learners work in small groups, which do not necessarily demand leaders, but each one plays a role of reviewing his/her individual feedback together with others. The aim of reviewing is to learn from one's work and other's. By reviewing the feedback, they are able to ventilate and get a track of their progress. This is a stage where an individual learner is able to see whether he/she has accumulated the necessary credits to qualify for examinations. Since the learning material at higher educational institutions is highly structured, it becomes necessary for the learners to pause and review their work so that any continuation will be motivated by experiences.

The stage of reviewing is able to break the silence, which normally exists, between the learner and the teacher/lecturer or the supervisor. Failure to send assignments or chapters as per agreement suggests that an individual learner could be experiencing some kind of problems. Also, if the silence is experienced from a group, the

reviewing stage could be indicating some kind of collapse. Therefore, a speedy review can be done through telematic educational media. Jeppeson (1997: 57) comments that, in addition to reviewing by correspondence, the telephone and e-mail are used, and teachers attend to students as the need arises and circumstances permit. A much valued time factor is mostly threatened by silence.

Experiential learning provides an opportunity for one to discard unbecoming behaviour. If the review stage is to be seen as the replaying of the past experiences, the lecturers are then challenged to encourage responsibility from the learners who show signs of withdrawal. Openness, honesty and objectivity are the cornerstones that would produce maximum learning from experiential activities.

The review stage itself, depends much on the learning activities experienced in the 'do' area. If little was done at the previous stage, the review stage will indicate. The same applies, if too much was done; there will be much to be reviewed. This gives a clear picture of how learning experiences differ from an individual to another. With the assistance of the lecturer, learners should try to strike a balance between the two stages of 'do' and 'review'.

Perhaps the importance of the review stage can well be realised in telematic tuition where there is an advantage of a quick reviewing of the learning experiences through computers. Darty and Brophy (1999: 26) comment that Computer – Assisted-Instruction can help students through difficult material and their pace and allow them to review as much as they want.

3.2.1.4 The 'Apply' aspect

This stage of a cycle consists of a series of questions, which give the learners the practices of the rules/principles. The aim is to find out whether the learners have assimilated new knowledge to an extent that they can use it independently. Learning experience is a complex set of activities that the educators design, develop and deliver to the learners. Acknowledging the individual differences among learners, the instructional consistency matrix (Dwyer, 1990:221-230) illustration presented below, explains how individual differences can be accounted in the design of instructional materials for use in distance education:

Figure 3.2 Illustration of instructional consistency matrix.

	Objectives	Instruction	Testing
Problem solving	X	X	X
Rule/Principle using			
Concepts			
Facts			

The explanation is that, **facts** and **concepts** are the foundations needed to form **rules/principles**. These are the prerequisites that the instructional material should contain to equip the learners with the information to be used at the application stage. The formed principles will help the learner to come out of **problem** situations. What

they have or have not learned from the lesson will be determined some time afterwards in a test or examinations (Dennison and Kirk, 1990: 7). The illustration states that the **objectives** in the **test** item need to be clearly defined so as to measure what it supposed to. If the instructor had inspected the content that it had relevant facts and concepts, the 'apply' stage will be acted upon in a meaningful way, and subsequently it will become part of the learners' database that can be used in more complex situations. Dywer (1990:221-230) adds that the role of the designer of learning experiences to be used ... for distance education, is one of manipulating the instructional environment so that learners will act on information in short-term memory initially, and long-term subsequently in ways that will enable them to process information at levels of the educational objectives. The application of knowledge may be of varying quality which may range from concrete to abstract. The more abstract the knowledge, the greater the potential range of application.

Collins (1990: 16-20) acknowledges the fact that the important feature is that the individual is encouraged to develop a global framework in which he/she can integrate situated experiences. The emphasis falls on the applicability of knowledge to authentic problems in expert practice.

3.2.2 Prior learning experiences

As times are changing, there is a dawning recognition of the importance and centrality of learning from experience at higher educational institutions. The polarity between the intellectual and the practical is an absurdity which can no longer be supported, but would rather support thinking and action. In this case, experiential learning would mean the justification of learner –centred and learner-controlled learning limited by demands in the organisation, to the extent that the teachers/lecturers are able to relinquish their traditional ways of teaching. Some concerns are discussed as follows:

- Prior learning experiences are regarded as a means of gaining access and recognition into the present learning activities. These are valued and used as a stepping stone to success.
- The prior experiences of the learners are a creation of new routes for meaningful learning.
- These experiences act as a base to the exposure to electronic technology in telematic tuition.
- Distance education depends highly on the quality of the learners' prior learning experiences. The 'quality' concept of prior learning experiences can supersede that of 'quantity' in terms of propositional knowledge (reliable knowledge) and practical knowledge (progress observable), for 'quantity' without quality adds to the learning problems. But if both are intelligently combined the learners' self – esteem and confidence is boosted.
- Prior experiences of the learners as personal circumstances appear to influence the way in which they approach their instructional texts. Berg; van Wyk; Lemmer; van der Linde and van Niekerk (1996:169-174) have realised that the students in distance education may have contradictory experiences of text, professing that they prefer texts encouraging higher-order thinking skills but simultaneously being occupied with the memorisation of content.

3.3 STRATEGIES FOR LEARNING IN DISTANCE EDUCATION

Adult students and their instructors must face and overcome a number of challenges before learning takes place including: becoming and staying responsible for themselves; 'owning' their strengths, desires, skills and needs; maintaining and increasing self-esteem; relating to others; clarifying what is learned; redefining what legitimate knowledge is, and dealing with content. The in-depth meaning is that, learning through distance education is demanding. On the point of relating to others, students need to ensure their directions and realistic goals for group assignments.

When dealing with the content, it has been realised that many teachers/lecturers tend to teach using examples which were used by their predecessors. Inheritance itself has a historical and cultural problems which could have worked well in the past, but may not succeed to meet the present demands of technological learning environment, teaching methods, media characteristics and the type of learners. Lazenby (1996:30-40) has realised that whatever the past successes of the traditional modes, they are no longer adequate to meet the challenges of our time. For distance education, instructors need to discover and use examples which are relevant to their distant learners, and be in keeping with the content. In addition, the simpler, better and faster ways of communication will give distance education the status it deserves.

3.3.1 LEARNING STYLES

3.3.1.1 Deep approach

Students beginning to study through distance education may be unsure of themselves and their styles of learning. To this effect, such students are likely to memorize facts and

details in order to beat the deadline of assignments and qualify for examinations. Given this background, the literature review reveals that several attempts have been made on the elaboration of deep approach as a teaching and learning strategy at higher institutions of education, including distance education. By way of acknowledging the efforts and the light thrown in by Papo (1994:38) and Morgan (1991:342-371) concerning the constituents of the deep approach, comparisons between the two will be outlined with the aim of learning from their opinions. The idea that the deep approach is influential in guiding applications of new technology to education, its comparative study follows:

a) The Deep approach as seen by (Papo, 1994:38) :

- The course objectives of the lecturer should include student's higher level intellectual skills, such as problem solving and critical analysis.
- Lecturers should avoid using mere repetition of factual information by facilitating/using teaching activities, which demand deep understanding of the material.
- There should be a ratio increase of group-based and self-oriented learning to didactic. Factual material that students need to memorize needs to be decreased.
- Students who are in large classes should be encouraged to be self-critical, which can be possible by the amount of contact time the lecturer has. This will possibly help students to understand the basic principles of learning.
- Lecturers should modify their teaching style to enhance and encourage learning in the large class.
- Finally, lecturers should identify and address the psychological environmental or specific diversity problems which may inhibit students' study skills or attainment of the deep approach.

b) Deep approach as seen by (Morgan, 1991:342-371):

- Focus on what is 'signified' (e.g; the instructor's arguments).
- Relate concepts and distinguish new ideas and previous knowledge.
- Relate concepts to everyday experience.
- Relate and distinguish evidence and argument.
- Organize and structure content.
- Internal emphasis focusing on how instructional material relates to everyday reality.

At first glance, the similarities seem impressive as the assertions penetrate to the core of things and compel teachers/lecturers to turn into a new leaf. Firstly, **memorization of facts is discouraged** because in this way, the focus is on the 'signs' instead of the 'signified'. These are students who believe that what stands in the study guides or text books is final. There are neither additions nor subtractions made. To give these facts some weight, it is always important for the teacher/lecturer to find out what is it that makes the students resort to memorization. It becomes a matter of making introspection from the side of the teacher/lecturer and try by all means to stop the virus from spreading. If the teachers/lecturers do not **structure the learning content** chronologically, logically, spirally, systematically or linearly, students would fail to make head or tail of the learning content. It is the type of the learning content that dictates the different ways of structuring. By taking heed of the following brief explorations under structuring of the learning content, teaching and learning in distance education will be linked for the benefit of the remote students:

a) Chronological structuring

Chronological structuring is based on the fact that on many occasions, historical things do not happen at the same time. Events differ according to the time they took place. Structuring them chronologically will create some kind of order in the students' minds, and will therefore be able to argue from a based direction. This is a way of avoiding mere repetition of factual information by the teacher/lecturer. Memorization of facts is an old habit and the old problem, particularly in distance education where the students appear to be driven by assignments and examinations. Focusing on the examination and assignments leads to the knowledge that is cut off from everyday reality.

b) Linear structuring

Linear structuring is understood as the events of the last learning content overlapping into the following the following lesson content, just as the three time perspectives of yesterday, today and tomorrow feed each other. For instance, had it not been of yesterday, there would not be today, and today gives birth to tomorrow. In distance education, deep approach to learning helps the learner to be critical in his/her thinking, and relate the past concepts to the present.

The learning content may overlap this way:

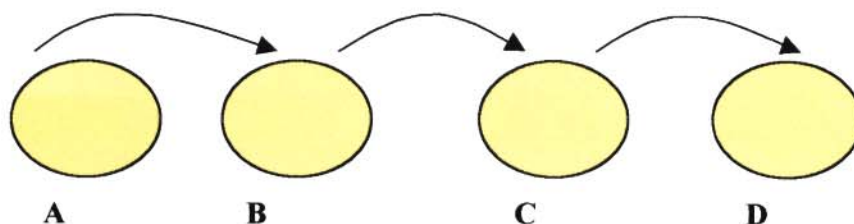


Figure 3.3 Linear structuring of the learning content.

c) Logical structuring

Events are not told chronologically in the novel. There is a constant shift from the present to the past... (Ngara, 1990:96). This style is known as digression, which means a passage which deviates from the central theme, a departure from the main subject, or a wondering away from the main topic (Makgamatha, 1990:180).

If the lesson content is logically structured, events will proceed from the start to the end in a logical manner or that which makes sense to the learner. This will help the learner to understand the theme which the author would like to pass. In simple terms, logical structuring is about putting things in an orderly manner for the sake of progress which the students in distance education would appreciate to have. Papo (1998:11) believes that the potential of new technologies that have been developed to support greater teacher effectiveness has increased ... He actually sees the need for the teaching styles to be modified. The truth is that the uniqueness of the teacher brings forth different teaching styles characterized by motivation, interest, creativity, insight and didactic skills.

d) Spiral structuring

Spiral structuring leads the learners from the simple to the difficult. What is simple could be what the learners are familiar with. Structuring the lesson content by proceeding from the simple, arouses curiosity, commands attention, builds confidence and evokes interest and awareness. As the lesson accelerates and becomes complex, the students are already absorbed and immersed. The task of the tutor is to maintain a state of 'conscious competence' (awareness of the need to learn a particular knowledge or skill) among many students as possible (Dennison and Kirk, 1990:22). Accepting this idea, the deep approach as a learning strategy becomes successful. Care should be taken that if the work is too easy, the learner will not be motivated either. This also makes him lose interest and

concentration. Again, what the teacher /lecturer may find easy to understand, may be extremely difficult for the learner. Because of this problem, the teacher/lecturer may not only expand horizontally, but may expand vertically as well. This implies the simultaneous broadening and deepening of knowledge in a particular learning content. The following illustration gives a picture:

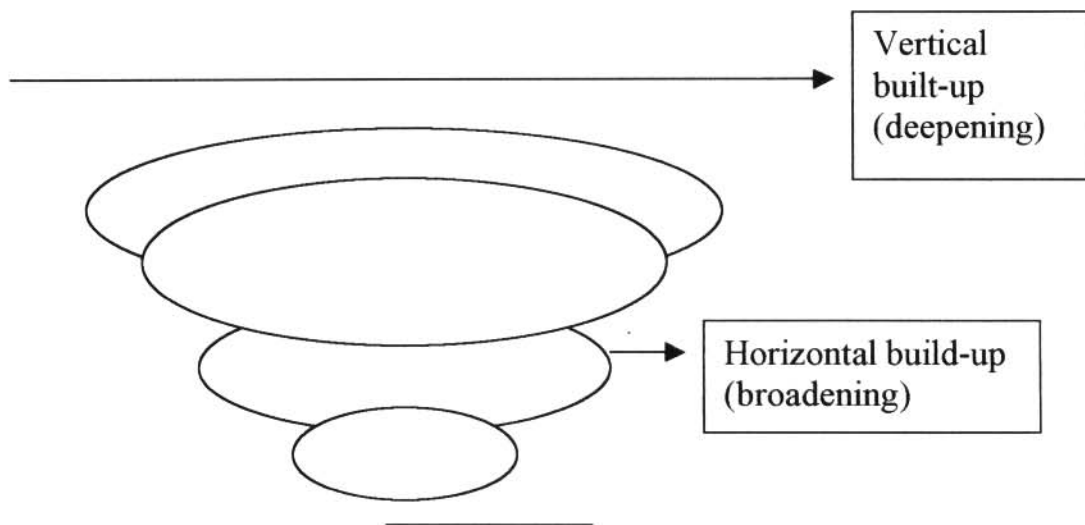


Figure 3.4 Illustration of spiral structuring of the learning content.

e) Systematic structuring

With systematic structuring of the content, the teacher/lecturer will arrange the content from a specific point, and then spreads it so that in the ultimate, no stone is left unturned. That is, all the points are joined. He/she may start by engaging the learners in doing research. They may gather information on their own by way of experimenting, observing and writing down notes. The conclusions arrived at, will be combined to form one common principle or rule based on proven facts. The aim of applying systematic structuring should therefore be to bring together different units of knowledge in a meaningful whole by means of analysis and integration.

Pondering on the point which demands the lecturers to identify and address the **psychological and environmental problems**, Glennie, Mills and Tait (1996:115) observe that there is no point in providing access, without providing conditions necessary for success. The psychological and environmental problems in distance education mostly, relate to the conditions in which the learners find themselves. Physically, these students face complicated assignments single handedly at various environments, which may not be conducive to learning. For example, the family and job-related conditions. Since these affect the students psychologically, they need to be identified and addressed at the beginning of the course so that the selection of media should be done directed towards easing their (students) progress, rather than obstructing them. Indeed, as Seligmann (1998:5-6) hypothesises, learners who have lived in educationally isolated and marginalized communities are crying out for reciprocity. The psychological problems go as far as making the students unable to recall what they have studied. The phenomenon where information is incorrectly recalled is ascribed to the presence of psychological and environmental problems.

The point, which seems to be embracing all others, is that the course objectives of the lecturer should include students' higher level of intellectual skills, such as problem solving and critical analysis. In a lighter vein, the deep approach is about increasing students' self-efficacy (Lin, 1999: 287-292). Self-efficacy is concerned with judgements of personal capability (Bandura, 1993:117). To maintain commitment to deep approach, teachers/lecturers need to analyse how much more effort is to be exerted to achieve the goals of learning. Quitters never achieve, achievers never quit.

The preceding comparison of two conception of the deep approach, tricks the awareness that there are different ways in which students view their own learning. Some see learning as the reproduction of facts and ideas; others see the essence of learning as construction of knowledge; some stress the action knowledge. These views correlate closely with different learning styles and strategies of surface learning, deep approach

and concrete learning. The answer to the question as to why distance education learners perform differently has much to do with how the learners view their learning.

It is appropriate thus far, to point out that the tone in which the two researchers, Papo and Morgan put forward their views concerning the **deep approach**, is cognitively inclined. The mere mentioning of the concepts such as **focusing on the signified; distinguishing evidence and argument** (Morgan), **deep understanding of material; critical analysis; self-oriented learning; higher level intellectual skills** and the **decrease of memorization** (Papo, 1994 : 38), is to argue about knowing, attention, thinking, problem solving and generally all mental operations that involve information processing.

Lastly, if teachers/lecturers would like to maximize constructive learning, deep approach seems to be the answer. In addition, The following points are of value on how teaching and learning can be improved:

- Intention to understand material for oneself.
- Interacting vigorously and critically with the content.
- Organizing ideas within integrating frameworks.
- Examining the logic of the argument.

3.3.1.2 Co-operative learning

Co-operative learning has a specific meaning in distance education as it encourages a co-operative incentive structure and a co-operative motive to produce a co-operative behaviour. In this instance, the distanced learner and the lecturer need to adopt a working together spirit right from the start. In-between, learners will discover knowledge rather

than simply transferring information; learners will learn collaboratively.

This type of learning recognises the value of the 3C's (three C's) in learning, namely: Communication learning; Co-operative learning and Collaborative learning. Senge (1990), as quoted by Miure, Nazarian and Gilmer (1999:65-68), suggests that students construct knowledge as they engage in new experiences within a research context, concerning themselves in the culture of science within a collaborative learning community. Empirical research indicates that co-operative learning promotes higher achievement than do competitive and individualistic types of learning. There is greater active learning and improved teacher/lecturer effectiveness, (Hamm and Adams,1992:5).

Explicitly explained, co-operative learning is team learning. A question immediately arises which questions the possibility of team learning when the learners register as individuals and proceed towards studying at their different places. The answer is, immediately after registration, a concerned lecturer becomes aware of the geographical locations of his/her students. With the use of telematic tuition, learners are technologically teamed. The e-mail addresses make team learning possible. In addition, collaborative learning is an attempt to shift from surface learning, although not automatic. Brundag, Keane and Mackneson (1993:131-144) suggest that the challenges before learning takes place, including:

- **Becoming and staying responsible for themselves:** Instructors can help motivate distant students by providing consistent and timely feedback, encouraging and reinforcing effective student study habits.
- **Owning one's strengths, desires skills and needs:** Behind every strength there are weaknesses or limitations. It is advisable to pick up from these weaknesses so as to gain strength. Other students' success can be interpreted as intrinsic

motivators to others, that is, by communicating their success would help others to realise their mistakes.

- **Maintaining and increasing self-esteem:** Many students in distance education balance many responsibilities inside or outside the learning industry. The instructor can maintain students' self-esteem by providing timely feedback responding to their questions, and assignments in a concerned manner. Self-esteem takes time to build. Once built, it is not easy to break because it shall be built on one's understanding of his/her shortcomings.

Co-operative learning is a process of passing from novice to expert. It is viable constructive and participative in the joint work on a subject or product whereby the group as an entity generates shared ideas. The implication is that it is characterised by division of labour, drawing on and bringing together knowledge distributed among the participants.

3.3.1.3. Negotiation learning

The learning problems in teaching at higher education institutions need to be investigated and means should be found on how they can be negotiated in an attempt to solve them. Citing the assignment area, problems with regard to their prompt submissions, negotiation learning is vital (Moffat, Kok and Myburgh, 1996:144-151). The following factors are cited:

- Vorige verhoudinge. (Previous relations)

- Vorige ervaring met die oorhandelingsproses. (Previous experience with the negotiation process)
- Vooropgestelde idees en vooroordele. (Proposed ideas and preconsumptions)
- Die behoeftes van al die betrokke partye. (The needs of all relevant ideas)
- Elke party se kennis aangaande die onderhandelingsproses. (Each party's knowledge regarding the negotiation process)
- Verskillende ideologieë. (Different ideologies)

These factors explain that negotiation learning does not depend on one person, but its success is based on the presence of two or more people, in particular, the inclusion of all the factors. Negotiation learning's structure and content are the product of interaction with many people and things, referring to the learners teachers/lecturers and teaching and learning media.

Among others, different types of negotiation learning are: **Explicit negotiation**; based on face-to-face contact (Pienaar and Spoelstra, 1999:13); **Integrative negotiation** which is based on 'win –more' model; **Continuous negotiation** based on meaningful distribution of what has been accumulated between all parties.

3.4.1.4 Self-regulated learning

This type of learning consists of monitoring, testing and questioning, revision and evaluation. There is constant observation and interpretation in the light of the goals. By way of reflection, learners are able to interpret their own behaviour and thinking, and therefore control themselves. Most study guides and tutorial material supply questions which help the learners test their state of knowledge and understanding.

The aspect of performance judgement by way of spontaneous feedback is of special significance. It means that teachers/lecturers are a contributing factor in self-regulation. Important questions are: 'when and how long should one take a break; what should one do when concentration fails; how can one exclude internal and external distractions.'

Within self-regulation learning, regulation by others does crop in, especially when the students are involved in group work. Distance education students do experience regulation by others in times of contact with other learners at a distance through telematic tuition, as well as the library books for reference. These instances, referred to as third person, are to be seen positively as the extension of self-regulation learning, particularly responsibility, instead of being interpreted as impediments.

Instructors who take care of almost learning business and leaving only a few possibilities for students are said to have failed from the beginning because students are limited to utilize their prior learning experiences and the intellectual skills. Given the demographic factors of age and sex of learners in distance education, the 'taking over' tradition of teaching and learning suggests learning below the learners' qualificative level.

3.3.1.5 Jigsaw method

Jigsaw is a compound word built of 'jig' + 'saw'. The contemporary dictionary (1993:565) explains the words 'jig' as to 'move up and down with quick short movements', and a 'saw' as an 'instrument used to cut out shapes in thin pieces of wood'. The combination of the word brings the understanding that the jigsaw method of learning is quick and precise when applied by the learners in an attempt to solve certain content problems. In distance education, it is realized that many students happen to apply this method (unaware) when they are about to sit for their examinations. As a result, those

who were unable to qualify for examination, miss the opportunity to witness the advantages of this learning method. One can therefore argue that when the learners move quickly up and down throughout their studies in the year, they are able to draw each other from their distant isolated corners of study and overcome the puzzling areas of the learning content in co-operative groups or teams.

Sharan (1990:2) is of the opinion that the incentive structure in jigsaw is individualistic: students' grades are based on individual examination performance. The truth of the statement lies in the fact that the examination performance of an individual indicates his/her comprehension of attitude towards the learning content and the significance attribution which is unique, personal and individual. Thus, jigsawing in distance education through telematic tuition does not only smoothens the path to meaningful learning, but also accelerates the pace of constructive learning.

3.4 LEARNING PROBLEMS ENCOUNTERED IN DISTANCE EDUCATION

The actual communication patterns of distance education students are the outcome of various interacting factors such as: personal likes and dislikes, abilities and disabilities, access to different types of communication, costs of using it in time needed, and institutional requirements and provisions (Prummer, 1995:294) cited by Burt, (1997:73). In view of this remark, the following learning problems are experienced:

3.4.1 Endogenous factors

'Endo' means internal. In this instance, it refers to the factors in the learner himself/herself which influence learner ability. The external world is taken to be separated from

the mind, but is also considered that the mind as a reasoning capability is able attribute certain external world elements.

It is believed that what the learners are able to see and touch outside, is interpreted internally. It is the mind that helps the learners to interpret and understand the learning environment and the learning content. Jensen (1995:33) affirms that people never really understand something until they can create a model or metaphor derived from their unique personal world. To add to this, Slabbert (1996:63) concurs that the learner establishes a relationship with objects in terms of nature and events, or with subjects in terms of him/herself or others. This brings the understanding that distance education students, scattered as they are, each has endogenic tradition of interpreting his/her own personal world. Also, their social interaction expands (Pulkinen and Ruotsalainen, 1997:87-91) their critical thinking through directing them towards discussion, clarification of their own ideas, and evaluation of others' ideas. When this happens through telematic tuition, the minds of the students in distance education are enriched, sharpened and active because they do not only learn by doing, but also learn through doing. The endogenous factors need not only vary in scope, but also need to be stable so as to cope with the avalanche of available information.

3.4.2 Exogenous factors

'Exo' means external. Exogenous factors refer to those factors outside the learner. These could be the learner's home circumstances and educational factors. Gergen (1995:18) describes them as world centred. In this instance, distance learning puts learners in a big world of home atmosphere and accommodation which can as well be not conducive for learning. Also, the relationship between the technological media and the learners may indicate helplessness. The components which are used more and more are usually found to be helpful and therefore may demand extra provision. The other side of the coin

indicates that some students might be reluctant to commit themselves to extra study time required by extra provision. This behaviour can be interpreted as the learner disregarding the institutional costs. Again, the estimation of their own student costs is no longer based on direct experience with technological media. Burt (1997:68) suggests that caution is needed in inferring how these anticipations of benefit might translate into media mix preferences.

Lecturers cannot escape the ruler which measures the exogenous factors. It has been found that some lecturers tend to spend less time on learners whom they do not have high expectations. This is outside the learners' control and affects the time and the quality of learning. In-between the lines of teaching and learning, one can see the cutting line which divides the lecturer's patience in halves and sometimes in quarters. The danger is that, a learner who is said to be a low achiever carries a negative stigma into his/her future learning activities. The learning problems with the text, and the learning problems with technology demand the lecturers to be discerning, realistic and objective in their behaviour towards their assessment.

3.5 IMPLEMENTATION OF TELEMATIC TUTORIAL IN DISTANCE AND OPEN EDUCATION

Educational technology has been assigned the important task of studying the learner, the lecturer and technological media in particular, so that the aid given may correlate with the needs of the learners as the main customers. The statement poses this question: 'Is distance education effective?' Besides being a question, it technically shows colours which compare distance education with the traditional face-to-face mode of learning. Moore and Thompson (1990:330) state that comparing distance education to traditional face-to-face instruction indicates that teaching and studying at a distance can be as effective as traditional instruction when the method and technologies used are appropriate

to the instructional tasks. While this assertion is accepted, the idea can be thrown in by pointing that the referred colours of the cloth have now reached a stage of being woven in the manner that telematic tuition becomes the answer which makes distance education effective. Support is by Sigonyela (2000: The Star, Business Times, October 13), who states that the most important thing to understand is that even though users may be separated by hundreds, perhaps thousands of kilometres, this is a live medium and they can see and respond to each other directly, absorbing each other's body language. This is the background which necessitates the following discussion:

3.5.1 Flexibility in telematic tuition

A key decision of instructional designers is the selection of media. In distance education, a decision arrived at is the selection of media of media mix. Media mix is what telematic tuition is about. There is a claim that certain media are superior to others because some media have advantages which others do not have. Clark (1994:21) argues that media are mere vehicles that deliver instruction ... and many different media attributes accomplish the same learning goal. Kozma 1994:7) posits the need to consider the capabilities of media, and the methods that employ them, as they interact with the cognitive and social processes by which knowledge is constructed.

To address a question of access, institutions encourage their students to use work-place computers to access sites (Sigonyela: 2000, The Star, Business Times, 25 June). This statement has important implications for flexibility in Telematic tuition. Computers play a significant role in ensuring that people are able to realise their full potential. A wide range of technological options are available to the distance educator, which fall into the following categories:

- **Voice**

Included are the interactive technological teaching media as audio tools like tapes and radio. They are of one-way character. The telephone, audio-conferencing can assist the teacher/lecturer to bring the sounds of the things which are beyond her reach. It therefore explicitly explains that the delivery of distance education depends on voice. In literature teaching, for instance, the recorded sounds made by the sea waves can reach every student near and far. The aim is to relate and clarify certain concepts that the authors are inclined to use in their writings. One can certainly say that distance education delivery through telematic tuition has no bounds.

- **Video**

This concerns the motionless or still images such as slides; moving images like film and videotape which are pre-produced; and the real-time images combined with videoconferencing.

- **Data**

Data describes a broad category of instructional tools like computers which can give and receive educational information electronically. In distance education, the success of computer application includes the following variations:

Computer-Assisted-Instruction (CAI) which uses the computer as a self-contained teaching machine to present individual lessons. Learning can be individualized while giving reinforcements and feedback. Davidson, Savenge and Orr (1992:349-358)

postulate that one of the most powerful features of computer-aided instruction (CAI) is its capacity to individualize instruction to meet the specific needs of the learner. It does not only cater for the sighted, but the shortsighted also have the privilege of learning provided extra gadgets are connected, for example, the talking system to check spelling.

Computer-Managed- Instruction (CMI). This can be organized to track the records and progress of the learners. It is reliable and quick to release the examination results when needed. Most distance education learners are employees whose employers would ask for the results for the sake of promotions, provision of bursaries and other related benefits without delay. At the time of scarcity of employment, the learners whose results are released earlier have the advantage of competing their counterparts quite in time. Although Computer-Managed-Instruction is often combined with Computer-Assisted-Instruction, it does not necessarily need to deliver instruction.

Computer-Mediated-Education (CME) describes computer applications that facilitate the delivery of instruction, for example, fax, electronic mail (e-mail), real-time computer conferencing and World Wide Web (WWW).

- **Print**

Printing is the fundamental element in delivering distance education. It includes print formats of the programmes from textbooks, workbooks and course syllabus. According to Wheeler (1999:19-22), data can be sent simultaneously by ensuring that students receive paper-based support materials such as handouts and course notes as they leave the teaching session.

3.5.2 Systems approach to telematic tuition

The systems approach finds its way in telematic tuition because it focuses on the whole and wholeness. It does not break the learning goals into component parts because it regards holism as important. It is based from the premise that things which are apart are put together to be seen as known. Events are related and therefore influence one another.

Telematic tuition also puts emphasis on the skills of the teacher/lecturer, the selection of the content, confidence and anxiety of the learners, personal goals, learning environment, prior experiences of the learners, the selection and use of media as well as the support systems. The involvement of this approach actually serves as a reminder that all the components together, are complementary interaction of many components. The multimedia approach recognizes the systems approach in terms of its entry and exit to learning programs, mode of teaching and learning and the program components. Furthermore, all the teaching and learning media involved in telematic tuition work as a system to accomplish the goals, objectives and learning outcomes.

3.5.3 Goals, objectives and outcomes in telematic tuition

When the learners in distance education begin to analyze whether to pursue a goal-directed activity, they first make a quick and brief judgement of their self-efficacy with questions such as: *Can I do it? Will I be permitted? Do I feel like it? Is it important?* These are necessarily the questions dealing with the goals, objectives and outcomes of telematic tuition. If there is a problem with any one of the questions, the learners' motivation and commitment decreases. Nevertheless, Lin (1999:287) is of the opinion that people sometimes overestimate or underestimate their ability to the goal

achievement. Thus, they either make mistakes or become less confident when performing the task.

The outcomes in telematic tuition can be understood from the angle of durability, functionality, flexibility and meaningfulness. Durability is in line with standing the test of time; flexibility in the sense of being approachable from different angles; functionality referring to be useful in time, place and pace, while meaningfulness applies to the understanding of facts. Telematic tuition is learner-centred, and therefore the programs are significantly influenced by goals, objectives and outcomes. Reaching these is possible through different kinds of interactions. It has been realized that the third generation delivery system, telematic tuition in particular, is said to be highly interactive. Its planning considers:

- Who are the learners?
- What is the essential content?
- What strategies and media should be used?
- What is the state of the learning environment?
- How should the quality of instruction be determined?
- Social support. McConnell (1991:208) agrees that the social presence function of telematics is essential in facilitating working and learning at a distance.

Goals give meaning and direction to learning activities and provide criteria against which to assess learning progress (Volet and Lawrence, 1990:497). The idea throws weight on the learners' conative life consisting of the driving forces centered on the pursued goals and the will to realize those goals.

3.6 SUMMARY

This chapter about linking teaching and learning in distance education explored what experiential learning entails in terms of what the learners experience as they do; review their progress; how they learn in the process; including what and how they apply their acquired experiences. This chapter emphasized the prior learning experiences which differ from learner to learner.

In accordance with the strategies for learning in distance education, this chapter has attempted to focus on the deep approach by way of comparing the foundations laid by some previous researchers. This was a way of reviving the spirit and the culture of learning, since the value of this approach to the learners cannot be over emphasized. Several styles of learning were described from which, an individual's way of learning can be improved.

The learning problems, outside or inside the learner, are seen as destabilizing factors in the teaching process. This literature review has revealed that these learning problems have to be realized by the teachers/lecturers that they continue to exist with the set goals. Thus, encountering these problems need not discourage the teachers/lecturers and learners to work together as unity.

In the area of the implementation of telematic tuition in distance education, education delivered through technology is projected to be a primary delivery vehicle. With the many frustrations inherent when entering the world of computers, instructors are advised to have realistic expectations in teaching and learning, and navigate those waters together with the learners so that the trip becomes that of an arrive alive campaign. To bring to a close of this chapter, telematic tuition in distance education is hailed on the basis of

moving along with systematic approach which integrates all other systems in teaching and learning.

CHAPTER FOUR

EMPIRICAL RESEARCH DESIGN, RESULTS AND DISCUSSION

4.1 INTRODUCTION

This chapter is basically grounded on the previous chapters which, like a chain, looked into the effectiveness of telematic tuition in higher education institutions. The relevant literature was reviewed. At this stage, the empirical research will provide a systematic treatment of the design, and interpret the questionnaires. On the bases of the findings, suggestions and recommendations will be made.

4.2 INSTRUMENTS USED IN THE STUDY

The quality of any research can be no better than the quality of instruments used to collect and analyse data. In order to gain insight into interactions between learners and lecturers who employ telematic tuition, it is important to examine the respondents' attitudes through questionnaires.

4.2.1 Questionnaires

The use of questionnaires, rather than an open forum discussion, was intended to avoid the effects of dominant personalities of people that would sway or affect the opinions of others simply on the basis of force or argument (Hayes, 1993:145). Since this research was a case study in which the researcher explored a single phenomena of interest, the data collection was explored qualitatively. Best and Khahn (1993:202) assert that questionnaires can be used to gather either qualitative or quantitative data. In the same vein, Shornborn (1996:590) contends that questionnaires are a good way of collecting data

because they are cheap and quick to administer for as long as subjects are sufficiently literate. As a result, it was assumed that questionnaires constructed in a close and open-ended way would be a relevant measuring instrument to unfathom the effectiveness of telematic tuition in higher education institutions. The relevance of the questionnaire also stemmed from the fact that the respondents would be free, and shall have spared their time to complete it without delay. Both the learners and the lecturers represented the core group. It is also worth mentioning that the collection of data was through post, of which the questionnaires once completed, were collected through a delegation of trustworthy personnel.

4.2.1.1 Learners' questionnaire

The learners' questionnaire contained four sections: Section A; B; C and D, respectively measuring: personal particulars; the role played by distance and open education in higher education institutions; the effectiveness of telematic tuition in distance and open education; and the future possibilities of the usage of telematic tuition. The questionnaire was made up of twenty-two close and open-ended types of questions. The combined mode of questions did not put the learners in a corner, but gave them room to state their case freely, and possibly give reasons as well. The nature of the problem identified the learners involved in telematic teaching as respondents, irrespective of their study. It was decided to use a Linkert – type scale of four to five point scale ranging from 'Strongly disagree', 'Disagree', 'Not sure', 'Agree' to 'Strongly agree.' This was thought to be more simplistic than the seven-option scale recommended by Saw and Idrus (1997:22-35).

4.2.1.2 Lecturers' questionnaire

Thirty-four items were spread in sections: A; B; C and D under the headings: personal particulars; lecturers and their perception of distance and open education; the effectiveness of telematic tuition in distance and open education; and the future possibilities of the usage of telematic tuition, respectively.

4.2.1.3 Administration problems encountered

At the outset, anonymity and confidentiality were guaranteed. However, some questions were skipped. The Yes/No questions in particular. Because this was to a lesser extent, they became easy to administer by following the respondent's flow of ideas from the preceding and succeeding responses.

It was also realised that the reason for some learners not committing themselves to completing other parts, could be that some of them were not aware of the fact that they were being taught through telematics. It also gives the impression that this mode of teaching and learning is still new at the chosen institution for this research, and generally in South Africa. However, one appreciates the non-committal action of some respondents because most people seem to be not forthcoming if they do not understand something.

4.2.2 Validity

Validity refers to the degree of relevance of the research instrument. The underlying rationale is that the supervisor had the opportunity to make valid projections from his own knowledge by looking into this work. In that way, the instrument is said to be valid. It is also important to heed the assertion made by Poggenpoel (1998:351) that, the four strategies to ensure trustworthiness are, credibility, transferability, dependability and confirmability.

4.2.3 Reliability

Whereas validity refers to accuracy, reliability refers to consistency. In this work, the effectiveness of telematic tuition in higher education institutions is measured, that is, the point of quality is the focus. It

therefore needs to be mentioned that quality is a strong factor which may negatively or positively influence what is to be measured. In this research, reliability will depend on:

- Whether the learners and lecturers as respondents understand the instructions to be followed when responding to the questions.
- The researcher's ability to analyse and interpret the data.

4.3 PURPOSIVE SAMPLE

Subjects for the study were drawn from the learners and lecturers at Technikon Free State, a higher education institution in Free State Province of South Africa, which employs telematic tuition. Time, transport and finance limited the investigation to one higher education institution. In addition, few of these institutions are still hesitant to embark on telematic tuition, partly because of financial constraints, let alone that they could be less knowledgeable.

4.3.1 Sample size

Best and Khahn (1993:105) make it clear that the sample size needed depends mainly on the amount of the heterogeneity of the variable in the population. On learning from the argument that there is no fixed number or percentage of subjects that determine the size of the adequate sample (Best and Khahn, 1993:19), a sample of this research consisted of fifty learners and ten lecturers. This sample is regarded as a purposive sampling (Luborsky and Rubinstein, 1995:104), relevant for a case study. A sample structured in this way will be sufficiently representative to provide a reliable research-based opinion on which to anchor the researcher's work. The adequacy of the sample in this work was necessitated by the following:

- It should be small enough for proper administration.

- It should be a representative of a larger population of learners and lecturers employing telematic tuition.

4.4 DATA ANALYSIS, RESULTS AND DISCUSSIONS

On capturing data, MS. Excel programme was used. The usage of the programme came up firstly with the tables: **4.1** to **4.8**. A printout was made to check the look-alike and the feel-alike responses. As the process continued, new categories of tables from **4.9** to **4.40** emerged to be processed. Some of these were processed graphically, and numbered as Figure **4.1** to **4.6**, so as to gain insight into the perceptions of learners and lecturers involved in telematic tuition.

Firstly, results and discussions of the learners will be presented, then followed by those of the lecturers. Both data sets will be analysed qualitatively and quantitatively, and to be grouped under areas of:

4.4.1 Personal particulars.

4.4.2 Learners and their perception of distance and open education.

4.4.3 Learners' views on the effectiveness of telematic tuition in distance education.

4.4.4 Learners' future possibilities of the usage of telematic tuition.

4.4.5 Lecturers and their perception of distance and open education.

4.4.6 Lecturers and telematic tuition training.

4.4.7 Lecturers' views on the effectiveness of telematic tuition in distance and open education.

4.4.8 Lecturers' future possibilities of the usage of telematic tuition.

4.4.1 Personal particulars

Table 4.1: Details of learners according to gender

	Male	Female	Total
Numerical weighting	1	2	
Number of respondents	33	17	50
Percentage	66	34	100

According to table 4.1, males formed sixty-six (66%) of respondents and females constituted thirty-four (34%). Generally, one would expect telematic tuition to be effective regardless of the indicated gender imbalance.

Table 4.2: Details of learners according to level of study

	First	Second	Third	Fourth	Total
Numerical weighting	1	2	3	4	
Number of respondents	23	14	7	6	50
Percentage	46	28	14	12	100

Among the respondents in table 4.2, forty-six (46%) indicates the first level of study, twenty-eight (28%) the second level, fourteen (14%) the third level, and twelve (12%) the fourth level. In between

the second, third and fourth levels, the table indicates a graph declining by almost half. Such a trend signifies crucial factors which question the effectiveness of telematic tuition in higher education institutions. Whereas the lack of self-confidence could be attached to what is revealed, other social factors cannot be ruled out as they keep on affecting the learners' level of study negatively.

Table 4.3: Details of learners according to faculty

	Management	Information Technology	Total
Numerical weighting	1	2	
Number of respondents	35	15	50
Percentage	70	30	100

Table 4.3 reveals that the majority of the respondents (70%) indicate that Management Faculty has a bearing on the effectiveness of telematic tuition. Data may be indicating to higher education institutions as to where more resources are needed, or maybe the available ones to be fully utilized so that telematic tuition becomes effective. There is also a thirty (30%) which indicates a lower response from information technology.

Table 4.4: Details of lecturers according to gender

	Male	Female	Total
Numerical weighting	1	2	
Number of respondents	6	4	10
Percentage	60	40	100

Table 4.4 indicates that there are 60% of male respondents and 40% that of female respondents. Much weight is thrown on the male respondents. The display introduces and encourages to see the 3C's at

work, that is, **Communication, Co-operation and Collaboration**. These are the pillars for the effectiveness of telematic tuition.

Table 4.5: Details of lecturers according to qualifications

	Post graduate	Total
Numerical weighting	1	
Number of respondents	10	10
Percentage	100	100

For the assessment of learners' performance, lecturers of good quality are needed. From the preceding table it is discerned that the overwhelming majority of respondents are having two or more degrees by 100%. One would expect them to cope with tertiary teaching workload. They are facing a task of creating learning opportunities for learners in telematic tuition. From the onset, impressions are set that the success or failure of telematic tuition will always come back to the lecturers' teaching-learning responsibilities.

Table 4.6: Details of lecturers according to tertiary teaching experience

	4-6 Yrs	7-9Yrs	12 Yrs	Total
Numerical weighting	2	3	5	
Number of respondents	4	5	1	10
Percentage	40	50	10	100

Tertiary teaching is about interacting with learners who are regarded as self-directed. The table reveals

that the majority of the lecturers have been teaching at tertiary institution for more than four years. It therefore suggests that there is room for managing and coping with the requirements of telematic tuition. It is also expected to see the lecturers working together and sharing ideas among themselves. The manner in which the years are spread in the table, as indicated by (40%), (50%), and (10%), shows that there is ample opportunity for lecturers to grow and gain experiences in telematic tuition.

Table 4.7: Details of lecturers according to faculty

	Management	Total
Numerical weighting	1	
Number of respondents	10	10
Percentage	100	100

The faculty represented stands at 100%. The lecturers' responses, which could either be showing competence or incompetence, are to be considered as representing other faculties employing telematic tuition.

Table 4.8: Details of lecturers according to nature of appointment in the faculty of Management

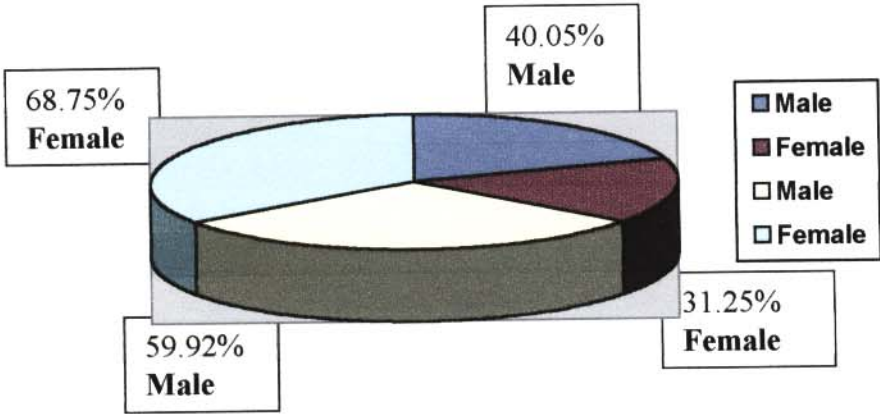
	Part-time	Contractual	Total
Numerical weighting	3	4	
Number of respondents	2	8	10
Percentage	20	80	100

Table 4.8 indicates that there are 20% of part-time and 80% of contractual lecturers in the sample. There is a strong emphasis on contractual lecturers. On the basis of understanding that contracts can be signed for longer periods, lecturers are given the opportunity to develop, select and improve the telematics materials, as well as in drawing the attention to problematic components of this learning programme. This may serve to encourage teamwork with part-time lecturers standing at 20%.

4.4.2 Learners and their perception of distance and open education

Learner population is characterized by gender, level of study and the degree they have registered for. It is of vital importance to consider their level of influence on the learners’ perception of distance education

Figure 4.1: Graphic illustration of gender satisfaction in distance and open education



The preceding graph 4.1 reflects a 59.92% of male learners and 68.75% of female learners who are satisfied in studying in distance and open education. This response seems to provide a remarkable confirmation that lifelong learning is realised in distance and open education. Interestingly, 68.75% of female learners tops the list, while 59.92% of males, follows. It can be argued that learner satisfaction in distance and open education is measurable in many ways. It does mean, though, that essentially, technological equipments for teaching and learning must be that of quality, and the programmes must be

truly attractive. One strategy is to combine resources to create strength. If the resources for doing so are not available, or are inadequate, learners become dissatisfied as indicated by the 40.05% of males and 31.25% of females.

About thirty-one percent (31.25%) of females indicates a worrying number of dissatisfaction. This was expected, since the nature of female and male operations are quite different. It is also important to understand that ‘satisfaction’ is an internal feeling which the lecturers would only be able to read from the learners’ performance. This is a feeling of isolation which cannot be ruled out in distance and open education.

A question was asked about what might have influenced the learners to study through distance and open education. Their responses are indicated in the following table:

Table 4.9: Learners’ influence to study through distance and open education

	Strongly Disagree	Disagree	Agree	Strongly Agree
Need to improve qualifications.	-	-	17(34%)	33 (66%)
Social factors.	7 (14%)	3 (6%)	34(68%)	6 (12%)
Quality courses offered.	6 (12%)	11(22%)	21(42%)	12 (42%)
Need to acquire knowledge.	-	3 (6%)	18(36%)	29 (58%)
Certainty of completion.	3 (6%)	11(22%)	25(50%)	11 (22%)
Availability of time to do other things.	3 (6%)	7 (14%)	11(22%)	29 (58%)
Improved ways of teaching and learning.	16(32%)	17(34%)	16(32%)	11 (22%)
Early commence with studies.	-	12(24%)	30(60%)	8 (16%)

The preceding table shows that learners who choose to study at a distance, are mostly influenced by social factors, as represented by 68% of those agreeing and 12% strongly agreeing. Given the situation that most learners in distance and open education are employers, employees and the retrenched from

different family backgrounds, this factor is weakly defended by 14% of those who strongly disagree and 6% of those who disagree. The indicated 60% are those who see distance and open education as an advantage to start early with their studies. This response adds weight on the social factors so that they get organised early. There are also striking responses scoring 58% on each of those who are strongly influenced by the need to acquire knowledge and the availability to do other things.

There is an indication of 32% representing the learners who do not agree to the statement that improved ways of teaching and learning could be an influence in studying through distance and open education. This can be interpreted as having the willingness and strong determination. These are the elements which are highly emphasized in distance learning to encourage the learners. On advertising distance and open education in the media, the higher education institutions do touch a point of quality courses offered. To this fact, there is an indication of 42% of the learners who agree and 24% of those who strongly agree. On the whole, the learners perceive distance and open education positively. There are aspirations to explore learning within a framework that is more meaningful, open and flexible.

Figure 4.2: Graphic illustration on what mostly influences learner enrolment

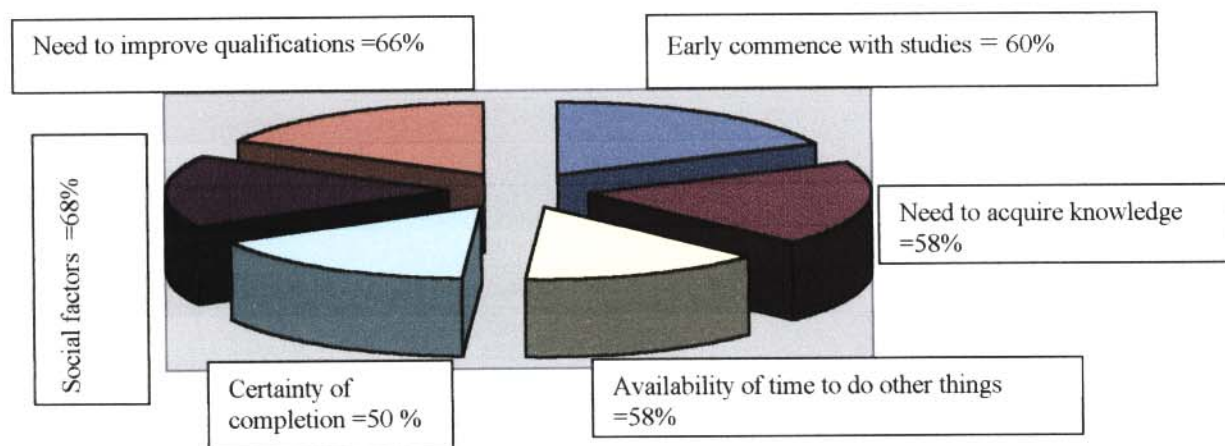


Table 4.2 has previously displayed the learners' level of study as 46% (first year), 28% (second year), 14% (third year) and 12% (fourth year). Serious considerations need to be made regarding the

depicted declining of numbers when the learners are supposed to climb the ladder of success in distance and open education. The reasons thereof could be read from the analysis of the following table:

Table 4.10: Learners' accessibility to the learning centre

Frequency Row %	Yes	No	Sometimes
I walk to the learning centre.	11 (22%)	23 (46%)	16 (32%)
I travel to the learning centre.	30 (60%)	16 (32%)	4 (8%)
I arrive late at the learning centre.	9 (18%)	25 (50%)	8 (16%)
Travelling makes me think of dropping the course.	19 (38%)	31 (62%)	-
I am unable to catch up the time lost through travelling.	14 (28%)	28 (56%)	8 (16%)

Table 4.10 indicates that sixty percent (60%) of the learners travel to the learning centre. Twenty-two percent (22%) of them walk, which suggests that the learning centre is nearer to their residential places and it is an added advantage to them. At the same time, the learning centre is not easily accessible to the majority (60%) of the learners. It is also indicated that 50% of the learners arrive late at the learning centre. This leads to the 62% of those who think of dropping the course, because they are unable to up the time lost through travelling, as indicated by 56%. It is, however, not easy to draw a line between the learners who walk and those who travel to the learning centre. But when looking at the responses indicating 'Sometimes', that is, 8% of those who sometimes travel, 16% who sometimes walk, 32% who arrive late at the learning centre, it can be argued that these percentages determine the urgent need for the learning centres to move towards the learners, more that the learners moving to the remote learning centres.

Table 4.11: Learners' perception of computer literacy

	Yes	No	Not sure
Have you been familiarized with computer before?	34(68%)	25(50%)	1(2%)
Do you have access on computers in your institution?	34(68%)	12(24%)	8(16%)
Is the access indicated in the preceding question time restricted?	26(52%)	23(46%)	1(2%)
I feel I needed computer training at the beginning of my studies.	40(80%)	10(20%)	-
Interaction with technology makes me feel socially accepted.	39(78%)	1(2%)	10(20%)

Having been familiarized with a computer before, table 4.11 indicates 68% of the learners agreeing, while 30% of them claim that they were not familiarized before. The differences in the two percentages, give a picture of why distance learners in higher education institutions perform differently when given the same task. Modern ways of communicating effective teaching and learning means that a learner has to be familiarized with computers at the point of entry in the studies. There are also observed percentages ranging from 20 down to 2, indicating the learners who are not sure of what it takes to be computer literate. Since these percentages are of less quantity, computer training at the beginning of studies would change the face. The high need for this, is indicated by an 80% of the learners vote's, especially when there is no indication in the table that there are those who are not sure in this aspect.

While sixty-eight (68%) of the learners agree that they do have access on computers at the institution, it may be concluded that the referred access is time restricted by 52%. Given the nature of the learners if left unmonitored, the time to spend on the academic matters is likely to suffer at the expense of them concentrating on other things of their own preferences. In an attempt to balance the access on computers and time, there is a realized striking response of 78% of the learners who allege that

interaction with technology makes them socially acceptable. These learners are actually anxious for information. If given the opportunity, the learners would develop a sense of self-direction, which will culminate in the sense of responsibility.

Below are the illustrations showing the level of learner-computer literacy at the entry point of study and the momentum gained during the course process:

Figure 4.3: Have you been familiarized with computers before?

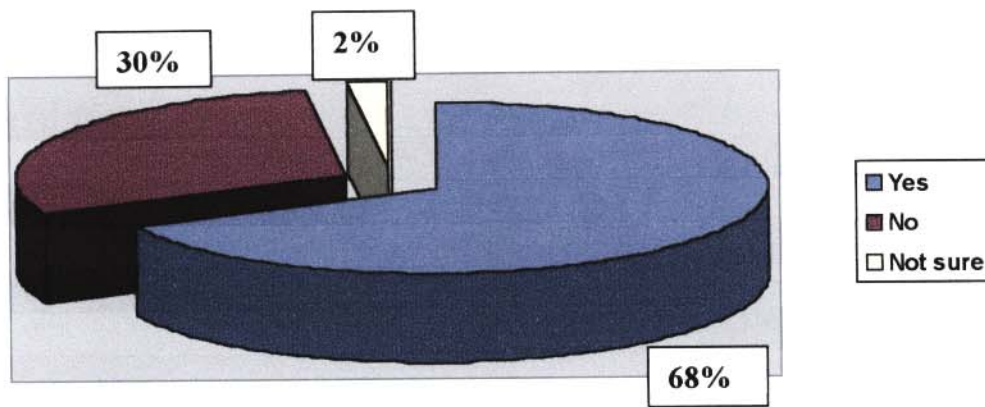
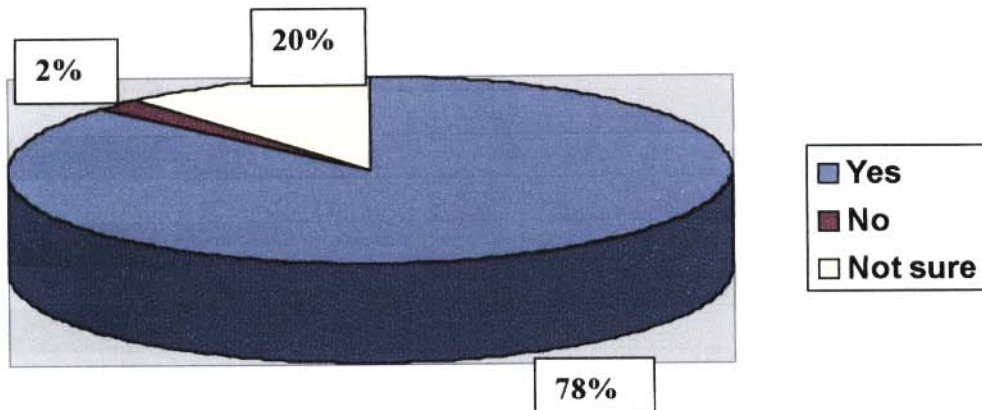


Figure 4.4: Interaction with technology makes me feel socially acceptable



In comparing the two given graphs, it becomes clear that, although most learners had an experience with computer communication before (68%), the number was soon increased by 10% so that they feel

accepted in the computer society (78%), which implies, learner-learner and lecturer-learner interaction. Again, among the number of learners who were not familiar with computers before (30%), later come to state that they are by 2% not feeling socially acceptable. This implies that, during the running of the course, telematic tuition changes the face of a learner and makes him/her deeply involved and engaged in learning.

4.4.3 Learners' views on the effectiveness of telematic tuition in distance and open education

Table 4.12: Learners's communication with assignments and feedback

	Strongly disagree	Disagree	Not sure	Agree	Strongly agree
Assignments are complex for my understanding.	7 (14%)	21 (42%)	11 (22%)	11 (22%)	-
I find it difficult to send assignments in time.	7 (14%)	18 (36%)	-	19 (38%)	6 (12%)
The dates to submit assignments are not well spaced.	9 (18%)	12 (24%)	-	23 (46%)	6 (12%)
Lecturers do not give guidance on how to go through the assignments.	5 (10%)	9 (18%)	10 (20%)	8 (16%)	18 (36%)
Lecturers accept late submission of assignments.	21 (42%)	14 (28%)	4 (8%)	8 (16%)	3 (6%)
Lecturers give immediate feedback.	17 (34%)	10 (20%)	18 (36%)	-	5 (10%)
Lecturers' remarks motivate me.	12 (24%)	16 (32%)	10 (20%)	1 (2%)	11 (22%)
I find it difficult to get reference material.	13 (26%)	2 (4%)	9 (18%)	1 (2%)	25 (50%)
I work hard to qualify for examinations.	11 (22%)	5 (10%)	-	13 (26%)	21 (42%)

Table 4.12 indicates that 42% of the learners are not faced with complex assignments. The nature of the content in higher education institutions is structured in such a way that it challenges thought. This

notion is well catered for by the lecturers, and the learners ought to respond by accepting the challenge. 46% of the learners complain about the dates to submit the assignments, that they are not well spaced, and by 36%, the lecturers do not give guidance on how to go through them. There are other difficulties that the learners experience in completing their assignments, for example, 50% of them find it difficult to send assignments in time. That being the case, 42% of the learners strongly report that the lecturers do not accept late submission of assignments. It is only by 6% that room is open for late submissions. A question of feedback plays a major role in distance and open education. Its success lies in its immediacy. On this score, 32% of the learners feel that the lecturers do not give immediate feedback. This, simply suggests that even if they do, the remarks are not motivating by 32%. However, 42% of the learners agree that they work hard to qualify for examinations. It is therefore suggested that there is a greater willingness amongst learners to account for their own success and failure. It cannot go unnoticed that lecturers should look into shaping their lecturing programmes and strategies.

In addition to the trends that emerge from the preceding analysis of data, it is useful to consider the following tables: 4.13 to 4.15, for they yield a number of results that in some respects provide cause for concern, when given the following questions:

Table 4.13: Dispatching of the study materials

Frequency row %	Yes	No
Do the lecturers dispatch study materials in time?	19 (38%)	31 (62%)

Sixty - two percent (62%) of the respondents represent the learners who complain that the study materials are not dispatched in time. Only a small 38% of were satisfied that the study materials arrived on time. In most instances, higher education institutions in distance learning open up registrations for the coming year while there is still time. They also go further to accommodate those who have been engaged in writing their final year examinations, by giving them a special time to register after the

results have been released. Therefore, the complaint that study materials are dispatched late, does not carry much weight. But the indicated 62% is high, and as a result informs us that the problem lies with management of the institution in question.

Table 4.14: Line of communication with the lecturers

Frequency row %	Always	Sometimes	Never
Lecturers are ready to communicate with me at any time of their working hours.	14 (28%)	25 (50%)	11 (22%)

The learners indicate by 50% that the lecturers are sometimes ready to communicate with them at any time of their working hours. The 'Sometimes' response is large enough to be interpreted as the learners' appreciation of the help line opened between them and the lecturers beyond the official set up time. Twenty-eight 28% of the learners express satisfaction and comfort and report that the lecturers are always ready to communicate with them.

However, twenty-two 22% of them indicate that they have never been successful in communicating with the lecturers at any time of their working hours. This is a communication breakdown which can easily be repaired if the learners could master the e-mail communication system. It is a system put in place so that future programmes could be refined in time, having in mind the nature of the learners in distance and open education.

4.4.4 Learners' future possibilities of the usage of telematic tuition

Table 4.15: Learners judging their own performance

Frequency row %	Yes	No	Not sure
Judging your own performance, do you feel encouraged to continue with your studies through distance and open education?	14 (28%)	10 (20%)	26 (52%)

Judging oneself is about self-evaluation. Table 4.15 indicates that 28% of the learners feel encouraged

to continue with their studies through distance and open education. It gives an impression that these learners are satisfied with their assignments and how they are being handled. But the very 28% is actually a threatening condition which tells that many learners are not happy with their performance, hence a 20% of those who do not feel encouraged to continue, plus 52% of those who are not sure. Hopes are invested in the 52% that they improve their performance at some stage.

Table 4.16: Learners' perceptions of their own learning styles

	Strongly disagree	Disagree	Not sure	Agree	Strongly agree
I rely on prescribed material.	6 (12%)	1 (2%)	6 (12%)	15(30%)	22 (44%)
I apply newly acquired knowledge in everyday situations.	3 (6%)	4 (8%)	21 (42%)	11(22%)	11 (22%)
I summarize important facts and principles.	-	7 (14%)	3 (6%)	17(34%)	23 (46%)
I memorize facts by speaking them aloud.	3 (6%)	16 (32%)	7 (14%)	4 (8%)	20 (40%)
I write down facts after memorization.	-	22 (44%)	-	11(22%)	16 (32%)
I interact with other learners through technology.	22 (44%)	12 (24%)	-	10(20%)	5 (10%)
I lack concentration.	5 (10%)	2 (4%)	13 (26%)	7 (14%)	23 (46%)
I rely on group study.	14 (28%)	8 (16%)	2 (4%)	13 (26%)	13 (26%)
I prefer to study alone.	9 (18%)	1 (2%)	1 (2%)	1 (28%)	25 (50%)
I prefer recording the content on tape and then replay.	29 (58%)	4 (8%)	7 (14%)	6 (12%)	4 (8%)

According to table 4.16, many learners prefer to study alone. This is marked by a 50% of those who strongly agree. The reason behind this strong reflection could be that the learners in distance education are remotely placed from each other most of the time. If contact sessions are less, it becomes difficult for them to co-operate and collaborate with others. Collaborative study promotes interaction when multimedia components such as video and audio are included in teaching and learning. Only eighteen (18%) of them disagree with this style of learning because it amounts to passive learning. Since eighteen (18%) of the learners reject solitary learning, they can be associated to the 28% of those who

strongly agree with group study. Second on the list is the skill to summarise important facts and principles, a learning style favoured by 46% of the learners. Third on the list is a 44% of those who rely on prescribed material. Bittel and Newstrom (1990:246) indicate that the learner in distance education is more dependent on course materials than are learners who participate in face-to-face instructional programmes.

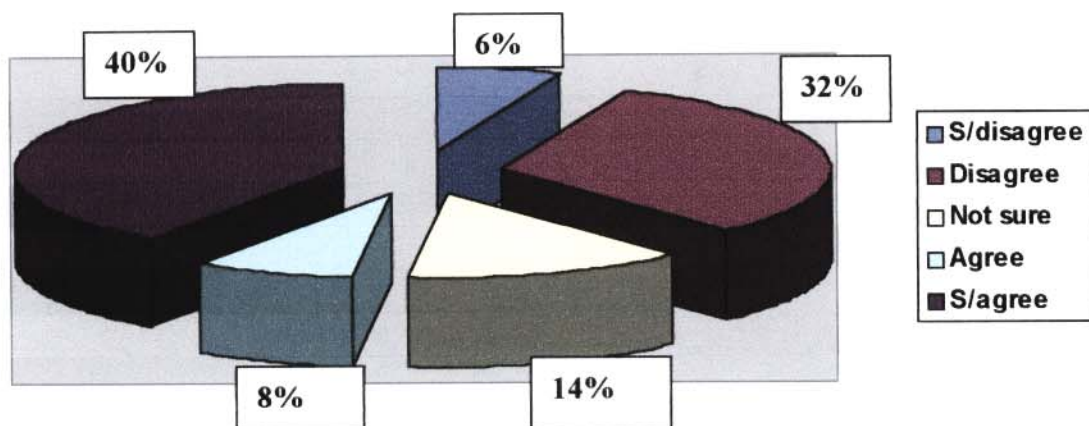
Drawing from the previously given 46% who are in their first year level of study in table 4.2, learners need to make use of reference work. Equipping them with this knowledge in their first year level of study, will motivate them to seek more information on their own. Quick references can be tapped from the computer. It is also important for the lecturers to include in the package of study material, the directive of reference material. There are also learners who report that they lack concentration. This is marked by a solid 46% of those who strongly agree, as against a 10% who strongly disagree. Learners in distance education are inclined to work under pressure. This could be because they have other job-related commitments besides the academic work. This has been proved by the responses of 58% in table 4.9, where they declared that in distance education, there is time available to do other things. Agreeing with this statement, has its own repercussions towards examinations when learners would lose concentration as the amount of work shall have doubled. Lack of concentration can also be attributed to having no understanding of the learning content. This problem leads to the memorizing of facts and principles, as indicated by 46% agreeing. Memorization is rote learning, where in the end, the learners shall have failed to become the owners of the learning content.

When asked about interaction with other learners, through technology, only a few 20% agreed, while 10% strongly agreeing. It can thus be argued that learner-learner communication at the higher education institutions of distance learning is minimal. Some learners still feel isolated in the presence of telematic tuition. Of concern, is a greater 44% on this item, of those who strongly disagree by reporting that they do not interact with other learners. What can be applauded is a 44% of the learners who apply newly acquired knowledge in everyday situations. When this happens, the aspect of critical outcomes in outcomes-based education is being adhered to. These are the learners with a contextualizing communication skills. The remaining 6% of those who strongly oppose this style of

learning, are in the minority, and therefore would be easy to be given attendance.

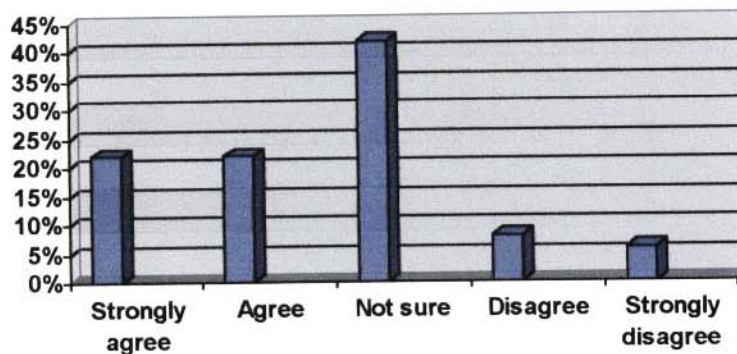
What becomes evident from the above explanations is the diversity and flexibility of the learners' opinions on common learning styles. The adoption of a specific learning style is not only determined by the inherent characteristics of the learner, but also by the nature and structure of the learning content and the teaching and learning media.

Figure 4.5: Graphic illustration of the use of memorization as a learning style



The given graph pictures show how the learners believe in memorization as a learning style. Forty percent (40%) of them strongly agree. The number grows when 40% is added to the 8% of those who agree. There is also a probability that some of 14% of the learners who are not sure whether the learning style they are using is memorization or something else, could be part of the believers in this learning style. Then the situation becomes even worse. Collectively speaking, these learners might not score any good mark in tests or examinations because it is easy for the lecturers to detect the memorized and reproduced answers from the study guides, which they themselves produced.

Figure 4. 6: Graphic illustration of the learners applying newly acquired knowledge in everyday situations as a learning style



In comparing the two given graphs above, that is, figure 4.5 and figure 4.6, twenty-two 22% of the learners strongly prefer the learning style that applies newly acquired knowledge in everyday situations, than 40% of the learners who strongly apply memorization learning style. According to mathematics law of approximation, 40% remains 40%, and 22% equals 20%. There is therefore a balance between the use of memorization and the application of newly acquired knowledge as learning styles in higher education institutions in distance learning.

But if the learning content would address the real life problems, and structured in a way that it is not complicated, the learners would not see the need to memorize facts and principles. As such, 40% would thin out, in favour of the learning style of applying newly acquired knowledge in everyday situations.

The category of 'Not sure' reveals that 42% of the learners apply newly acquired knowledge, as compared to 14% of those who are **not sure** of whether memorization works for them or not. There is somehow a promise that 14% would not last the test of time and hopefully be absorbed into trusting the learning style of applying new acquired knowledge in everyday situations.

On the whole, it needs to be indicated that most distance learners seem to be pushed or pulled by the set dates of assignments. At the time of examinations, they resort to memorization because they shall have not acquired much insight.

Table 4.17: Learners and their performance in telematic tuition

Frequency Row %	Low	Moderate	High
I am now able to interact with lecturers through technology.	14 (28%)	32 (64%)	4 (8%)
I am now able to interact with other learners through technology.	13 (26%)	22 (44%)	15 (30%)
I am now able to seek information through technology.	14 (28%)	21 (42%)	15 (30%)
I have now developed a positive attitude towards my studies.	10 (20%)	14 (28%)	26 (52%)
Contact sessions at learning centres make my studies easier.	11 (22%)	21 (42%)	17 (34%)
Communicating through the post makes my studies easier.	25 (50%)	14 (28%)	11 (22%)
Communicating through technology makes my studies easier.	10 (20%)	19 (38%)	21 (42%)
Teaching through technology is too fast for my learning pace.	22 (44%)	15 (30%)	13 (26%)
I have the assurance of obtaining results in time through technology.	10 (20%)	19 (38%)	21 (42%)

In table 4.17 above, the highest score of 64% represents the learners who report a moderate learner-lecturer interaction. These are the learners who can be better understood by applying behaviouristic theory which commands the importance of reinforcements in the learning process. In telematic tuition, technological reinforcements are needed, particularly for the learners who are partly happy and unhappy with lecturer interaction. In this case, the future of telematic tuition can be identified with usefulness and acceptance because it takes care of the learners who stand a high risk of dropping out.

The attitude towards technology communication varies according to the device used. This is supported by a 42% of the learners whose studies are made easier by technology communication. This response evokes questions such as: *Do the learners interact with other learners?* The responses to the question stand at 30%, reporting the extent at which the learners are engaged with each other, and a 44% of those who are moderately engaged. Again, if technology communication makes their studies faster by 42%, *are they able to interact with their lecturers?* To this question, 8% agree totally, while 28% rate themselves at low.

When asked to confirm their ability to seek information through technology, their responses show a 30% high, 28% low and 42% moderate. This suggests that, besides mere typing of their own assignments, the learners are able to explore internet and other programmes which carry progressive information. If the language of the computer could be interpreted correctly, a word like '*virus*' would not confuse or discourage the learners. As for the future of telematic tuition, it can be postulated that a laboratory assistant has never been of high need like this before. Certainly, the responses given, tend to be weighed towards a solid way of teaching and learning in distance and open education, which is, telematics.

Looking at the question which addresses how contact sessions at the learning centres affect their studies, 34% of them expressed positiveness. These are the learners who regard contact sessions as a chance to make relations with others. Group studies are formed during this type of sessions. Twenty-two (22%) of the learners feel that contact sessions do not make their studies easier anyway. Quickly, one needs to state in passing that contact sessions have a lot to do with human media which carry the characteristics of smiles and other positive gestures. If the learners stay far away from the learning centres, contact sessions would not assist them much because of the expected absenteeism or late arrival. Forty-two (42%) of the learners in this statement report that their studies are moderately easier because of contact sessions. From such responses, telematic tuition has a way forward to be trusted because it does not only deal with machines, but understands that lecturers as human media, need to show up and personally address certain problems as indicated by the percentages stated.

Communication through post is rated low by 50%, that it does not make the learners' studies easier. This attitude could be attributed to the assignments which often get lost when mailed. However, the reported response of 22% indicates that some learners still have trust in postal communication. It does not necessarily mean that the postal means of communication loses its status in telematics, but its importance is actually indicated by the 28% of those who view it as moderate. It therefore goes without saying that the success of telematic tuition regard postal services as the foundation on which other modes of teaching and learning are built.

It is alleged that technological tools like computers, store a lot of information, as much as teleconferences and videoconferences are informative. Some learners could be slow in understanding how these are able to put across information, and at the same time expecting them to learn. A question was asked to get their feelings on whether technology is too fast for their learning pace. The responses were as follows: 44% low, 30% moderate and 26% high. A closer look at the responses tells that the majority of the learners standing at 44% are able to cope with the fastness of being taught through technology. Twenty-six (26%) of the respondents claim that teaching through technology is too high for their learning pace. On the other hand, telematic tuition prepares the learners beforehand through the study materials received at the point of entry in their studies. On this note, the future of telematic teaching and learning in higher education institutions can be said to be accommodative, for as long as the learners arrange their studies logically.

As for the item of having the assurance of obtaining results in time through technology; learners showed high hopes with 42%, 38% with mixed feelings indicating moderate, and 20% of those who are low-spirited. The assumption is that, as soon as the results are mentioned, learners tend to look back and inspect their ways. This is the reason why there is a 20% feeling of losing trust in the early delivery of results through technology. At this stage, it would not be easy for these learners to start trusting technology when they at some stages, indicated that they are unable to communicate through it. For future use, the possibility is strong that telematic tuition in higher education institutions is to be seen as reliable.

4.4.5 Lecturers and their perception of distance and open education

Table 4.18: Lecturers' access on the availability of policy document

	Yes	No	Total
Numerical weighting	1	2	
Number of responses	10	-	10
Percentage	100	-	100

The quality of learning in distance and open education is firmly based on the availability of and access to a well-defined policy document. A question was asked whether the lecturers are aware of the availability of a distance education policy in their institution. They all responded positively by 100% that they are aware. Towards such a response, it can safely be said that the institution is aware of what it is doing. Hopefully, the content of the policy carries weight.

Table 4.19: Lecturers' responses regarding access to the policy document

	Yes	No	Total
Numerical weighting	1	2	
Number of responses	8	2	10
Percentage	80	20	100

It has been discovered that not all the lecturers have access to the policy document because 20% of them reported negatively. The reason why 20% do not have access to the policy document could partly be attributed to the previously alleged 20% of the lecturers on part-time basis. At the cost of classifying employees and attaching qualificative terms to them as 'part-time', such lecturers happen to miss other important documents carrying information concerning their work. This needs to be looked

at from the angle which questions: ‘*Don’t the part-time lecturers perform the same function as the contractually employed?*’

Drawing from the responses regarding teaching experience in tertiary institutions (Table 4.6), which is indicated by 40% between 4 to 6 years, 50% between 7 to 9 years, and 10% from 12 years onwards, a policy document needs to be available to all the lecturers. As it is, only 80% of the lecturers are able to have access on the policy document. Well, this can be an acceptable percent, when taking into consideration the impression set that the policy document is accessible to a large extent. It also gives an estimation of how open the institution is.

Nonetheless, one of the lecturers gave the following reason for not having access on the policy document:

‘I have not tried to obtain it yet.’

Such a response shows some kind of reluctance from the side of the lecturers, particularly if the reporter is contractually employed as it is the case in this research. On the other hand, it is mostly the duty of management to see to it that a policy document is made available to the employee at the time of employment.

Table 4 20: Lecturers’ satisfaction regarding the policy document

	Yes	No	Total
Numerical weighting	1	2	
Number of responses	10	-	
Percentage	100	-	100

Interestingly, table 4.20 above, indicates that 100% of the lecturers, both part-time and contractual, report that they are satisfied with the content of the policy document. Such a tremendous response, throws the minds back and tracks the earlier report that 20% of the lecturers do not have access to the

policy document. The question arises that: *How can the referred 20% of the lecturers, later come to report that they are satisfied with what they do not possess?* Yes, the accessibility of the document can be formal or informal. Some information is able to filtrate informally between quarters, especially if the content pleases the lecturers as indicated in the table above.

On the whole, matters concerning the policy document give the understanding that all lecturers understand the dynamics of distance and open education in higher education institutions.

Table 4.21: Lecturers’ perception of the learners’ enrolment in distance and open education

	High enrolment	Moderate enrolment	Low enrolment
Numerical weighting	1	2	
Number of respondents	1	7	2
Percentage	10%	70%	20%

Seventy percent (70%) in table 4.21 indicates that most of the lecturers, somehow, do not complain about whether class sizes are large or small. They have the mechanism of handling such enrolments. A ten percent (10%) of the lecturers in the table which indicates high enrolment, implies that lecturers do experience some problems. This is a group which most probably needs assistance so that their ways of teaching and learning do not affect the student population. In most cases, when the lecturers express feelings of despair, it could be that there is a lack of educational media to enable them to handle high enrolments. Twenty percent (20%) of the lecturers feel different from others as they claim to be experiencing a low enrolment of the learners. It becomes clear that, what others interpret as high and moderate, is reduced to low by 20%. This score informs us that the learners’ enrolment at the institution does fluctuate. But fluctuation does not necessarily suggests a threat towards teaching distance learners in higher education institutions. Also, in the event of small classes, lecturers do get the opportunity to do research in their interested fields, telematic tuition in particular.

In the event of teaching small class sizes in an on-campus mode, lecturers' offices suddenly turn into teaching and learning environments. Distance education does not get affected by class sizes anyway, and this is the reason why many lecturers standing at 70% interpret the enrolment as moderate. To add on that, the employment of telematic tuition is able to balance the high and low enrolment of learners.

Table 4.22: Lecturers' interpretation on what influences learner enrolment

Frequency Row %	Yes	No	Uncertain
The type of courses offered.	10 (100%)	-	-
Quality teaching.	8 (80%)	2 (20%)	-
The openness of the institution.	8 (80%)	2 (20%)	-
Strong support services.	2 (20%)	8 (80%)	-
Committed learners.	6 (60%)	4 (40%)	-
The institution having a sense of direction.	9 (90%)	1 (10%)	-
Critical thinking about the learners' needs.	4 (40%)	3 (30%)	3 (30%)

Table 4.22 indicates that 100% of the lecturers feel comfortable with the type of courses offered at the institution. They believe that the majority of the learners are impressed with these courses, and therefore happen to come in affordable numbers to study with the institution. According to the table, there is no lecturer who negates this statement, as much as there being no indication of uncertainties.

But in teaching and learning, methods of communicating the learning content get improved yearly, hence the implementation of telematic tuition. At this point, mention is made that most lecturer population in other former departments at higher education institutions are not trained as lecturers. This is a group which is most probably represented by 20%, that sees quality teaching as a non-influence in learner enrolment.

Quality teaching and the openness of the institution, score a positive 80% each. With such high scores, the lecturers regard these factors as being effective in keeping the image of distance and open education viable. From their capacity as lecturers, the 80% indicated, emphasizes the importance of strong support services. The fact that these factors, second and third, are negated by 20% each, reiterates the problem of thinking that the lecturers do not need help in matters concerning teaching and learning, which is not the case.

Distance education in South African higher education institutions has been marked by its openness for years. It (distance education) has long gone democratic before the books of law could indicate the changes. Interestingly, 20% of the lecturers do not attribute the institutions' enrolment as being highly influenced by this factor. At the cost of referring back to table 4.21, 20% indicating low enrolment puts pressure on higher education institutions to be equally open to all races so that the enrolments improve, particularly in distance education.

Learners get committed through assistance. Relevant courses, quality teaching, the openness of the institution, and being critical about learners' needs, will make the students become committed learners. Along with this idea, 60% of the lecturers understand them (committed learners) to be influential in learner enrolment positively. In distance education, the learners are evaluated in the way they handle assignments. Immediately, when 60% drops to 40% as indicated in table 4.22, the institution is on the brink of losing its sense of direction. From the table, it is indicated that 90% of the lecturers have high regards for the institution's sense of direction as the one which brings forth favourable learner enrolment, as against a 10% negating the statement.

One aspect in which the lecturers responded differently from all other statements is: *critical about learners' needs*. By forty 40%, lecturers believe the statement as influencing learner enrolment, 30% of them do not agree, while another 30% feel uncertain. *Why the split of ideas into three categories?* A few deductions can be made from these distributions. It appears as though the number of lecturers who disagree, equal those who are uncertain in a sense that they all scored 30% each. Learners' needs are embraced in the planning of distance education. These are: knowing their customers (learners) well, selection of the learning content, formulation of aims and objectives, as well as the selection of teaching methods.

Finally, it is apparent that the lecturers who feel uncertain, are seen as lenient on being critical about the learners' needs. Alternatively, it can as well mean that the lecturers are critical about the learners' needs. In actual fact, they all need to be collected and directed towards building a strong influence in learner enrolment. Secondly, 30% of the lecturers disagree point blank that being critical about the learners' needs cannot be attributed to the influence in learner enrolment. The bottom line is that, there is more to the response than what is indicated in the table. The thought has been registered that the institution's enrolment stands at 20% low, according to the perceptions of the lecturers. Holding to this report, thirty percent (30%) of the lecturers feel that much is still to be done to address the learners' needs critically. It can therefore be safely argued that the 30% negative response to the statement in question, is actually an expression of concern towards the principle of totality.

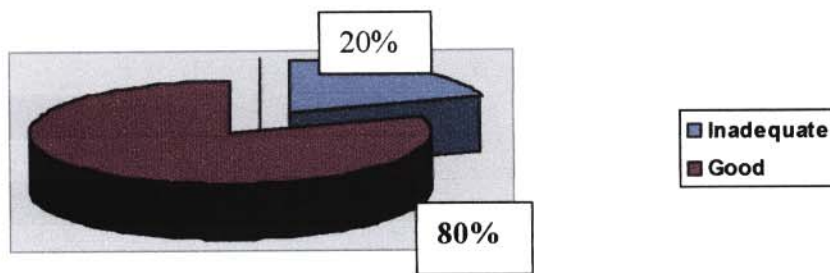
Table 4.23: Lecturers' perception on learners' pass rate in distance and open education

Frequency Row %	Numerical weighting	Number of responses
Excellent	1	-
Good	2	8 (80%)
Adequate	3	-
Inadequate	4	2 (20%)
Grossly inadequate	5	-

Table 4.23 reveals that there is no reaching of borders of 'excellent' and 'grossly inadequate'. Eighty (80%) of the lecturers rate the learners' pass rate as good. It then has to be mentioned that what is addressed is not only goodness about learners' pass rate, but also about how much and how far the lecturers have ploughed. A pass rate in distance and open education is calculated on the basis of experiential learning at a review stage. If little was done, the pass rate will be inadequate as indicated by a response of 20%.

Collectively, the lecturers' responses indicate a comfortable pass rate in their institution, which also addresses a pass rate in distance education.

Figure 4.7: Graphic illustration of the learners' pass rate in distance and open education



The given graph illustrates that the lecturers regard the learners as extremely good (80%) in terms of their pass rate. A pass rate is actually determined by the whole process of working together, both lecturers and learners. However, in the pass rate, there are learners who have been applying all these styles of learning, but a deep approach learning style is mostly attached to the lecturers' pass rating. Twenty 20% of them say that the pass rate is inadequate, and that in itself indicates that extra effort need to be exerted.

The picture depicted could be an important aspect which higher education institutions could focus on in their marketing strategies.

Table 4.24: Lecturers' responses on the mode of delivery in distance and open education

	Strongly disagree	Disagree	Agree	Strongly agree
Taped cassettes	2 (20%)	1 (10%)	7 (70%)	-
Broadcast radio	2 (20%)	4 (40%)	4 (40%)	-
Broadcast television	-	-	7 (70%)	3 (30%)
Contact teaching mode	-	-	7 (70%)	3 (30%)

In analysing Table 4.24, it becomes evident that lecturers regard the institution as maintaining a contact mode which stands at an agreement of 70%, and strongly agreeing at 30%. This is significant, probably as a result of the establishment of learning centres. It is a mode of teaching and learning which includes personal appointments between lecturers and learners, even beyond what stands in the management books, hence the strong emphasis by 30% from those who strongly agree. It is only realised that the other modes of delivery like broadcast television and taped cassettes, are also maintained at a stand point of 70% each. Forty percent (40%) of the lecturers report that broadcast radio is not a prominent delivery mode at the institution, for it shares an equal amount of percentage with those who agree. Nevertheless, it is an aspect which higher education institutions in distance and open education could focus on in their teaching strategies. Taped cassettes, in particular, are the first communication means between the lecturer and the learner before any other delivery mode can be implemented. This mode is able to reach the learners in time immediately after registration, including those in the rural areas. There is a twenty percent (20%) of the lecturers who strongly disagree, and 10% of others who simply disagree, claiming that the taped cassettes are not maintained as a delivery mode. This is probably because as time goes on, the focus shifts from taped cassettes to broadcast television with its strong characters of voice and vision. No wonder why there is still an extra 30% of the responses strongly declaring broadcast television as a maintained delivery mode. The responses generally highlight that all the modes of deliveries mentioned above, are important to the institution,

taking into consideration their character uniqueness.

4.4.6 Lecturers and telematic tuition training

Table 4.25: Lecturers' perceptions of telematic tuition training

	Yes	No
Did you receive any training in telematic tuition?	2 (20%)	8 (80%)
Does your institution give support to train in telematic tuition?	8 (80%)	2 (20%)

Table 4.25 indicates that only 20% of the lecturers received telematic tuition training, while 80% have not. This eighty 80% report of untrained lecturers, does not immediately or necessarily indicate admitting to inferiority. The information contained provides insight into how can the institution assist the lecturers to adjust to telematic tuition so that its customers are served better, to an extent of positioning itself to competitors. A response to the second statement, standing at 80% positive, is actually an institutions' awareness of the situation, that telematic tuition training for the lecturers is more than a need. It is by 20% that the lecturers report negatively to the institutions' support to telematic tuition training. The reason could be that the expectations of the lecturers are higher than what the institution can offer, thus making them (lecturers) feel not at ease. On the whole, the institution has clearly set a willingness impression towards telematic tuition training of lecturers.

Items 15; 16.1 and 16.2 reflect the opinions of the lecturers regarding their observations and experiences on how distance and open education takes place in their institution. These will therefore be analysed concurrently as:

Item 15: When asked to give their opinions on how distance and open education contribute to teaching and learning in their institution, the following response was recorded:

- 'It provides opportunities not otherwise possible.'

When looking back at what mostly influences learners to study through distance and open education, the given response is a testimony from the lecturers' capacity. Lecturers are actually confirming that distance and open education provides opportunities for many people as long-life learners.

Item 16.1: When asked to give their opinions regarding the strength of distance and open education, the following were highlighted:

- 'Great internet and television possibilities.'
- 'Bringing the 'workplace' institution in the classroom.'
- 'Gives the learner the opportunity to do own or self-study and thus he becomes more self-sufficient.'

The first statement emphasizes the strength of computer (internet) and television in distance and open education, which implies that, the status of this mode of learning has been elevated to suit the present era of the power of information. With computers, learners and lecturers are connected to the world through the internet. Interactive television bridges the distance gap between the lecturer and the learner. The third statement seems to match well because the learner is expected to surf information from the internet on his/her own. Lecturers are generally satisfied with distance learners who are immersed in an avalanche of information.

The second opinion amplifies the idea contained in the first and third opinions given, that, the learning place becomes a workplace. In other words, learners in distance and open education are able to discard passiveness and change to become active participants in the institution. Lecturers in this study have high expectations of their learners in terms of acquisition of literacy and motivation to learn. According to Idrus (1993:3-11), participation has important positive implications for social and academic development of the learners.

Item 16.2: When asked to give their opinions regarding weaknesses of distance and open education, the following remarks were recorded:

- ‘Cost, time, co-ordination of all parties involved.’
- ‘Poor communication between distance and main campus.’

The first statement can be referred to as the highest level of weakness in distance and open education. Cost, time and co-operation of all parties involved can be interpreted as local weaknesses which involve the learners, lecturers and management. It does not necessarily mean that for them being local, simplicity is the answer. The truth is that it is actually at the local level where things easily go out of hand if unmonitored. Adaptations and adjustments to meet the demands of distance and open education are needed.

The concept of ‘cost’ refers to quality as a structured process for improving the output produced, (Arcaro, 1995:55). If distance education programme is not well managed, drop-out and failure rate of learners increase, thus rendering the whole process of distance and open education costly. Needs assessment is the core of the budget for distance education, because it allows the study of the customers as a set of interrelated systems of the programmes.

The second statement complains about poor communication between distance and main campus. The statement brings to light about the establishment of satellite teaching and learning centres which ought to represent the main campus. Poor communication between them can be attributed to inefficient planning. Having in mind that tutors are employed to tackle the learning content originally prepared from the main campus, as well as to solve the sudden problems of the learners, lines of communication between distance and main campus need to be open and reachable. It boils down to making use of computer conferencing (e-mail) to address and solve the problems with ease before they take a different shape.

Table 4.26: Institutions' management support to telematic tuition

	Very supportive	Occasionally	Never supportive
Numerical weighting	1	2	3
Number of respondents	2	8	-
Percentage	20	80	100

Table 4.26 indicates that the Management of the institution occasionally supports telematic tuition by 80%. It is only 20% of the lecturers who feel that management does its best in this area. Telematic tuition as the focus of this research, is reflected as not getting enough support from Management. Management is supposed to look into the planning, control and implementation of telematic tuition programme. The fact that none of the lecturers report management as never supportive, is quite encouraging. It therefore suggests that lecturers are seeing something that makes them not lose hope. Such a feeling does not come as a surprise in higher education institutions which are still at a lower phase of telematic teaching and learning. However, it is up to management team to see the phases to be developing and moving to upper phases.

Table 4.27: Experience in telematic tuition training

	Formal	Informal
What kind of training did you receive?	-	10
Percentage	-	100

Table 4.27 reflects lecturers' perceptions of their experiences in telematic tuition training. The overwhelming majority of the lecturers standing at 100% have been trained in telematic tuition. The fact that the training referred to, has been obtained informally, much remains to be desired. Informal training does not have standards of measurement, since these lecturers could have been trained more or less than others. Such differences bring a pathetic situation in telematic tuition in a sense that the lecturers' improvement would depend on the mercy of others. To bring the situation under control, organised formal training seem to be the answer because records shall be kept. It has to be added that telematic tuition that is based on trial and error training amounts to no uniformity.

Table 4.28: Viewing the received training in telematic tuition

	Very important	Important	Not important	Not sure
How do you rate the training you received in telematic tuition?	-	2 (20%)	-	8 (80%)

Table 4.28 indicates that twenty percent 20% of the lecturers rate telematic tuition as important. The majority of them are not sure by 80%. The latter percentage gives an indication of the reality which the lecturers are facing in teaching and learning, that it contradicts with the training they received. Nonetheless, to some, informal training received is valuable by 20%. What quickly crosses our minds is to question: *What kind of teaching and learning could be taking place when the lecturers feel not at ease as depicted?* One may also question *why 80% of the lecturers preferred a not sure response?* The simplest answer could be that the lecturers felt the impact that way. But there may be another possibility that the lecturers, with their teaching expertise and experience in tertiary education

institutions, are in a better position to record better considered opinions.

Table 4.29: How telematic tuition training is addressed

	Not at all	Minimally	Extensively
Lecturer-learner interaction	-	-	10 (100%)
Lecturer-content interaction	-	-	10 (100%)
Video-conferencing	-	8 (80%)	2 (20%)
Computer-conferencing	-	8 (80%)	2 (20%)
Teleconferencing	2 (20%)	8 (80%)	-

The majority of the lecturers entered an ‘extensively’ training response for the statements of lecturer-learner and lecturer-content interactions. These statements stand unopposed since they address the core business of teaching and learning. Such feelings reveal that many lecturers are provided with knowledge and skills that could have positive implications in telematic tuition. It is also indicated that 80% of them entered a ‘minimally’ response in statements having to do with video-conferencing and teleconferencing. Though the training was informal, it nevertheless, addressed burning issues which can be referred to as the engine of telematic tuition.

Notice is taken that 20% of them report that they were extensively trained in video and computer conferencing. The culture of computer conferencing is such that a participant can add and reply to any topic at any time. This helps to keep the topics updated while allowing other topics to be introduced as the conference evolves. From the table, only a few 20% benefit from such a conference.

All in all, what is seen as good in the table, may as well be seen as unreliable because of informal

training received.

When asked to state the reason why teaching has not improved after training, the following response was given:

- ‘Not enough opportunities for application.’

Such a response suggests that informal training itself, need not be seen as non-functional or disorderly as it sounds. Greater opportunities like the teaching environment need to be open and structurally relevant for application of what acquired from training. If not, the expertise of a formal training would fail to be realized in teaching. It needs to be realized that 20% of the lecturers consider training as important, while 80% are not sure.

4.4.7 Lecturers’ views on the effectiveness of telematic tuition in distance and open education

Table 4.30: Time spent with the learners

	Yes	No
Is time spent with the learners allowing you in getting to know them better?	10 (100%)	-
Is time spent with learning assisting them to improve their performance?	10 (100%)	-

From the preceding table, it is indicated that the lecturers standing at 100% enjoy their time spent with the learners. Whether the time is spent during contact sessions or through conferencing, it bears fruit. Telematic tuition respects each minute spent. That is the reason why it opens various ways of spending time with the learners so that they do not feel isolated.

Table 4.31: The problems encountered in telematic tuition

	Yes	No	Occasionally
Do you encounter problems with learners who do not observe the stipulated time in sending assignments?	-	4 (40%)	6 (60%)
Do you encounter problems with learners who do not honour the appointments?	-	-	10 (100%)

Table 4.31 reveals that sixty percent (60%) of the lecturers occasionally encounter problems with learners who send their assignments late. This problem can lead to a stage where learners totally not submit any assignment, and in the ultimate, would drop out. Because the problem is reported as standing at 60%, could be taken with serious light. It needs to be noted that even though distance and open education gives the learners the opportunity to commence with their studies quite early in the year, many learners still register their courses in the last hour. It is always said that good beginnings have good endings. The time space between the last date of registration and the first date of assignment submission should agree and allow the learners to breathe. Forty (40%) of the lecturers report that they do not encounter such problems. It differs from departments to departments.

Besides formal contact sessions at the learning centres, lecturers and learners are able to make internal and informal arrangements for appointments. All hundred percent (100%) of the lecturers report that the learners occasionally give them problems. This is a question of time frame and the type of problems to be solved.

Table 4.32: Rating of own abilities in telematic tuition

	Easier	Better	Complicated
Teleconferencing makes my teaching	5 (50%)	5 (50%)	-
Computer conferencing makes my teaching	9 (90%)	1 (10%)	-
Video conferencing makes my teaching	2 (20%)	8 (80%)	-
Paper-based communication makes my teaching	-	10 (100%)	-
Contact mode makes my teaching	-	10 (100%)	-

A quick glance at Table 4.32, tells that most of the lecturers feel better with telematic tuition programme tools. They report that they find it easier by 90% in their utilization of computer conferencing, 100% better in utilizing paper-base communication, and 100% better in utilizing contact mode. One would commend that these are pillars in determining their own teaching abilities in telematic tuition. There is an 80% report that video-conferencing makes their teaching better by 20% easier. The question is: *Better than what?* From the scale used, it seems the lecturers rate their abilities in telematic tuition as good, because no method is better than the other.

The issue of teleconferencing scores a 50% easier and 50% better abilities. The equal feelings observed, stem from the understanding that the lecturers teach in a classroom based at another different place. Furthermore, the learners are unable to go to the lecturer after the lesson. Both lecturers and learners need to support each other. The responses show that there is no gap between the abilities of easier and better when the lecturers have to rate their usage of teleconferencing. They therefore can be seen as being able to teach the teleconferencing way.

Table 4.33: The learning approaches

	Highly effective	Somehow effective	Ineffective
Collaborative learning	20 (20%)	8 (80%)	-
Co-operative learning	8 (80%)	2 (20%)	-
Group learning	8 (80%)	2 (20%)	-
Individual learning	2 (20%)	8 (80%)	-
Negotiation learning	2 (20%)	8 (80%)	-
Deep approach learning	-	10 (100%)	-

The responses show that the indicated learning approaches seem to be feeding each other. This can be based on the fact that individual learners would form a group, as much as a group would split into individual learners who would seek information from media centre on their own. From the above table, the two learning styles, co-operative and group learning, score 80% each as highly effective. This indicates their equal strengths. In distance and open education, learners are able to survive on both individual and group learning. They usually register as individuals, but later come to discover themselves and thus form groups. The lecturers are able to read assignments of the learners who have possibly grouped, as well as those worked as individuals. A point here needs to be clarified : that group learning is inefficient without co-operative members. On the issue of co-operative learning, lecturers' response stand at 80% and highly effective. It suggests high expectations of positive performance from the learners. By a total of 100%, lecturers indicate that deep approach is somehow effective in distance and open education. There appears that the lecturers have a misty picture about deep approach to learning, which carries with it the horizontal and vertical digging of the learning content. Until lecturers cease to interpret deep approach to learning as deep down digging only, other learning approaches would remain standing as isolated.

The remaining collaborative and negotiation learning score 80%. The lecturers feel that these learning approaches are somehow effective in distance and open education. It means that the majority of the learners are inconsistent in applying these learning approaches, or else, the learners use them unaware. There is a lot of correspondence taking place between the lecturers and the learners. In between, dates of submission of assignments are negotiated and therefore keep on shifting.

Based on the overall responses, it can be argued that lecturers are generally satisfied with how the learning approaches work for the learners, as much as the learners using them. It is also observed that none of the lecturers consider the referred learning approaches as cold. It serves as a reminder that these are the lecturers who initially indicated their tertiary teaching experience as 4 years onwards.

It is indicated in table 4.29 that the lecturers have altered patterns of interaction with learners. If lecturer-learner interaction stands at 100%, it becomes evident that there is less communication breakdown in between, if not none. It is lecturer-learner communication which maintains control in distance and open education by way of picking up problems cropping in during the course of the study.

4.4.8 Lecturers' future possibilities of the usage of telematic tuition

Table 4.34: Description of the level of competence needed to facilitate telematic tuition

	High need	Some need	No need
Computer literacy.	2 (20%)	8 (80%)	-
Developing teaching-learning techniques.	1 (10%)	9 (90%)	-
Implementing teaching –learning theories.	-	10 (100%)	-
Developing positive attitude towards learners.	10 (100%)	-	-
Discussing learners' performance with other lecturers.	1 (10%)	9 (90%)	-
Discussing technological problems.	10 (100%)	-	-
Utilization of technological media.	10 (100%)	-	-

Table 4.34 reveals that eighty percent (80%) of the lecturers feel that there is some need of computer literacy for effective telematic tuition. This feeling is more emphasized by a 20% high need indicated. If added together, a strong feeling emerges that each lecturer should have access on computer, so that he/she continues practicing what was acquired in training. Such responses indicate that telematic tuition makes high demands from the side of lecturer-competence.

All the lecturers agree that there is a high need in the utilization of technological media. Lecturers are of a feeling that it makes them competent in facilitating telematic tuition effectiveness. Such a response is related to their reaction to the high need of computer literacy in a sense that, computers as technological media, need to be utilized for communication purposes.

Technological tools need to be constantly updated. To this statement, hundred (100%) of the lecturers express a feeling that there is a high need to discuss technological problems. This is another way in which the lecturers share their successes and frustrations so as to see telematic tuition being effective. In discussing learners' performance with other lecturers, 90% feel that there is some need to do so, while a high need is indicated by a 10%. The majority of the lecturers seem to be jittery about this statement. There could be a belief that some lecturers are self-centred to an extent of owning the learners' problems and doing nothing with it. The discussion of the learners' performance would address the teaching –learning techniques as highly needed by 10%, and 'some need' standing at 90%. If the referred statement could be made to work, lecturers would develop positive attitudes towards learners. There is a high need standing at 100% to change the negative attitudes towards learners. Less one forgets the road that South African higher education institutions travelled up to present position. The statement actually addresses the openness of the institution through the eyes of the lecturers.

Theories investigate teaching and learning process. A hundred 100% response from the table tells that there is some need to implement teaching – learning theories in telematic tuition. A learner before a screen in a distance learning setting, experiences some learning problems. Lecturers may ask themselves whether the principles used in the instructional technology are adequate. All the lecturers

state by 100% that reference to teaching-learning theories is needed to add competence in their teaching.

Table 4.35: The effect of telematic tuition on the learners' performance

	Mostly positive	No observable change	Mostly negative
What has been the effect of telematic tuition on the performance of the learners in your institution?	10 (100%)	-	-

Table 4.35 reveals that hundred percent (100%) of the lecturers are mostly positive about the learners' performance. It therefore suggests that the lecturers see telematic tuition as being helpful to them.

Table 4.36: Telematic tuition as a solution to high failure rate

	Yes	No
Do you regard telematic tuition as a solution to high failure rate in your institution?	10 (100%)	-

The high failure rate in higher education institution employing distance learning, has long been a cause for concern for long. The table above reveals that 100% of the lecturers see telematic tuition as a solution to high failure rate. According to their observations, telematic tuition has become a handy way of teaching.

Table 4.37: Physical boundaries as a constraint to telematic tuition

	Yes	No	Not quite sure
Do you regard physical boundaries as a constraint to the learning process due to new technologies in education?	-	2 (20%)	8 (80%)

As shown in table 4.37, eighty percent (80%) of the lecturers are not quite sure about the physical boundaries as a constraint in the learning process, even in the presence of new educational technologies. In other words, the term ‘distance’, remains a geographical term since its impact is still felt by the lecturers and learners in distance education. Since a ‘not quite sure’ response is a two coined side, one can still argue that the same percent of the lecturers are hopeful that these physical boundaries are threatening to fall if technological equipments in education could be used appropriately. However, there is a 20% of those who still feel that they are hampered by physical boundaries to execute their work properly. A closer look at such responses, throws minds back to item **16.2** where the lecturers complain about poor communication between distance and main campus.

Table 4.38: Lifelong learning and telematic tuition

	Yes	No	Not sure
With regard to lifelong learning, telematic tuition in distance and open education is cost effective.	8 (80%)	2 (20%)	-

Cost effectiveness supposes all the ingredients which are delivered to the learner, like, lecturers, tutors, teaching methods, printed and audio-visual material, electronic media, learning centres and organization of time. Table 4.38 indicates 80% of the lecturers agreeing with the cost effectiveness of telematic

tuition in distance education. In the context of lifelong learning, the indicated positive high response confirms that the effectiveness of telematic tuition is far more reaching than the cost. There is also a 20% of the lecturers who see things differently. This marks a little difference but has a strong impact in a sense that the costs need to be considered, so that lifelong learning finds its meaning in distance and open education.

Table 4.39: The effect of telematic tuition regarding learners' performance

	Strongly agree	Agree	Disagree	Strongly disagree
The lecturers are willing to teach through telematics.	-	10(100%)	-	-
The learners are able to cope with telematic tuition.	-	8(80%)	2(20%)	-
Telematic tuition relieves the lecturers from work burden.	7(70%)	-	2(20%)	1(10%)
Telematic tuition needs some modification.	2(20%)	8(80%)	-	-

Table 4.39 gives an exposition of the whole telematic tuition programme, and forecasts its future possibilities of success. In the analysis of the table, it becomes evident that 100% of the lecturers show willingness to teach through telematics. A total of 100% willingness, supposes that the academic reputation of the institution ranks first because the response is unopposed. The reason behind the willingness to continue teaching through telematics is that the learners are able to cope. This is indicated by 80%. Furthermore, seventy percent 70% of the lecturers strongly feel that telematic tuition relieves them from work burden. This does not suggest laziness, but categorically states that they can now get time to do research in the teaching field, telematic tuition in particular. Added to that, their teaching is able to cross the countries without experiencing troubles in travelling the distances.

All the lecturers are positive about the fact that telematic tuition needs some modification. They only differ in terms of the degree of agreement. Twenty percent (20%) agree strongly, while 80% only agree. Telematic tuition in higher education institutions, particularly those in distance education, is

not as the traditional teaching and learning done on-campus situations. Young as it is, its impact far outweighs its age. The lecturers are satisfied with the changes it brings in the teaching field. It therefore needs to be modified so that it does not lose its future value. There are few lecturers who feel not satisfied in some areas. Firstly, it should not be forgotten that it is by 100% that they stated their willingness to continue. Secondly, 20% of them disagree that they get relieved from work burden. Ten (10%) of them also disagree strongly. As stated earlier that this mode of teaching and learning is still young in some higher education institutions, these lecturers could most probably have not yet seen their way out, and therefore need formal training. Twenty (20%) of them also disagree with the notion that the learners are able to cope with telematic tuition. It is very much unlikely that the learners would cope up if their lecturers do not. Team work as lecturers would benefit all the stakeholders in telematic tuition

4.5 SUMMARY

The major purpose of the present study is to examine the effectiveness of telematic tuition in a South African higher education institution of South Africa. The different colours in the figures showed how the respondents differed and concurred in their reactions. Also, the factor analysis supported the validity of the questions used to assess the respondents' views, in terms of how they perceive the future possibilities of using telematic tuition.

It would seem that telematic tuition could be placing the demands on learners' appreciation of reality and their knowledge accessing modes. In spite of the tools and techniques used in distance and open education to bring about quality improvement, telematic tuition can be successfully adapted to the education sector. In this research, problems from both learners and lecturers in terms of the usage of contact sessions, teleconferencing, video-conferencing and postal services were identified. Their identification necessitates the researcher to proceed and be engaged in the following chapter of findings, recommendations and conclusions.

CHAPTER FIVE

FINDINGS OF THE STUDY, RECOMMENDATIONS AND CONCLUSIONS

5.1 INTRODUCTION

While the constant focus these days seems to be change, there are still patterns and trends in that change. After discussing the results of the respondents, that is, learners and lecturers separately, many things surfaced. In this chapter, these will be enumerated as the major findings of the study, and shall be attended as follows:

5.2 IMPORTANT FINDINGS

- Dealing with contradictions

Lecturers and learners belong to one family of teaching and learning. For this reason, it was found out that some of the items in both questionnaires of learners and lecturers which showed some resemblance in one way or another, reveal some contrasts. The following are some of the conspicuous contradictions:

Table 5.1: Learners' and lecturers' perceptions of individual learning style

	Strongly agree	Highly effective
Learners	50%	-
Lecturers	-	20%

Table 5.1 shows that there is a clash of ideas in the family of teaching and learning. It is revealed that 50% of the learners strongly agree to be using individual learning style in their studies. The percentage

suggests that half of the learner population do their assignments as individuals.

This might lead the learner to resort to memorizing facts so as to meet the dead line of assignments. It is also indicated that the lecturers agree to this learning style by only 20%.

The given percent tells that the voice of the lecturers is pitched low, to state that they see things differently. When the lecturers mark the assignments of the learners who follow the individual learning style, they come to realize that some of the mistakes incurred, could have been avoided had the learners not been studying as individuals.

The same applies, if an individual learner performs good, it is the lecturer's wish that such a learner could have shared the light with others. It should also be borne in mind that the lecturers are standing in a good and reliable position of seeing things taking a good shape, as well as those getting out of hand. Therefore, his feelings about individual learning style need not be taken for granted.

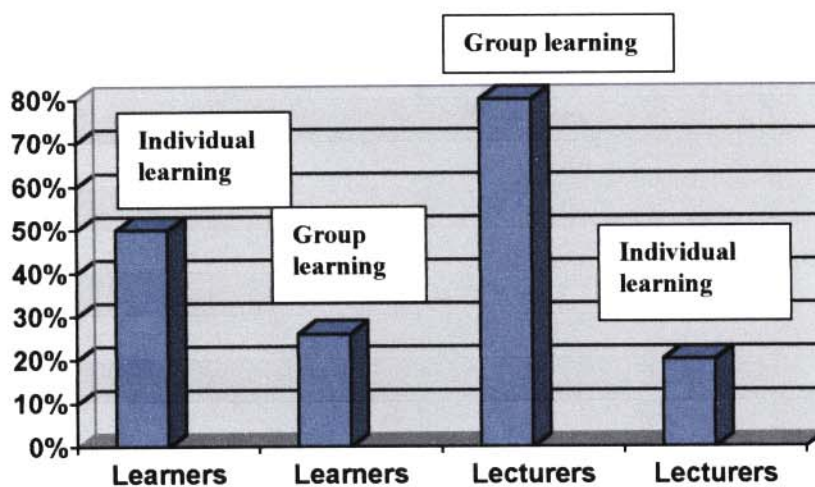
On the basis of the preceding discussion, it may be stated that the place of telematic tuition in distance and open education is not in danger, but actually intervenes by connecting the individual learner with other learners by way of e-mail. Once the learner discovers its fastness and appropriateness, the learners' performance will improve to the satisfaction of the lecturer.

Table 5.2: Learners' and lecturers' perception of group learning style

	Strongly agree	Highly effective
Learners	26%	-
Lecturers	-	80%

Table 5.2 is actually a confirmation of what stands in the preceding table 5.1 about individual learning style. Twenty –six (26%) of the learners do not favour group learning style. Eighty (80%) of the lecturers believe that this is the learning style which is highly effective in distance learning, and can improve learners’ performance in higher education institutions. It would seem that the lecturers’ idea is in line with telematic tuition which emphasizes contact sessions and technological conferences. All these are about group learning style. A clear picture of the preceding explanation is illustrated below, which somehow tries to map out the learner and the lecturer’s thinking about the two learning styles:

Figure 5.1 Graphic illustration depicting differences on how the learners and lecturers view individual and group learning styles



Looking at both table 5.1 and table 5.2, it would seem as if there is no way in which both learners and lecturers would reconcile at any stage. But the modern teaching and learning setting, telematic tuition in particular, emphasizes contact sessions, conferences and postal services in an attempt to balance both learning styles.

- Findings in this research are that the learners have a deeper involvement in learning activities due to the delivery system of taped cassettes, broadcast radio, broadcast television and contact sessions, which create a more meaningful experience for them.

- To many people, the term 'telematics' sounds new everyday. When mentioned, they immediately think of unreachable scientific processes, little knowing that it is part and parcel of education today. The findings of this study suggest that telematic tuition is on, but the learners involved seem not to be aware that they are learning through this mode of teaching. (Table 4.17, indicating 64% of moderate interaction).
- Whereas contact mode of teaching is regarded by the lecturers as 100% being better, it is found that to an extent, it is on the other hand discredited by the fact that some 38% of the learners feel like dropping the course because of traveling to the learning center. (Table 4.10)
- Findings are that computer literacy at the beginning of studies is highly needed. This has been confirmed by the learners who echoed same sentiments in table 4.11 as: 'I feel I needed computer training at the beginning of my studies.'
- In line with the preceding statement, it was also found that learners are more influenced by social factors than anything else to study through distance and open education. The social factors include the requirements of being computer literate, amongst others.
- It was found that there are more female learners (68.75%) than male learners (59.92%) who are satisfied with being the learners in distance and open education. In terms of learning opportunities created in telematic tuition, female learners benefit more.
- There is a stronger belief from the learners that in telematic tuition 'there is time available to do other things' while the lecturers state that telematic tuition 'relieves the lecturers from work burden.' The exposition is that both learners and lecturers are able to balance their books and also manage their own lives.
- Findings are that learners find communication through technology as being easier than communicating through post. Table 4.17 bears testimony to this finding. They most probably prefer a faster and reliable type of communication.

- Besides being a good experience to teach through telematics, it is also a challenging one. From the results, it was found that all the lecturers are willing to teach through telematics. This can be taken as an important finding which states that once the lecturers are brought into the teaching environment of technology, interests develop and reluctance to use such media diminishes.
- Participation could be engaged by raising questions and encouraging the means to search for answers, particularly in higher education institutions. It was found from the results that the mentioned idea does not get necessary attention in higher education institutions. It has been reported by the learners that the lecturers are never ready by 22% to communicate with them at any time of their working hours. Those who are sometimes willing, stand at 50%.
- Findings reveal that 20% of the lecturers are employed as part-time. Any percent, no matter how small, does affect the effectiveness of telematic tuition. Part-time lecturers do not necessarily spend most of their time around the campus because they could as well be permanently employed somewhere else. It is not always the case that they have offices of their own in the campus. It therefore does not come as a surprise when the majority of them (lecturers) are never ready to communicate at any time of their working hours.

Central to the preceding deliberations, major findings are based on the aims of this study. Thus:

- Lecturers in this study are experienced in tertiary teaching. Their qualifications as post-graduates see them as relevant. However, it is found that their telematic teaching experience is both rewarding and frustrating. Rewarding in the sense that the learners who contribute, do so with enthusiasm and real engagement, producing quality assignments and thoughtful contributions. The frustrations arise from the lack of participation from other learners and lecturers, despite the attempts of contact sessions, e-mail contacts and other modes of delivery.

The resulting frustrations bear out comments by Jones, Asensio and Goodyear (1999:4-9) that many tutors report similar experiences due mainly to unfulfilled high expectations.

- On examining the problems encountered concerning the learning styles, a major finding was that the learners in distance and open education often approach higher education learning with insufficient frames of reference. This could be the reason why their learning styles do not meet the expectations of their lecturers.
- Factors contributing to the dropout and non-starters rate among distance and open education students, have been identified as being related to planning and structuring of the learning content. As most of them are influenced by social factors to be engaged in distance learning, they would appreciate and be encouraged by the learning content that addresses the demands of the present life circumstances.
- Lecturers need formal training in telematic tuition which can be termed 'In-Service Training'. It has been a major finding that lecturers with different kinds of exposure to telematic tuition happen to teach the same learners. The learners will therefore be fed with information differently.
- One other major finding addresses how the learners perceive their experiences in learning through telematics while they are at off-campus. It was found that once the learners have been introduced to computers and other electronic equipments, it becomes difficult to control them. They are able to explore other avenues of their own liking. If this activity could be channeled towards the prescribed work, soon it will be difficult to actually categorize learners as full-time or distance learners, because telematics is efficiently in operation.

5.3 RECOMMENDATIONS

- Recommendations are based on the findings from the results. In this research, if there are indeed existing differences of opinions between learners and lecturers, between learners and learners, and between lecturers and lecturers, immediate actions need to be taken. In terms of which learning style is to be used, it is recommended that the lecturer's word contained in the responses, would not necessarily be taken as final, but would at least be considered to be useful for learners.
- Based on the preceding idea, a wrong learning style followed, denies a learner the opportunity to own the learning content. It is therefore recommended that when designing the study guides for distance learners, the lecturers should structure the learning content logically, linearly or chronologically, depending on the type of the subject content.
- Study guides referred to, should serve the purpose intended. There has to be the difference between a study guide and a prescribed book. When this happens, a learner would have no option but read the prescribed book, seek information from other sources including internet, and finally come up with notes of his/her making. Thus, memorization of facts or mere reproducing what stands in the study guide is avoided.
- Teaching and learning conducted through telematics, with particular reference to distance and open education, considers the importance of computer training for the learners at the beginning of course studies. A question of access to computers needs to be open, but at the same time be constantly monitored to check whether such tools are used, underused or overused. If these are not checked regularly, wrong and costly impressions may be set.

- Lecturers and learners engaged in telematic tuition are a unique family in modern teaching and learning. It is recommended that in order to keep this family together, the communication system employed should be of accepted value that would not leave any member isolated.
- The effectiveness of telematic tuition in higher education institutions cannot be achieved without the Support Unit concerned being strong. Their strength is calculated in terms of resources, as well as working towards having a team of lecturers who would adjust positively to the ups and downs expected in telematic tuition programme. It is therefore recommended that such formal meetings be set, where quarterly reports will be submitted and discussed.
- Although not new, constructivism as a learning theory has more relevance in education today because the dawn of the information age has rapidly increased the amount of, and accessibility to information. Coupled with other learning theories, factors contributing to the dropout and non-starters rate which plagues distance education institutions would be minimized. About the future possibilities of maintaining telematic tuition in higher education institutions, respondents indicated more agreements than disagreements. In this context, it is recommended that the handling of feedback should move from lower and slower position of one-way communication, and be elevated to the status of the middle center where the learners and lecturers would not lose focus of each other, that is, two-way feedback communication.
- About the future possibilities of maintaining telematic tuition in higher education institutions, respondents indicated more agreements than disagreements. In this context, it is recommended that a thin line between the agreements and disagreements be probed, so that the findings be used to pave way to the future of telematic tuition.
- Those who have received informal training, need to be retrained. This is a reorientation phase of development where the lecturers are reassessed. Those who report to have not been

familiarized with technological equipments in education before, need to be included in the first phase of familiarization.

- Those embarking on the introduction of telematic tuition with the purpose of bringing about institutional transformation, need to be clear about why is it being attempted.

- Build a vision around things such as:
 - Need to improve access to place-bound areas.

 - Strategic use of technology to provide new kind of services to education.

 - Telematic tuition seminars need to be held time and again at every possible venue

 - Keep in mind that in the academic environment, telematic tuition future needs to be amenable to revolutionary change

 - The fuzzy vision about telematic tuition should be allowed to gain clarity as more and more people begin to examine and comment upon it.

- A thorough study should be made of the possibilities of improving or modifying the present status of telematic tuition. That is, telematic tuition is to move with technology changes so as to evaluate the efficacy of those changes in the teaching and learning process.

- A distance and open education policy document with the requirements of telematic tuition, should be made available to all the lecturers, irrespective of whether being employed on part-time or on contractual basis.

5.4 CONCLUDING REMARKS

Nelson (1998:91) contends that successful learning materials should be integrated with other media so that they complement other activities. On this concluding note, teachers/lecturers are continually reminded to heed the following:

- If the networking resource is used wisely, acceptable results may be obtained.
- Usability study should evaluate the effectiveness of telematic tuition.
- The great potential is the ability to communicate among learners and between teachers/lecturers and learners in new forms of collaboration mediated by technologies.
- Technology alone is not the solution, but to reap its benefits requires extensive teacher/lecturer training.
- The networks have the information, but the learners still need guidance.
- Every small action done by the teacher/lecturer can lead to growth in a learning group to evolve into something more social.

This volume could not possibly cover all other areas of research on various concerns of telematic tuition in distance education. It is therefore recommended that other avenues of research like the learners' behaviour and reactions on telematic tuition are investigated. Further research on this study would indicate that important changes do occur in the learners' thinking, following their experiences in

learning. Until this step is taken, the concept of telematic tuition will remain vague, and will amount to a merely additional information.

Finally, a change is sorely needed to revitalize teaching and learning at higher institutions of learning.

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ADDENDUM A: QUESTIONNAIRE FOR LEARNERS

GENERAL INSTRUCTIONS

1. You are important in teaching and learning. This is the reason why you are chosen as a participant in this research.
2. As a request, feel free to respond to the statements.
3. Your responses will be treated as strictly confidential.
4. Respond to all questions.
5. Follow the instructions carefully.

RESEARCH QUESTIONNAIRE (to be completed by the learners)

Please answer all the questions

Respond by circling an appropriate number in the **shaded** area or by giving information required in the **shaded** block.

SECTION A: PERSONAL INFORMATION

1. Gender

Male	1
------	----------

Female	2
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2. Level of study

First year	1
Second year	2
Third year	3
Fourth year	4
Fifth year	5
Other	6

3. Under which faculty is your degree registered?

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SECTION B: THE ROLE PLAYED BY DISTANCE AND OPEN EDUCATION IN TEACHING AND LEARNING

4. I am satisfied to learn through distance learning.

Yes	No
1	2

Rate yourself on the scale of: (**Strongly disagree, Disagree, Agree, Strongly agree**)

5. My studying through distance and open education is influenced by:

	Strongly disagree	Disagree	Agree	Strongly agree
5.1 The need to improve my qualifications	1	2	3	4
5.2 Social factors	1	2	3	4
5.3 Quality courses offered	1	2	3	4
5.4 Need to acquire knowledge	1	2	3	4
5.5 Certainty of completion	1	2	3	4
5.6 Availability of time to do other things	1	2	3	4
5.7 Improved ways of teaching and learning	1	2	3	4
5.8 Early commence with studies	1	2	3	4

6. Do the lecturers dispatch study materials in time?

Yes	1
-----	----------

No	2
----	----------

7. Lecturers are ready to communicate with me at any time of their working hours.

Always	Sometime	Never
1	2	3

8. Judging your own performance, do you feel encouraged to continue with your studies through distance education?

Yes	1
-----	----------

No	2
----	----------

Not sure	3
----------	----------

9. Accessibility to the learning centre

	Yes	No	Sometimes
9.1 I walk to the learning centre.	1	2	3
9.2 I travel to the learning centre.	1	2	3
9.3 I arrive late at the learning centre.	1	2	3
9.4 Travelling makes me think of dropping the course.	1	2	3
9.5 I am unable to catch up the time lost through travelling.	1	2	3

SECTION C: EFFECTIVENESS OF TELEMATIC TUITION IN DISTANCE AND OPEN EDUCATION

10. Computer literacy

	Yes	No	Not sure
10.1 Have you been familiarised with a computer before?	1	2	3
10.2 Do you have access on computers at your institution?	1	2	3
10.3 Is the access indicated at No.11.2 time restricted?	1	2	3
10.4 I feel I needed computer training at the beginning of my studies.	1	2	3
10.5 Interaction with technology makes me feel socially acceptable.	1	2	3

11. Assignments and feedback

Respond to the following questions by using the scale below:

Strongly disagree	Disagree	Not sure	Agree	Strongly agree
1	2	3	4	5

11.1 Assignments are complex for my understanding.

1	2	3	4	5
----------	----------	----------	----------	----------

11.2 I find it difficult to send assignments in time.

1	2	3	4	5
----------	----------	----------	----------	----------

11.3 The dates to submit the assignments are not well spaced.

1	2	3	4	5
----------	----------	----------	----------	----------

11.4 Lecturers do not give guidance on how to go through the assignments.

1	2	3	4	5
----------	----------	----------	----------	----------

11.5. Lecturers accept late submission of assignments.

1	2	3	4	5
----------	----------	----------	----------	----------

11.6 Lecturers give immediate feedback.

1	2	3	4	5
----------	----------	----------	----------	----------

11.7 Lecturers' remarks on assignments motivate me.

1	2	3	4	5
----------	----------	----------	----------	----------

11.8 I find it difficult to get reference material.

1	2	3	4	5
----------	----------	----------	----------	----------

11.9 I work hard to qualify for examinations.

1	2	3	4	5
---	---	---	---	---

12. Learning styles

12.1 I rely on prescribed material.

1	2	3	4	5
---	---	---	---	---

12.2 I apply newly acquired knowledge in everyday situations.

1	2	3	4	5
---	---	---	---	---

12.3 I memorise facts by speaking them aloud.

1	2	3	4	5
---	---	---	---	---

12.4 I summarise important facts and principles.

1	2	3	4	5
---	---	---	---	---

12.5 I write down facts after memorization.

1	2	3	4	5
---	---	---	---	---

12.6 I interact with other learners through technology.

1	2	3	4	5
---	---	---	---	---

12.7 I lack concentration.

1	2	3	4	5
---	---	---	---	---

12.8 I rely on group study.

1	2	3	4	5
---	---	---	---	---

12.9 I prefer to study alone.

1	2	3	4	5
---	---	---	---	---

12.10 I prefer recording the content on tape and then replay.

1	2	3	4	5
---	---	---	---	---

SECTION D: USAGE OF TELEMATIC TUITION IN THE FUTURE

13. What has been the effect of telematic tuition on your performance?

Mostly positive	No observable change	Mostly negative
1	2	3

14. Physical boundaries no longer hinder the learning process.

Yes	1	No	2	Not sure	3
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Rate your studies' progress when learning through telematic tuition. (Use the scale provided below)

Low	Moderate	High
1	2	3

15. I am now able to interact with lecturers through technology.

1	2	3
---	---	---

16. I am now able to interact with other learners through technology.

1	2	3
---	---	---

17. I am able to seek information through technology

1	2	3
---	---	---

18. I have now developed a positive attitude towards my studies.

1	2	3
---	---	---

19. Contact sessions at learning centres make my studies easier.

1	2	3
---	---	---

20. Communicating through the post makes my studies easier.

1	2	3
---	---	---

21. Communicating through technology makes my studies faster.

1	2	3
---	---	---

22. Teaching through technology is too fast for my learning pace.

1	2	3
---	---	---

23. I have the assurance of obtaining results in time through technology.

1	2	3
---	---	---

24. YOUR GENERAL COMMENTS AND RECOMMENDATIONS
ABOUT THE QUESTIONNAIRE

Thank you for completing the questionnaire.

ADDENDUM B:

RESEARCH QUESTIONNAIRE FOR LECTURERS

TELEMATIC TUITION IN A SOUTH AFRICAN HIGHER EDUCATION INSTITUTION: A CASE STUDY.

Please answer all the questions

Respond by circling an appropriate number in the **shaded** area or by giving information in the **shaded** block.

SECTION A: PERSONAL PARTICULARS

1. Gender:

Male	1	Female	2
------	----------	--------	----------

2. Your qualifications

HPTC	1
JPTD	2
SPTD	3
SEC	4
SED	5
STD	6
SSTD	7
HED	8
FDE	9
FIRST DEGREE	10
POSTGRADUATE DEGREE	11

3. How long have you been teaching at tertiary?

0-3 Yrs	4-6 Yrs	7-9 Yrs	10-11 Yrs	12 Yrs +
1	2	3	4	5

4. In which faculty do you teach?

5. What is the name of your department?

6. What is the nature of your appointment?

Permanent	Temporary	Part - time	Contractual
1	2	3	4

SECTION B: THE ROLE PLAYED BY DISTANCE AND OPEN EDUCATION IN TEACHING AND LEARNING

7. Does your institution have a well defined policy document for distance and open education?

Yes	1	No	2
-----	----------	----	----------

8. If **Yes**, do you have access on the policy document?

Yes	1	No	2
-----	----------	----	----------

9. If **No**, what is the reason?

10. Are you satisfied with the content of the policy?

Yes	1	No	2
-----	----------	----	----------

11. Does your institution experience any of the following regarding student enrolment?

High enrolment	Moderate enrolment	Low enrolment
1	2	3

12. Would you attribute the above indicated student enrolment to the following? (Rate your responses)

	Yes	No	Uncertain
12.1 The type of courses offered?	1	2	3
12.2 Quality teaching?	1	2	3
12.3 The openness of the institution?	1	2	3
12.4 Strong support services?	1	2	3
12.5 Poor support services?	1	2	3
12.6 Committed learners?	1	2	3
12.7 The institution having a sense of direction?	1	2	3
12.8 Critical thinking about the learners' needs	1	2	3

13. As an educator, how would you rate the pass rate of the learners in distance and open education? (Specifically in your institution)

Excellent	1
Good	2
Adequate	3
Inadequate	4
Grossly inadequate	5

14. Does your institution's distance and open education programme build and maintain the following modes of delivery?

	Strongly disagree	Disagree	Agree	Strongly agree
14.1 Taped cassettes	1	2	3	4
14.2 Broadcast radio	1	2	3	4
14.3 Broadcast television	1	2	3	4
14.4 Contact teaching mode	1	2	3	4

15. In your opinion, to what extent does distance and open education contribute to teaching and learning in your institution? (List the items).

15.1

15.2

15.3

15.4

16. In your opinion, what would you regard as weaknesses and strengths of Distance and open education in your institution? (List the items)

16.1

Strengths

16.2

Weaknesses

SECTION C: EFFECTIVENESS OF TELEMATIC TUITION

- **Training of lecturers**

17. Did you receive any training in telematic tuition?

Yes	1	No	
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18. If **Yes**, proceed to questions: (21; 22; 23; 24 and 25)

19. If **No**, does your institution give support to train in telematic tuition?

Yes	1	No	2
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20. How supportive is your institution's management for telematic tuition?

Very supportive	Occasionally supportive	Never supportive
1	2	3

21. What kind of training did you receive?

Formal	1	Informal	2
--------	----------	----------	----------

22. How do you rate the training that you received in telematic tuition?

Very important	Important	Not important	Not sure
1	2	3	4

23. Did the training address the following?

	Not at all	Minimally	Extensively
23.1 Lecturer-learner interaction	1	2	3
23.2 Lecturer-content interaction	1	2	3
23.3 Video-conferencing	1	2	3
2.3.4 Computer-conferencing	1	2	3
23.5 Teleconferencing	1	2	3

24. Since training, has your teaching improved?

Yes	1	No	2
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25. If **No**, what could be the reason for this lack of improvement? (Please give details)

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26. Is time spent with the learners allowing you in getting to know them better?

Yes	1
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No	2
----	---

Don't know	3
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27. Is time spent with the learners assisting them to improve their performance?

Yes	1
-----	---

No	2
----	---

Don't know	3
------------	---

28. Do you encounter problems with the learners who do not observe the stipulated time in sending assignments?

Yes	1
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No	2
----	---

Occasionally	3
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29. Do you encounter problems with the learners who do not honour the the appointments?

Always	1
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Never	2
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Occasionally	3
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- **Teaching and learning techniques**

30. As a lecturer in telematic tuition, rate yourself on the scale of:
(Easier; Better; Complicated)

	Easier	Better	Complicated
30.1 telecommunication makes my teaching	1	2	3
30.2 computer conferencing makes my teaching	1	2	3
30.3 videoconferencing makes my teaching	1	2	3
30.4 paper base communication makes my teaching	1	2	3
30.5 contact mode makes my teaching	1	2	3

31. On the following scale provided, rate each factor as it obtains to the student learning at your institution:

	Highly effective	Somehow effective	Ineffective
31.1 Collaborative learning	1	2	3
31.2 Co-operative learning	1	2	3
31.3 Group learning	1	2	3
31.4 Individual learning	1	2	3
31.5 Negotiation learning	1	2	3
31.6 Deep approach learning	1	2	3

32. Circle an appropriate number in a shaded area which best describes the level of competence you need for effective facilitation in telematic tuition. Use the scale: **1 = High need, 2 = Some need** and **3 = No need**.

	High need	Some need	No need
32.1 Computer literacy	1	2	3
32.2 Developing teaching-learning techniques	1	2	3
32.3 Implementing teaching-learning theories	1	2	3
32.4 Developing positive attitude towards learners	1	2	3
32.5 Discussing learners' performance with other lecturers	1	2	3
32.6 Discussing technological problems	1	2	3
32.7 Utilization of technological media	1	2	3

SECTION D: TELEMATIC TUITION AS A FUTURE MODE OF TEACHING AND LEARNING IN DISTANCE AND OPEN EDUCATION AT HIGHER INSTITUTIONS

33. What has been the effect of telematic tuition on the performance of the learners in your institution?

Mostly positive	No observable change	Mostly negative
1	2	3

34. Do you regard telematic tuition as a solution to high failure rate at higher education?

Yes	1	No	2
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35. Do you regard physical boundaries as a constrain to learning process due to the new technologies in education?

Yes	1	No	2	Not quite	3
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36. With regard to lifelong learning, telematic tuition in distance and open education is cost effective.

Yes	1
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No	2
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Not quite	3
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37. In your opinion, how do you rate the following in your institution?

37.1 The lecturers are willing to teach through telematics

37.2 The learners are able to cope with telematic teaching

37.3 The learners are unable to cope with telematic tuition

37.4 Telematic tuition relieves the lecturers work burden

37.5 Telematic tuition needs some modification

	Strongly agree	Agree	Disagree
	1	2	3
	1	2	3
	1	2	3
	1	2	3
	1	2	3

38. YOUR GENERAL COMMENTS AND RECOMMENDATIONS CONCERNING THE QUESTIONNAIRE

Thank you for completing the questionnaire.