DIALOGUE OR DISCIPLINE: DISTANCE EDUCATION SUPPORT IN THE DEPARTMENT OF DEFENCE (DOD)

CHAPTER 1

INTRODUCTION AND ORIENTATION

1.1   INTRODUCTION

This chapter aims to highlight some of the typical problems often encountered at institutions conducting a distance learning mode of instruction. It discusses the background that led to conducting the study, the rationale for undertaking the research into the importance of student support in a distance learning settings and, most importantly, it highlights the problem statement, the main research question and sub-research questions. The aims and objectives of the study are also discussed in this chapter. This chapter, also briefly discusses the research methodologies and strategies including the population, sample, data-collection techniques, and data-collection methods. The chapter ends by discussing the chapter outline of the entire study and some important terms used in the study.

1.2   TYPICAL PROBLEMS FOUND IN DISTANCE LEARNING

It is widely known and accepted that distance learning is a teaching and learning methodology in which students receive their learning and instruction away from the institution and instructors that they have enrolled. Thus, the term distance learning in this study also referrers to other forms of distance learning as discussed in the next chapter, in the section, 'the concept of distance learning in the Department of Defence'. Distance learning has been and still is referred to as distance education, distributed learning, online learning, and e-learning and/or web-based instruction (Duangploy, Williams, & Gray, 2007:13).

It is fair to state that distance learning problems vary from institution to institution among those that conduct their instruction through this mode. A number of authors have pointed out a number of problems associated with distance education effectiveness though many others have recognised that this kind of teaching and learning has a supportive dimension. For example, Rovai (2003:2) refers to Carr (2000) who noted that persistence in distance education programmes is often 10-20 percent lower than in traditional content programs. It is not necessarily the intention here to give detailed reasons behind these problems. But the fact is that these problems vary and, sometimes, interrelated. A study conducted by Qureshi, Morton and Antosz (2002:[s.p.]) found that distance education students were less motivated than on-campus students. There is also the problem of drop-out; countless reasons for drop-out in the distance education mode of instruction have been documented in many studies.

Astin (1975), is cited by Woodley (2004:49) that the most frequent reasons for dropping out were boredom with courses, financial difficulties, dissatisfaction with requirements or regulations and change in career goals. Another research conducted by Yorke (1999) as cited in Woodley (2004:49) showed that many students left because they felt they had picked the wrong course from the myriad on offer. According to Valentine (2002:[s.p.]):

> "Despite the promises and obvious advantages to distance learning, there were problems that needed to be resolved. These problems included the quality of instruction, hidden costs, misuse of technology, and the attitudes of instructors, students, and administrators".

A study by Schifter (2002:13) found that while the quality of the faculty was the key to a successful distance education programme, less interaction with the students led to less interest on the part of faculty to participate. It could be said that students were also not immune from having less interest to participate.

According to Comstock (2000:[s.p.]), the combination of structure, learner control, and transactional distance and their role in which the education is delivered were responsible for effectiveness of distance education. As a theory associated with distance education, transactional distance is not measuring the physical distance between the instructor and student, but measuring the amount of interaction between them. For example, Lemone (2005:[s.p.]) refers to Moore (1993) that teacher-learner relationships that exist when learners and instructors are separated by space and/or time consists of three parameters, interaction, course structure and learner autonomy (Lemone, 2005:[s.p.]). Dialogue (autonomy) plays such a huge role in distance education as does structure (Comstock, 2000:[s.p.]). Although according to Comstock, (*Ibid*) another problem with distance education courses is the instructors' inability to judge students' autonomy and adjust the transactional distance accordingly. Just as students fail out of distance courses simply because they cannot handle the amount of autonomy that comes with it. (*Ibid*).

It should be pointed out that authors interpret the term dialogue differently, but all point to the same direction. Moore (1993) state that dialogue is developed by teachers and learners in the course of the interactions that occur when one gives instruction and the others respond. Dialogue is one of the important tenets in distance learning. The concepts of dialogue and interaction are very similar, and …are sometimes used synonymously (Moore, 1993:23-24). Dialogue can be described as the learner-teacher interaction in a distance course (Vrasidas & McIsaac, 1999:24). Transactional distance is defined as a function of dialogue and structure (Wallace, 2003:245). Watson, Correia, Lee and Schwen (2004:54) referring to Boone, (2001), Roth, (1994), and Stewart, ([n.d.]) defines dialogue as the interchange of ideas that

seeks to establish greater learning or understanding in the context of mutual harmony. In Watson, *et al* (2004:54), Banathy (2003:11) defined it as a disciplined, consensus-building process of collective communication based on shared values and beliefs.

As a two-way communication, dialogue in this study is viewed and used as an environment that allows free and unhindered interaction between students and instructors and among students. This interaction is voluntary; thus, valued and respected by all involved. As such it is not forced nor prescribed on the participants. Everyone is free to participate without being forced or coerced to do so. It can be also emphasised here that dialogue fits very well in distance learning settings; as learners and instructors need this two-way communication. According to Roblyer and Wiencke (2003:77), the topic of interaction figures prominently in discussions of effective distance learning practices. Fulford and Zhang (1993:8) cited by Roblyer and Wiencke (2003:77) observed that:

> "Interaction has long been considered the key to success in traditional classrooms," it is not surprising that it has also come to be considered a *sine qua non* for successful distance courses".

According to Research yields consistent indication that increased interaction in distance courses is associated with higher achievement and student satisfaction (Zhang & Fulford, 1994; Zirkin & Sumler, 1995) cited by Roblyer and Wiencke, (2003:78).

Moore's idea was that a smaller transactional distance would be a sign of greater involvement by the student (Wallace, 2003:245). The more the learner interacts with his or her instructor or authorities at the institution the learner has enrolled for his or her studies, the lesser he or she will feel isolated and the distance between the said learner and instructor or the institution will not be felt, especially by the learner. Transactional distance is measured on a continuum of structure and dialogue. The more structure, the less dialogue and vice versa. (Dron, Seidel, & Litten, 2004:163) More dialogue between the instructor and students indicated a smaller transactional distance, while more structure provided by the instructor or the institution result in a larger transactional distance (Wallace, 2003:245). The extent of dialogue and the flexibility of structure vary from programme to programme (Moore, 1993:27). More or less transactional distance depends on this variation *(Ibid)*. For instance, as some military-related programmes would require more structure, it does not necessary mean that there should be an absence of dialogue (or interaction). According to Moyer (2004:59-60), a ten-month resident course at the United States Army Command and General Staff College (CGSC) that transformed into a distance education format for the Internet through a limited access learning management system (LMS), little to no interaction with instructors or other students was

necessary. This course was designed to make the learner completely independent, other than writing and briefing *(Power Point)* submissions and the pre- and post-tests that were submitted via electronic mail or through the LMS. Rather than include a discussion board or encourage frequent e-mails between instructors and students … checks are presented to the individual students, without outside assistance (Moyer, 2004:60).

Referring to Moore (1989:2-4), Barbour and Reeves (2006:[s.p.]) contend that there are three types of interaction in distance education: interaction between the learner and the content or subject of study…interaction between the learner and the expert who designed the subject material, or some expert acting as instructor... [and interaction] between one learner and other learners, alone or in group settings, with or without the real-time presence of an instructor. In order for the learner to understand or master his or her subject, he or she has to constantly engage in his or her reading material and find answers to questions he or she might have; he or she has to consult with the instructor for unanswered questions; and continue to engage his or her peers for further unanswered questions. Dron (2006[s.p.]), refers to Anderson (2003), who describes six modes of interaction in online learning as teacher-student, teacher-content, teacher-teacher, student-student, student-content and content-content. Thus, interaction takes many forms. In order for instructors to assist learners on their questions, they must first understand the material themselves; the instructors must be able to assist each other; the contents must be able to supplement each other. Dron (2006:[s.p.]), goes on to say that:

> "In social software, the group is a first class object that has an existence in its own right, mediated through the environment just as interactions between individuals are mediated".

Therefore, a further four interactions are significant: student-group, teacher-group, content-group and group-group. (Dron, 2006:[s.p.]). According to De Ture (2004:24), a fourth category of interaction, learner-interface, was added by Hillman, Willis, and Gunawardena (1994) because, unlike traditional classroom interactions, distance education requires interfacing with technologies to make interactions in the other three categories mentioned by Moore (1989) and Barbour and Reeves (2006). Learning involves two types of interaction: interaction with content and interaction with other people (O'Neil, 2006:[s.p.]). It is postulated then, that dialogue (or interaction) has to be constant in distance learning settings. It cannot be spontaneous or once-off activity. It has to be by choice or activated by a need. Referring to Garrison (1990), Hackman and Walker (1990), Ritchie and Newby (1989), De Ture (2004:24) emphasises that the importance of interaction in education settings has been widely investigated, and it has been shown that students who perceive higher levels of interaction have more positive attitudes and Navarro and Shoemaker, (2000) higher

achievement. Distance learning theory and research holds that interaction is an essential characteristic of successful distance learning courses (Roblyer & Wiencke, 2004:77). Duangploy, *et al* (2007:16), refers to Moore (2002) that the dialogue between learner-instructor inter-action is a crucial component that facilitates the other two (structure and learner autonomy) and creates an effective learning environment.

As discussed earlier, dialogue (interaction) should be free and by choice from, especially both sides, the learner and the instructor (or the institution) and be accepted as such. But, according to O'Neil (2006:[s.p.]), interaction is… a very important aspect of the role of the instructor in distance education …". The interaction should result in or encourage the learner to also engage in interaction with the instructor. This study holds that failure by the instructor to interact with the learner is the result of an overemphasis of discipline or body of knowledge (or subject content). Discipline in this study is compared to structure in that it is imposed by the instructor or the institution. Furthermore, for the purpose of this study, discipline also has a second meaning. It refers to the authoritarian positioning (or authority) of the teacher or instructor in the teaching and learning environment. It also addresses the direct line of authority and content to which dialogue could be compromised when freedom of the learner is restricted due to protocol or practice.

It describes what the learner must achieve. It sets the learning parameter for the learner – what, when, why, how, and who must he or she interact with. Dialogue is purposeful, constructive and valued by each party. Each party in a dialogue is a respectful and active listener; each is a contributor, and builds on the contribution of the other party or parties. (Moore, 1993:24). Trentin (2000:17), contends that quality is not synonymous with excellence, but rather indicates the management of a continuous process aimed at bridging the gap between the expected effect (what out to be learned) and the actual effect (what has been learned). Achieving such a result demands frequent interaction between all of the components in the process. Interaction is imperative if the quality of the process is to be raised: interaction with materials, between students and their instructors, and among all the participants (*Ibid*).

A lack of dialogue poses a problem both for practitioners as well as researchers in the field of educational technology. Watson, *et al*, (2004:54) refers to Boone, (2001), Roth, (1994), and Stewart ([n.d.]), who noted that dialogue, is the interchange of ideas that seeks to establish greater learning or understanding in the context of mutual harmony. Dialogue is a disciplined, consensus-building process of collective communication based on shared values

and beliefs (Banathy, 2003:11). Therefore, dialogue is a calling that everyone involved in distance teaching and learning endeavour has to honour and respect. Failure to do so will mean that discipline is embraced more than dialogue and a set up for failure. The lack of dialogue and in favour of discipline could be directly or indirectly linked to some of the problems in distance education settings including those mentioned earlier in this section.

1.3 BACKGROUND TO THE STUDY

In its First Report, the Department of Defence (DOD) Education, Training and Development (ETD) Project Team[1] concluded that the training presented had been comprehensive and had mainly satisfied the needs of some clients but neglected others (DOD Education , Training and Development Project Team Report, 1997a:9) (referred to as DOD ETD Project Team Report a or b). Thus, the transformation of the DOD has necessitated an overhaul of the training function, which has been expanded to include education and development, thus catering for the total development of the individuals, groups and organizations within the Department of Defence. Distance learning also form part of this transformation. The inclusion of civilian members of the Department in the Education, Training and Development Process was also a major departure from past practices.

The Project Team determined that some of the South African National Defence Force (SANDF) students who undertake Education, Training and Development opportunities through distance learning in the Department of Defence often do not complete their studies (DOD ETD Project Team, 1997a). The Department of Defence students were usually not ready to pursue their studies in a distance learning mode of delivery. These students were not submitting their assignments and were not committed to writing their final examinations. Hence, they drop out of most distance learning programmes offered by the Department of Defence. This resulted in the Department of Defence's funds, time and efforts being wasted in the process. The Project Team recommended that the root causes of the problems negatively affecting the 'student body'[2] be investigated and best solutions be sought and implemented (DOD ETD Project Team Report, 1997a:10-18). A synopsis of these problems and recommendations by the ETD Project Team is included in Appendix A.

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[1] The DOD ETD Project Team hereafter the Project Team was one of the DOD Redesign Teams instructed by the Defence Staff Council (DSC) in 1997 to field a report to conclude Phase 2 of the process to address the transformation of ETD in the DOD.

[2] The Student Body are DOD ETD candidates who make use of ETD opportunities, accept and take responsibility for their learning (DOD ETD Project Team Report, 1997a: 27).

1.4 PROBLEM STATEMENT

The Department of Defence distance students' commitment, motivation and incentives and ability to complete the programmes remained problematic. The motivation to follow and complete their programmes is believed to be lacking in these students. There is a lack of sufficient scope for adaptation to the technologies implemented in delivering the distance learning since the different training units had varying technological infrastructures. Moreover, the instructors were not adequately trained for distance learning; their qualifications were inadequate and there is a shortage of these instructors. In addition, there is a lack of understanding of the entire scope of distance education in the Department of Defence.

In 1949 Ralph Tyler (1949) published the 'Basic Principles of Curriculum and Instruction' that led curriculum design and development globally for many years. It became known as the 'mechanistic model' and was further characterised because of the fact that it was a much closed system based on the method that accompanied the model (Doll, 1993:115). Due to its popularity and because of the simplicity of the curriculum development phases the model represent, the underpinning premises of the model also gave it the name of the 'evergreen' or 'perennial' curriculum (Smith & Lovat, 2003). The four premises or basic principles the model propagate refer to (a) the purposes or outcomes to be achieved, (b) the accompanying learning experiences best fit to develop the outcomes, (c) the instructional and teaching activities to achieve the outcomes, and (d) best evaluation practices through which the achievement of the outcomes can be assessed (Tyler, 1949:1; Ornstein & Hunkins, 2009:214).

Although Tyler (1949:1) originally suggested that students should be 'encouraged to examine other rationales and to develop his (sic) own conception of the elements and relationships involved in an effective curriculum' this technical-scientific model (Carl, 2009:43; Ornstein & Hunkins, 2009:214) became ideally suited for curriculum developers who saw it fit to use the curriculum to disseminate objectives and outcomes within the purpose, structure and function of the organisation. It became known as a 'curriculum of power' or even the 'curriculum of authority' meaning that institutions, organisations and providers could develop a curriculum that will support the objectives and philosophy of the organisation by means of acceptable and justifiable academic curriculum development principles. Kizlik (2010:s.p) is very precise by referring to the power of curriculum developers as follows:

> "Basically, I believe that curriculum is about ends, not means. When those two concepts are blurred, trouble begins. Put simply, the most useful ideas about curriculum begin with context that curriculum is

about those with power (the state, societal institutions, parents, etc.) want those with limited or no power (students) to learn".

Many academics questioned the functionality of the Tyler rationale in the past, and then especially the assumption that objectives for learning can be retrieved from learners themselves or from the tasks and functions of the organisation (Chan, 1977:23-24). Interestingly, it was also Spady (1994:19) who suggested that curriculum developers should 'design down' from the culminating outcomes to establish the enabling outcomes or learning outcomes to be achieved during the facilitation of learning. However, although Slattery (2006:8) as postmodernist values the contribution of the Tyler model to education in general, he argues that postmodern philosophies are emerging that 'often replace the traditional model of curriculum development itself'. It appears as if it has a lot to do in the way learners construct their own meaning. In support of this notion, Smith and Lovat (2003:108) refer to Derrida and Foucault when they write that they (Derrida and Foucault) 'have shown that each person constructs their own meaning, and each relationship comprises a unique world of interconnected relevance'.

Discipline, and then specifically subject discipline or subject matter forms an important component of a course rationale (Posner & Rudnitsky, 2006:84-85). According to the authors the rationale may stress the importance of a particular topic or discipline to the overall programme. It also addresses the value of the subject matter to the target population (Posner & Rudnitsky, 2006:85). For example, a subject-centered curriculum will most likely focus on the structure of the discipline for content selection (Wulf & Schave, 1984:23). Smith and Lovat (2003:43-44) remind us that curriculum theory as a field of study 'draws heavily on the contributions of the foundational disciplines, on the one hand, and critically appraises their contributions, on the other.' Bernstein, in Hoadley and Jansen (2009:290-291) distinguished between two types of curriculum, namely curriculum of the collection type (curricula disciplinary related) and curriculum of the integrated type. This paradox reiterates one of the problems that emerge in this specific study. It acknowledges discipline as subject matter in the context of the tasks and functions of the Department of Defence, on the one hand, but on the other hand questions the 'authoritative power' and 'mandate' of pre-selected subject matter as rationale in the context of the designed and developed programmes. Furthermore, it also brings to the fore students' engagement with the subject matter during teaching and learning and questions the association between student learning, curriculum as discipline and student support. The purpose of the study is not to reject authority outright within the context of teaching and learning but wishes to explore to what extent teaching and learning, and then with specific reference to student support, manifest itself in a very authoritarian teaching and

learning environment as found within the structures of distance learning modes of operation in the Department of Defence.

Discipline therefore also has another meaning. It relates to authority with which it is often intertwined and seen as precondition to an authoritarian order of society. Marcuse (1973:135) referred to Marx and had the following to say about authority:

> "The dialectical and two-sided character of the authority relationship is also the determining factor in the establishment of a positive concept of authority … there is a kind of authority which is inseparably linked with all 'organisation', a kind of subordination, based on functional-rational assumptions, to genuine management and performance-labour discipline. Such functional authority is necessary in every social organisation as a condition of production…"

Teaching, learning and student support form the core of the National Association of Distance Education Organisations of South Africa (NADEOSA) Quality Criteria for Distance Education in South Africa (Welch & Reed, 2005:18-42). The criteria cover various variables ranging from academic support, counselling support and administrative support to the establishment of learning centres and the monitoring of quality (quality assurance) (Welch & Reed, 2005:32-33). Another problem that emerges from the literature study as well as from the researcher's own experience with the distance education mode of the Department of Defence is the question whether learner support in the DOD meets and matches the criteria posed by the NADEOSA criteria. The following main research question make-up the problem statement is formulated in the form of a problem question, as suggested by Bak (2004:20-21):

> What are the requirements placed on the design of distance education programmes as regards discipline and dialogue and how do these factors impact on student support in the Department of Defence (DOD) and the South African National Defence Force (SANDF)?

1.5   MAIN RESEARCH QUESTION

What are the requirements placed on the design of distance education programmes as regards discipline and dialogue and how do these factors impact on student support in the Department of Defence (DOD) and the South African National Defence Force (SANDF)?

1.6   SUB-RESEARCH QUESTIONS

1.   How does the subject discipline, measured in terms of programme substance and syntax, predetermine the achievement of programme outcomes in a distance learning

environment, and how does subject discipline prescribe to structure in the design of distance education programmes?

> 1.1 What is the unique character of each of the four Arms of Service of the SANDF and what requirements do they place on the design of distance education learning programmes as well as the achievement of the outcomes in such learning environment?

2. How does subject discipline, measured in terms of substance and syntax allow for transactional dialogue in a distance education environment, and how do instructional designers negotiate dialogue in the design of learning material?

> 2.1 How does dialogue manifest itself as mode of communication between facilitator and student in a distance education environment and what constraints does discipline place on transactional dialogue?

3. How does dialogue between instructors and students facilitated across transactional distance and what is the association between the transactional dialogue and the achievement of learning outcomes in a distance education learning environment?

> 3.1 How were the achievement of programme outcomes, as well as drop-out and failure rates were linked to subject discipline, learning interventions and transactional dialogue?

4. What is the association between instructor and learner support in a distance education environment and which variables impacted on this, and how do these variables impact on the achievement of learning outcomes in a distance education environment?

> 4.1 What is the role of dialogue in student and facilitator support and what is its impact on the design of distance education programmes and achievement of learning outcomes in a distance education environment?

1.7 AIM

The aim of the study was to determine what were the requirements placed on the design of DE programmes as regards discipline and dialogue and how do these factors impact on student support in the SANDF?

1.8 OBJECTIVES[3]

> 1.8.1. The following are the objectives of the study:

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[3] These objectives and accompanying reasons and methods to attain them are presented in tabular form in Table 1.8.2

1.8.1.1 To determine the character of teaching and learning in the DOD institutions of distance learning in terms of such issues as programme design requirements and achievement of outcomes.

1.8.1.2 To determine the nature of transactional dialogue as applied in the DOD distance learning environment. To determine the role of dialogue in the design of distance learning and teaching and the distance learning material.

1.8.1.3 To determine the relationship between the achievement of learning outcomes and dialogue across transactional dialogue, and to determine the extent of drop-out and failure.

1.8.1.4 To determine the role of dialogue as a student support mechanism in the DOD distance education environment. To determine other students' support mechanisms in the DOD distance learning environment.

1.8.2 Presentation of problem statement, aim, research questions, objectives, reasons, and research methods

Main research question, aim, sub-research questions, objectives, reasons for attaining the objectives, and methods of attaining the objectives				
Main research question				
What are the requirements placed on the design of distance education programmes as regards discipline and dialogue and how do these factors impact on student support in the Department of Defence (DOD) and the South African National Defence Force (SANDF)?				
Aim				
The aim is to determine what were the requirements placed on the design of distance education (DE) programmes as regards discipline and dialogue and how did these factors impact on student support in the SANDF?				
S/N	**QUESTION**	**OBJECTIVE**	**REASON**	**METHOD**
a.	What is the unique character of each of the four Arms of Service (AoSs) of the SANDF and what requirements do they place on the design of DE learning programmes as well as the achievement of the outcomes in such learning environment?	To determine the character of teaching and learning in the DOD institutions of distance learning in terms of issues such as programme design requirements, achievement of outcomes, etc.	Because each AoSs in the SANDF is different and unique in their teaching and learning practices.	i. Interviews ii. Documents, Reports & Text analysis iii. Secondary analysis of already analysed data.
b.	How does dialogue manifest itself as mode of communication between facilitator and student in a DE environment and what constraints does discipline place on transactional dialogue?	To determine the nature of dialogue as a mode of communication between among the role players in the DOD distance learning environment. It is also to determine and understand the role of dialogue in the design of learning material and distance learning teaching and learning in general.	Because dialogue, the interaction between students and instructors is vital in distance learning and important in transactional distance.	i. Interviews. ii Documents, Reports & Text analysis iii. Secondary analysis of already analysed data.
c.	How does the achievement of programme outcomes, as well as dropout and failure rates linked to subject discipline, learning interventions and transactional dialogue?	To determine the relationship between the achievement of learning outcomes and dialogue across transactional dialogue. It is also to determine the extent of drop out and failure.	Because lack of dialogue can impact negatively on transactional dialogue and can result in dropout and failure.	i. Interviews. ii Documents, Reports & Text analysis. iii. Secondary analysis of already analysed data.
d.	What is the role of dialogue in student and facilitator support and what is its impact on the design of distance education (DE) programmes and achievement of learning outcomes in a DE environment?	To determine the role of dialogue as a student support mechanism in the DOD distance education environment. It is also to determine other student support endeavors in the DOD distance learning environment.	Because ensuring dialogue in distance learning programmes also contributes to student support and ensures the achievement of learning outcomes.	i. Interviews. ii Documents, Reports & Text analysis iii. Secondary analysis of already analysed data.

Table 1.1: Research problem, aim, main research question, sub-question, objectives, reasons, and methods to achieve them

1.9 RATIONALE FOR UNDERTAKING THE STUDY

Distance learning is a developing delivery mode in the Department of Defence and, although according to Viljoen (1999:10), it had been practiced for more than a decade. A research project undertaken by a South African National Defence Force College of Educational Technology (SANDF COLET) [known as COLET[4]] researcher, in 2003 to determine the causes of non-completion of College of Educational Technology learning programmes,

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[4] SANDF COLET provided facilitation, instructional and training skills to almost all DOD instructors and offered Occupational-Directed qualifications through distance learning.

revealed that workload and lack of support from supervisors were some of the reasons (Moatlhodi, 2003:[s.p.]). A synopsis of this report is included in Appendix B. In addition, a survey by the researcher in 2003 revealed that, amongst other reasons, Department of Defence students were not familiar with the distance learning mode of delivery. This survey was done with College of Educational Technology's ETD facilitators. The synopsis of this survey is included in Appendix C.

Thus, through ongoing research at the College of Educational Technology (COLET), it became known that there is a learning need amongst distance students coming from a conventional environment, to study through this mode. It is also apparent that student support, being the backbone of distance learning delivery, is also lacking. The common understanding in the distance learning environment is that, because students are isolated in time and space, it is extremely important to give them the support they need to achieve their educational goals. The dominant view is that student support services and systems include a wide range of activities, all of which need to be planned and budgeted for.

Siaciwena (1996), Nonyongo and Ngengebule (1998), Mills and Tait (1996), Lockwood (1995), Cheng and Lam (1993), and Sewart (1993), cited by Rumajogee, (2002:81-82) concluded that these activities could be divided into three main categories by the student needs they address, and these were: (a) teaching and learning needs, (b) access and information needs, and (c) social and personal needs. Thus, it has been determined that distance learning programmes must be developed for the Department of Defence adult students through which the essential distance learning skills can be learned and developed. These programmes should be vehicles through which student support services and systems should be developed.

As noted by Viljoen (1999:7), that distance learning in the South African National Defence Force will probably always be a component of any course, since most courses demanded that the students gather on a central place for varying periods for certain practical aspects of their training. The form of distance learning would therefore consist of distance learning phases alternated by a residential phase, contact phase, and coupled to a practical phase. The success of distance learning in the South African National Defence Force would, as for any other training, depend on ensuring the provision of student support through understanding and proper instructional design and development work.

Therefore, this research undertaking should be understood in the context of seeking to understand these issues. It is part of the ongoing research to determine the reasons and causes of distance learning ineffectiveness in the South African National Defence Force that result in drop out and non-completion of learning programmes by the students.

1.10 CONCEPTUAL FRAMEWORK OF THE STUDY

The conceptual framework of this study is based on the view that problems in the Department of Defence distance learning could be the result of outdated instructional or programme design methods, approaches or inadequacy thereof and thus lack of or inappropriate student support. Therefore, an appropriate instructional design method based on discipline or dialogue approach, is vital. Scientific advancement in cognitive science and instructional technology suggest significant changes in methods of curricular and instructional design. These advancements extend the predominantly applied behavioral design and management (Tennyson, 1990:9). According to Jonassen (1990:32), although behaviorism has been largely replaced by cognitive psychology in descriptions of how learning occurs, much of instructional design practice remains behaviorist. Presently, schools under-emphasize the skill set that can be best described as the *tools of learning* in favor of a corpus of prescribed content (Keller & Reigeluth, 2004:18). Conventional curriculum planning is a loose process and responsible for students failing to reach acceptable standards of achievement (Kemp, 2003:57).

The classical behavioural objectives in education outlines precisely for the student what has to be done and is one way of structuring the learning materials. Most traditional…instruction and curricula are based on the transmission, or absorption, view of teaching and learning. In this view, students passively absorb … structures invented by others and recorded in texts or …by authoritative … (Clements & Battista, 1990:34). Kemp (2003:57) cited Rose (2002) that she quoted Nunan (1983), as to why the instructional design process has had little effect on either the public schools or higher education said that the:

> "Intent was to exert control over the activities and participants in the classroom, and they justify this by appealing to theories and techniques which are 'superior' to those possessed by teachers".

The Department of Defence or the South African National Defence Force is very familiar with this formal structure and style of doing things. It prescribes the way teaching had to happen and at times in a very formal way. It set specific targets, pass rates, entry requirements and types of examinations they wanted. It is very prescriptive in how the teaching and learning has to take place and how the outcomes have to be achieved.

Opposed to the above is 'dialogue' or also the 'dialectic' argument that called for a move away from the prescriptiveness of doing something. Doing and thinking becomes more open through 'dialogue'. Stakeholders debate the value of certain content, since content is no longer agreed upon, the admission of students into the programme is not appropriate and the way examinations are set, is also not settled or prescriptive any more. We had moved away from the 'disciplinary' way of thinking, we don't think in terms of fixed boundaries or discipline any longer – 'dialogue' has opened up options and opportunities.

The conceptual framework of this study began by constructing a theoretical framework around a number of good programme evaluation models accompanied by learning theories of behaviourism, cognitivism, constructivism and then incorporated Michael Moore's 'theory of Transactional Distance' into the theoretical framework. Moore's model would therefore be fitted into the instructional design (or mode of delivery).

The next step would be to design, from the theoretical framework, a conceptual framework. This meant that the theoretical framework would serve as basis from where the conceptual framework can then be constructed. The conceptual framework is the model that would be used to evaluate the distance education programmes of the Department of Defence and the South African National Defence Force in the current study. In addition, this conceptual framework will provide some idea of what components to use when the efficiency of the Department of Defence and South African National Defence Force distance education programmes have to be assessed. In other words, this would be regarded as a form of 'student support' in the South African National Defence Force distance education programmes.

The conceptual framework is discussed in detail in chapter five under the heading 'Theoretical Framework'. According to Kumar (2001), the terms conceptual framework, analytical framework, theoretical framework and theoretical perspective are often used interchangeably depending on the manner in which the author using a particular term defines it. The term 'conceptual framework' is used here to denote a concept or way of thinking; while the term theoretical framework is a detailed explanation of the 'conceptual framework. Although there is no precise standard that specifies when a term preceding the word framework is to be used, it is based on one common principle. It specified a relationship between more than one concept and variable. A detailed definition of the term 'theoretical framework' is provided in chapter five.

1.11 RESEARCH DESIGN, METHODOLOGY AND STRATEGIES

The main approach of this research is a qualitative design. The summary of design, strategy and methods of this study is outlined in this section. These issues will be discussed comprehensively in chapter six. The design of this research addresses an approach that is non-experimental and descriptive in nature and where a current phenomenon dialogue as an integral part of instructional design and programme evaluation of distance learning programmes within the Department of Defence is observed and analysed in order to address the research problem. This design is based on qualitative approach. The feasibility of the research is assured by focusing on distance learning institutions, practitioners and students.

1.11.1   Population and sample

The population in this study comprised distance learning instructors or facilitators, distance learning course managers, and course coordinators at distance education institutions in the Department of Defence. The Department of Defence (DOD) and the South African National Defence Force (SANDF) is divided into four Arms of Service (AoSs), being the South African Army (SAA), the South African Air Force (SAAF), the South African Navy (SAN), and the South African Military Health Service (SAMHS). Each AoSs has distance learning and face-to-face institutions giving instruction to their respective students according to the specifications or doctrines of these AoSs. There are approximately 11 distance learning institutions in the Department of Defence and South African National Defence Force divided among these AoSs, including the Military Academy that caters for tertiary military education. The choice of the sample is based on their importance to the study; and ultimately the total sample drawn at three distance learning institutions; being the South African Army College, South African Air Force College, and the SA Military Health School (each from an AoSs). The South African Navy declined to participate claiming they no longer have an institution in the South African Navy (as an AoSs) conducting studies through distance education. In addition, all three institutions cited the difficulty of the availability of students if the institutions were not in school session. Instead, the researcher was allocated focused groups in all three institutions and later specific individuals were approached for information sought. These focused groups and individuals comprised of distance learning course managers, course coordinators and instructors or facilitators in those particular institutions. The unavailability of student participation was replaced by the analysis of student reports normally collected by programme managers at the end of each programme at the various institutions.

1.11.2 Data collection

<u>Interviews</u>. Focused group and individual (personal) consisting of, administrators, coordinators, and instructors of distance education of the South African Army College, South African Air Force College, and the South African Military Health School were interviewed utilizing unstructured, open-ended questions interview schedules.

<u>Document analysis</u>. Department of Defence curriculum and assessment instructions and other policy documents were analysed for relevancy. These consisted of the Defence Review, White Paper on Defence, Department of Defence Annual Reports, the first and second reports of 1997 DOD ETD Project Team, and the DOD ETD Policy. In addition, since the learners were unable to participate in the study, student reports of distance education learners of the South African Army College, South African Air Force College, and the South African Military Health School were obtained and used to analyse relevant and specific data.

<u>Literature study</u>. Literature study as data-collection method was utilized to determine the need and focus of the problem. In addition, this method was utilized in order to determine relevant theories and arguments surrounding the stated topic.

<u>Researcher's experience</u>. The researcher's own experience, as a senior military ETD practitioner in the Department of Defence supplemented the literature study and document analysis. Informal discussions with colleagues, Education, Training and Development researchers, practitioners, military and non-military practitioners in organizations such as the National Associations of Distance Education of South Africa (NADEOSA) and the South African Institute of Distance Education (SAIDE), also enhanced, supported and verified the researcher's opinion.

1.11.3 Data analysis

Data collection and analysis was a simultaneous process; that is, data analysis was begun during data collection. Data was classified according to properties that characterize them. Details about each sub-question was organised, arranged and categorised in a logical and chronological order. Categories that assisted to cluster data into meaningful groups were identified. Then synthesis and generalizations were made. The detail on this account is discussed in chapter six.

1.12 CHAPTER OUTLINE

This study is divided into eight chapters as follows:

- Chapter 1 indicates the scope of the study and methods used. It includes an introduction; problem definition, aims and objectives; background and rationale for the study; and the conceptual framework of the study.

- Chapter 2 explores Education, Training and Development (ETD) in the Department of Defence (DOD) or South African National Defence Force (SANDF). It begins with the mandate and progresses to the structure of the DOD, with reference to ETD.

- Chapter 3 discusses the design and development of distance learning programmes and materials in the DOD. This includes instructional design methodologies according to each Arm of Service (AoSs).

- Chapter 4 analyses what has already been written with reference to the concepts of distance learning in the military and in other public distance learning environments. The aim was to determine and analyse information relevant to the study.

- Chapter 5 focuses on the theoretical framework of the study. This chapter provides a structure by specifying a relationship between two or more variables. These variables are contained in Michael Moore's theory of Transactional Distance; being instructional dialogue, programme structure and student autonomy. Another variable 'dialectic' is looked into. In addition, a variable of discipline is discussed.

- Chapter 6 outlines the methodological design of the study. The interview as an instrument; the sample design, size and processing; and the collection, analysis and evaluation of data is outlined.

- Chapter 7 provides an exposition of the empirical information required for the design of Distance Education (DE) programmes with the aim of identifying the nature of discipline or dialogue and how these factors impact on student support in the SANDF.

- Chapter 8 presents a discussion of the findings of the study, conclusions reached, recommendations and implications thereof, and suggestions for further study.

1.13 DEFINITION OF TERMS AND CONCEPTS

The following are the definitions of terms as used and understood by the researcher in the context of the study:

1.13.1   Curriculum development

According to Tyler (1949:1), developing the curriculum and plan of instruction should contain four fundamental variables: the purpose of education to be attained, the experiences of

education to be provided, the effective organisation of these experiences, and the determination if these purposes have been attained. Curriculum development is a human interaction process through which curriculum decisions are made (Wulf & Schave, 1984:137). The curriculum is all of the experiences that individual learners have in a programme of education whose purpose is to achieve broad goals and related specific objectives, which is planned in terms of a framework of theory and research or past and present professional practice (Hass & Parkay, 1993:3). According to Kelly (2004:15), the central purpose of the curriculum is the acquisition of content by pupils; the delivery of the content becomes its organisation; and evaluation is focussed on the degree of attainment achieved by the pupils. According to Rose (2004:9), instructional design and curriculum development have emerged as distinct fields with separate bodies of literature; and yet there is no real basis for this distinction because instructional design processes are as appropriate for developing textbooks …and instruction as they are for creating online courses, while curriculum developers have been known to produce computer-based modules.

1.13.2   Dialectic

Is the exchange of arguments and counter-arguments advocating propositions (theses) and counter-propositions (antitheses). The outcome of the exercise is not simply the refutation of one of the relevant points of view, but a synthesis or combination of the opposing assertions, or at least a qualitative transformation in the direction of the dialogue. The aim of the dialectical method is to try and resolve the disagreement through rational discussion, and ultimately, the search for truth (Ollman, 2007:[s.p.]).

1.13.3   Dialogue

Is a two-way communication between two or more people (e.g. instructors and students). It is two-way because everybody takes part in the communication process, thus it demands partnership, respect, warmth, consideration, understanding, honesty, sincerity, etc., in order to reach an amicable solution (Moore, 1993, in Keegan, 1993). Dialogue occurs as learners engage with course materials, facilitators and fellow learners, and relate the course content to their organisational contexts (Welch & Read, 2005:181). The term 'dialectic' is derived from Greek meaning 'to converse' or 'to discourse' (Flew. 1981:94).

1.13.4   Discipline

The Longman (2001:382) dictionary defines discipline in three distinct ways, as (1) the practice of making people obey rules and orders, (2) a method of training your mind or learning to control your behaviour, or (3) an area of knowledge that is studied. This study is concerned with the combination of all three explanations, in that it refers to the formal structure in teaching and learning a subject. Ralph Tyler's (1949:126) curriculum building

deals with planning a program of instruction from a point of view of the students examining its purposes, functions and structure in order to attain a picture of their interrelations. Thus, discipline, specifically subject discipline or subject matter forms an important component of a course rationale (Posner & Rudnitsky, 2006:84-85). Another meaning of discipline is it relates to authority with which it is often intertwined and seen as precondition to an authoritarian order and control of society.

1.13.5   Distance learning

Distance learning is referred to in many terms such as distance education, distributed learning, online learning, and e-learning and/or web-based instruction (Duangploy, Williams, & Gray, 2007:13). The University of Pretoria (2009:5), defines distance education as educational provision in which teaching and learning are predominantly asynchronous. That is, teaching and learning or instruction can take place on- and off-campus (traditional and face-to-face instruction). Distance learning requires different kinds of learning modes, such as independent learning, group learning, and discussion with learners (Kubota, Terashima, Nakahashi, & Morioka, 2008:169). Distance learning is a planned learning programme characterised by self-study (Makin, 2001:25). Distance education is the extension of traditional and formal learning and instruction (Wang & Liu, 2003:[s.p.]). It has been shaped into a new type of information process of instruction and learning, covering both pre-tertiary and tertiary levels as well as lifelong education activities *(Ibid)*. Distance learning means making materials accessible instantaneously on demand, with high production values that are routine, and learners and teachers can communicate either synchronously or asynchronously (Massy & Zemsky, 2004:11). Distance learning is a learning environment where student and teacher are separated by space, but not necessarily by time (Valentine, 2002:[s.p.]).

1.13.6   Drop-out

Woodley (2004:54) contends that while most researchers agree that 'drop-out concerns students who leave an educational course or programme without successfully completing it' lack of precision has caused some concerns in this area of research because different researchers have used different definitions of drop-out, and have often failed to say which one they are using. Drop-out is non-completion in distance education (Parker, 1999:[s.p.]). Drop-out is synonymous with unsuccessful completion, early departure, non-persistence, and withdrawal from distance learning programmes (Yorke, 2004:19-21).

1.13.7   Education, Training and Development (ETD)

Education refers to activities that provide the knowledge, skills, and moral values that are needed in the ordinary course of life (Erasmus & Dyk, 2003:2). Education encompasses a wide range of activities rather than merely equipping an individual with specific skills to

perform a particular job or function (Meyer, Bushney, Katz, Knoke, Lategan, Ludike, Meyer, Nel, Schenk, Smith, van Niekerk, & Wolfson, 2007:5). Training is the way in which an organisation uses a systematic process to modify the knowledge, skills and behaviour of employees so that it can achieve its objectives (Erasmus & Dyk, 2003:2). Training entails the transfer of specific skills to an employee so that he or she can perform a very specific job or task (Meyer, *et al*, 2007:6). Development refers to employee development within an enterprise rather than that of the individual in general (Erasmus & Dyk, 2003:3). Development occurs when ongoing learning opportunities are created so that employees can improve and maintain high levels of performance (Meyer, *et al*, 2007:6). Education, Training and Development Education (ETD) is the term used to describe the practices which directly or indirectly promote or support learning (*Ibid*). Presenting, training, designing learning materials and managing training programmes are all examples of such practices (ETD Practices Project, 1998 cited by Meyer, *et al*, 2007:6). Education, Training and Development Education (ETD) is regarded as a systematic and planned approach to change the knowledge, skills and behaviour of people in such a way that organisational objectives are achieved (DOD ETD Project Team, 1997a:A1). Training and Development (ETD) in its broadest sense could be defined as the total set of human activities where a person who does not yet know or does not yet have the ability to do something is guided by a person who knows and can do something towards instilling knowledge and developing skill, ability and attitude.

1.13.8   DOD ETD Process.

The ETD Process entails the phases of needs analysis, design, delivery and the evaluation of ETD (Meyer, *et al*, 2007:7). The DOD describes the ETD Process as a systematic and planned process to change the knowledge, skills, abilities and behaviour of people in such a way that organisational objectives are achieved (DOD ETD Project Team 1997a:19). As such the DOD ETD Process is a systematic process used by the department of defence to plan and design an instruction or curriculum to be applicable to the department of defence teaching and learning institutions.

1.13.9   Instructional design

'Instructional design' and 'instructional development' are used interchangeably in the literature of instructional technology (Kang, 2004:39). Instructional systems design (ISD) is the systematic design, development, implementation, and evaluation of instructional materials, courses, lessons, units, modules, and curricula in order to improve student learning and teaching efficiency (Abedor & Sachs, 1984 cited by Martin, 2004:13). Instructional design is the systematic planning and development of instruction (Ruffini, 2000:58). Instructional design is a discipline that employs systematic processes involving the use of

learning and instructional theory to ensure educational quality and optimal student learning environments (Collins & Berge, 2003:21). According to Briggs (1970), instructional design is the entire process of analysis of learning needs and goals and the development of a delivery system to meet the needs; it includes development of instruction and instructional materials and activities; and tryout and revision of all instruction and student assessment activities.

1.13.10   Student support

Student support is to provide educational help to the student; it should focus on distance education as a cost-effective alternative to face-to-face tuition and as a highly individualised mode of learning; it helps in the successful completion of the course (Gujjar, Chaudhry & Chaudhry, 2009:354). Student support is that as a teacher's task is to construct the conditions of the learner's interaction such that their experience enables them to learn support maybe required in order that students come to an understanding of both the material and the conditions being constructed (De Fazio, Gilding & Zorzenon, 2000:[s.p.]). Student support is the entire range of methods and strategies employed in the presentation and delivery of courses aimed at assisting and enables students to comprehend fully, assimilate and master the knowledge, skills, abilities and attitudes needed to achieve success in their studies (SAIDE, 1999:14). Student support is aimed at enhancing the conversation between the student and the teacher (UNISA, 2010:10).

1.13.11   Transactional distance

According to Moore (1993, cited in Keegan, 1993:23), three major variables affect the transactional distance: (a) the instructional dialogue, (b) programme structure, and (c) autonomy of the student. Mueller (1997[s.p.]) says that the term transactional distance replaced the older term distance education. It denotes the special nature of the relationship between the student and the instructor during the distance learning event: mutually acting on each other, affecting each other to evoke an experience, a meaning, for the individual student during this event (Stirling, 1997[s.p.]). Transactional distance theory is a set of interrelated distance learning systems that is sustainable by student support (Gorsky & Caspi, 2005[s.p.]). Therefore, transactional distance is the theory that describes the nature of the relationship between the students, the instructor and the institution which is responsible for instructional policies, instructional design issues, and policy-making in relation to the physical space felt by the student. Transactional distance is determined by the function of "structure" and "dialogue" and "learner autonomy"; and be employed to assess distance learning environment (Kubota, Terashima, Nakahashi, & Morioka, (2008:167).

1.14 CONCLUSION

This chapter served as an introduction to the entire study. It highlighted some of the typical problems often encountered in the distance learning mode of instruction and institutions. It discussed the background that led to conducting the study and the rationale for undertaking the research by describing the importance of student support in distance learning settings. It highlighted the problem statement, the main research question and sub-research questions. The aims and objectives of the study were also discussed in this chapter. This chapter also briefly discussed the research methodologies and strategies that include the population, sample, data-collection techniques, and data-collection methods. The chapter concluded by describing the chapter outlines of the entire study and defined some important terms that will be used in the study. The next chapter discusses the Department of Defence (DOD) and/or the South African National Defence (SANDF) Education, Training and Development (ETD) system and problems experienced in general and specifically in distance learning mode of instruction.

CHAPTER 2

EDUCATION, TRAINING AND DEVELOPMENT (ETD) IN THE DEPARTMENT OF DEFENCE (DOD) AND SOUTH AFRICAN NATIONAL DEFENCE FORCE (SANDF)

2.1. INTRODUCTION

This chapter discusses the education and training system in the Department of Defence in general and distance education in particular. It begins by reviewing the mandate given to the Department of Defence by the Constitution of the Republic of South Africa. The organizations and structures of South African defence system and their responsibilities to the Education, Training and Development system followed whereby the need for Education, Training and Development in the Department of Defence is also raised. The chapter discusses why the Department of Defence prefers to use the terms, "distance education" and "distance learning" as opposed to other terms used in this mode of instruction and delivery, the reasons for preferring to adopt distance learning, and the fact that the institutions of the South African National Defence Force currently provide their instruction through distance education.

The chapter also discusses the level of technology utilized in distance education compatible with recorded generations of distance education. In an endeavor to transform the Department of Defence ETD system, the Project Team undertook a study within the South African National Defence Force in order to obtain this transformation. A number of problems were identified by the Project Team within the Department of Defence ETD system. The chapter ends off by highlighting some of these problems, especially those that had a negative impact on distance learning. The possible solutions to these problems are also highlighted.

2.1.1 The mandate of the Department of Defence

The mission, vision and aim of the department of defence derive from the mandate contained in the Constitution, Defence Review and White Paper on Defence (DOD Annual Report, 2003/2004:4). The mission is to provide, manage, prepare and employ defence capabilities commensurate with the needs of South Africa as regulated by the Constitution, national legislation, and parliamentary and executive direction. In its vision, the Department of Defence ensures effective defence for a democratic South Africa, thereby enhancing national, regional and global security through balanced, modern, affordable and technologically advanced defence.

Thus, the aim of the Department of Defence is to defend and protect the Republic of South Africa, its territorial integrity and its people in accordance with the Constitution. These

imperatives are long term in nature and form the basis for the South African National Defence Force design, required to produce its capabilities needed to execute its mandate. The force design and defence capabilities are designed to protect the sovereignty of the Republic of South Africa and to deter aggression. In times of peace, the Defence Force's capabilities are utilized to the country's best advantage (DOD Annual Report, 2002/2003:2).

The extremely high cost of modern weapon systems, length of time required in introducing the systems into service and the relatively long lifespan of modern weapon systems require the Department of Defence to make long-term capital acquisition plans. Similarly, the level of skills required by the personnel operating, supporting and maintaining the weapon systems requires the development of long-term human relations and training plans. Hence, training has always formed an integral part of the preparation of forces for war as constantly been undertaken by the South African National Defence Force (South African White Paper on Defence, 1996:10). Training is directed towards equipping its members with the necessary skills, knowledge and attitudes for service in the South African National Defence Force.

The South African National Defence Force provides more than two thousand formal courses per year, ranging from professional and military development courses to war fighting skills training (South African Defence Review, 1998:84). Most of these programmes are offered through conventional face-to-face or residential approach and last a week while others last a year or more. In addition, the South African National Defence Force also trains a large proportion of its members in industry-related skills. While the starting level for most courses is at Grade 12, some senior courses are presented on a post-graduate level. The Defence Review suggested that distance education through correspondence with an inclusion of a practical phase is another option to manage the above programmes and providing education and training to Department of Defence members (South African Defence Review, 1998:85).

2.1.2 Organisations and structures of the South African Defence system and their responsibilities to the Department of Defence (DOD) Education, Training and Development (ETD)

The Department of Defence is a large, complex and rather complicated organisation that is continuously transforming and constantly reviewing its organisational structure in order to ensure alignment between the department's strategic objectives, the budget allocation, ordered commitments and likely missions. It takes all the measures required to ensure that defence policy is fully aligned with all aspects of national policy. All new legislation promulgated are analysed, and Department of Defence policy that requires amending or promulgation is duly

amended or promulgated as Department of Defence Instructions (DODI) and/or Directives. The Department of Defence policy is responsible for administering and directing the activities of the Department of Defence. The Department of Defence, unlike most other state departments, does not provide a direct service to the citizens of South Africa, but does so through the state departments that it supports when so tasked. It provides support required by other state departments as efficiently, effectively and economically as possible. The outputs provided by the Department of Defence are in most cases not easily visible to the public, with the exception of the operations executed by the South African National Defence Force in the form of Peace Support Operations (PSO) and disaster relief in neighbouring countries and assistance provided to the South African Police Service (SAPS) in emergency situations.

The Department of Defence structure helps to understand how and where, for example, ETD policies and plans are formulated, promulgated and executed in accordance with relevant regulations such as the Skills Development Act. The Department of Defence organizations and structure are important in the study at hand in that they affect the Department of Defence ETD. The Department of Defence ETD policies and/or suggestions are analysed and approved at some Department of Defence organisational and hierarchical levels. Like other public services or entities, the Department of Defence also recognizes, employs and is divided according to different levels. At Level 0, the Minister of Defence (MOD) and the Deputy Minister of Defence (Table 2.1) (collectively known as the Ministry of Defence – MOD) are responsible for providing political direction to the Department of Defence. With reference to ETD, the MOD establishes the basic doctrine in order to provide the foundation for its practical application.

Thus, the organisation and structure of the South African Defence system provides the philosophical framework within which training should be conducted. The Department of Defence ETD Doctrine is complemented by the principles of national education, like the National Qualification Framework (NQF), the South African Qualifications Authority (SAQA), and the Arms of Services (AoSs). In addition, strategies are developed to provide longer-term direction for Department of Defence ETD. They set key objectives, define responsibilities, provide guidance, and allocate priorities. The Department of Defence ETD strategies are developed and promulgated by the appropriate staff in the Ministry of Defence. The allocation of responsibilities for the direction of Department of Defence ETD according to the Levels, Organisation or Forum in the DOD and the forum by which this is done is summarised in Table 2.1 below. The two primary functional entities within the Department of Defence at Level 1 are that of the Defence Secretariat (Def Sec) and the South African

National Defence Force (Table 2.1). These entities advice the Minister of Defence through the Council on Defence (CoD) on the military implications of defence policies, which are balanced against political demands and constraints. They have overall responsibility for policy governing the provision of DOD ETD. The control of Department of Defence ETD is retained at this level with the detail allocation of resources and the control of commitments. The Department of Defence ETD policies give direction on how strategies are to be implemented as well as guidance on the meeting of key objectives. In addition, at Level 2, the SANDF consists of four Arms of Service (AoSs), namely the South African Army (SAA), South African Air Force (SAAF), South African Navy (SAN) and South African Military Health Service (SAMHS) (Table 2.1).

Members of the South African National Defence Force are educated, trained and developed according to their AoSs character, Corps, Mustering and occupational specifications and specializations. The AoSs are responsible for setting, developing and promulgating individual and Corps ETD policies. They also control and are responsible for determining their individual ETD standards.

At Level 3, Divisions and Formations (Table 2.1) provide Department of Defence ETD directives down to unit level. Other formations such as the Training Command Formation develop and promulgate Joint Department of Defence ETD policies. They are also responsible for the provision of professional ETD through fourth level structures. The Training Command Formation is discussed in detail under the Training Command Formation section.

The training institutions are normally located at Level 4 in the Department of Defence organizational structure (Table 2.1). They are responsible for the provision of ETD opportunities. They produce, implement and evaluate individual training programmes. Those that fall under the ambit of Training Command Formation are responsible for developing and implementing joint and professional ETD opportunities.

2.1.2.1 The SA Defence System and their responsibilities in the DOD ETD

LEVEL	ORGANISATION / FORUM		RESPONSIBILITY
0	**Ministry of Defence (MOD)** Minister of Defence Deputy Minister of Defence [Council on Defence]		DOD ETD Doctrine DOD ETD Plans DOD ETD Strategy
1	**Department of Defence (DOD)** [Defence Staff Council-DSC]. [Military Command Council-MCC]		DOD ETD Policies. Allocation and Control of DOD ETD Resources.
	Defence Secretariat. Secretary for Defence (Sec Def).	South African National Defence Force (SANDF). Chief of the SANDF.	
2	**Arms of Service (AoSs)** SA Army (SAA) – Chief of the Army. SA Air Force (SAAF) – Chief of the Air Force. SA Navy (SAN) – Chief of the Navy. SA Military Health Service (SAMHS) – Surgeon General.		Setting, Development and promulgation of individual ETD Policy. Determination of individual unique ETD Standards. Control of individual ETD.
3	**Divisions (Divs)** e.g. Finance, Policy & Plans, Joint Support, Joint Operations, etc. **Formations (Fmns)** e.g. Training Command, Artillery Fmn, Amour Fmn, Engineer Fmn, Intelligence Fmn, etc.		DOD ETD Directives/ Instructions. Development and promulgation of Joint DOD ETD. Provision of Professional DOD ETD.
4	Units, Bases, Stations, Training Institutions (e.g. Corps schools, Training Centres, etc.).		Production of training programmes. Implementation of joint and unique individual training.

Table 2.1: Organisational diagram of the SA Defence System and their responsibilities to the DOD ETD. (Adapted from the SA Dept of Defence 1995/1996 Annual Report and modified for the study)

2.1.3 Training Command Formation

In 1997, the DOD ETD Project Team realised that there was a lack of jointness or coordination of ETD among the AoSs, especially where courses and/or training were common (DOD ETD Project Team Report, 1997b:3). The fiscal year 2001/2002 heralded the official

launch of the Training Command Formation (Trg Comnd Fmn) as a functioning business unit of the SANDF. All training in the SANDF is vested in the Chief of the South African National Defence Force (CSANDF) in terms of the Constitution (1996) and the Defence Act.

The Trg Comnd Fmn is responsible for the formulation, developing and promulgation of the Department of Defence ETD Policy for military and civilian members of the DOD as an ongoing process. It oversees the DOD ETD services; providing joint and common "non-combat/mission" ETD opportunities; managing the Department of Defence's Training Command Delivery System; developing the HR development policy and ETD Administrative, Operational and Technical (AOT) policy and doctrine, linking up with other state departments and statutory forums on behalf of the Department of Defence.

The Trg Comnd Fmn is also responsible for developing, provisioning and implementation of the Department of Defence ETD Systems Integrity policy and doctrine and provisioning of the DOD ETD quality assurance process. It is responsible for the implementation of the South African Qualifications Authority (SAQA) and the Skills Development Acts within the Department of Defence. It is also responsible for the promotion of a culture of life-long learning and the encouragement of all the Department of Defence learning institutions to seek accreditation with their relevant Sector Education Training Authorities (SETAs).

The Training Command Formation presented joint learning opportunities in order to promote and ensure the continuous improvement of the Department of Defence ETD system. The Training Command Formation is responsible for providing military professional development as it oversees approximately 52 Department of Defence ETD institutions.

Various fourth level structures that presented joint, common "non-combat/mission" and professional ETD opportunities within the Department of Defence fall under the direct command and control of Training Command Formation (Figure 2.1). This includes the Military Academy that provides academic and military training programmes throughout the year in distance and residential modes. The South African National Defence College (SANDC) provides an integrated strategic security developmental learning opportunity called the Executive National Security Programme (ENSP) to senior members of the Department of Defence bi-annually.

The South African National War College (SANWC) presents the Joint Senior Command and Staff Programme (JSCSP) once a year to senior members. The SANDF COLET is an

establishment for educational technology equipping the Department of Defence instructors with the necessary skills of facilitation, teaching and instructing through both distance and face-to-face modes of instruction. The War Simulation Centre provides simulation activities to senior staff courses. The Personnel Service School (PSS) provides human resources, public relations and quality management opportunities to the Department of Defence members. The organisational diagram of Trg Comnd Fmn is provided in Figure 2.1.
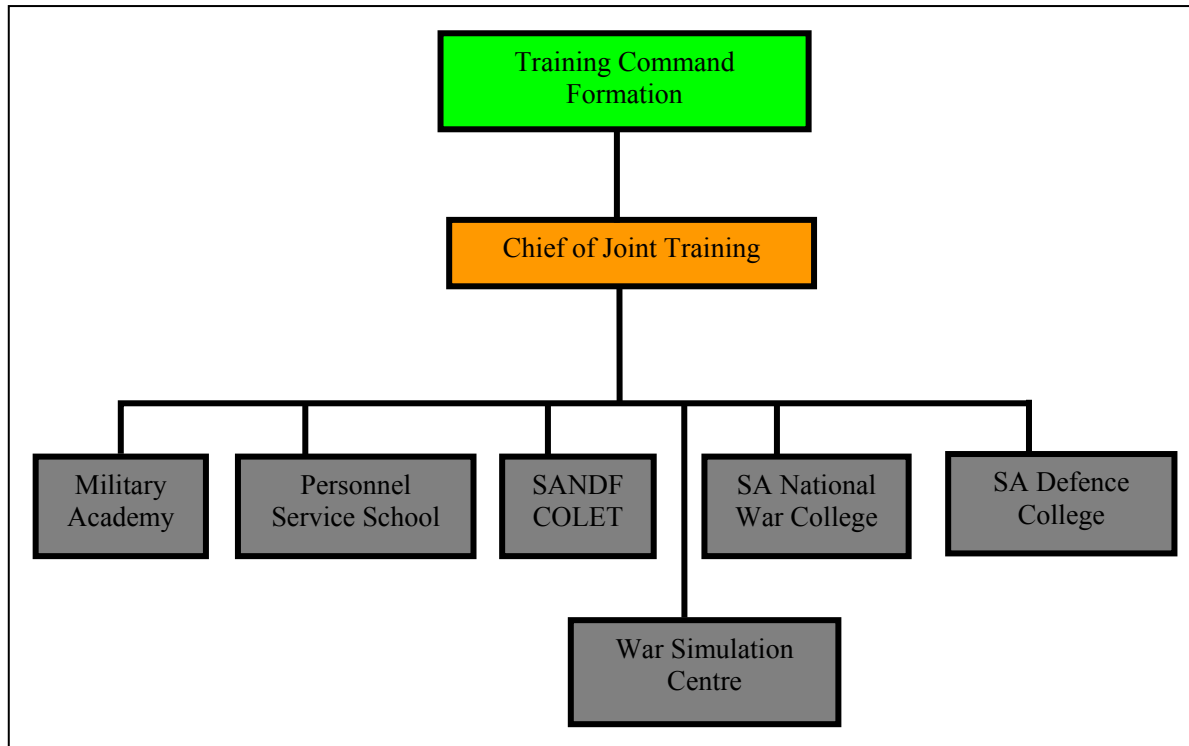
Figure 2.1:   Organisational Diagram of Training Command Formation (Trg Comnd Fmn).
(Adapted from the S.A. Department of Defence 2001/2002 Annual Report)

2.2 THE NEED FOR EDUCATION, TRAINING AND DEVELOPMENT IN THE DEPARTMENT OF DEFENCE

The Department of Defence regards Education, Training and Development (ETD) as a systematic and planned process to change the knowledge, skills and behaviour of its people in such a way that organizational objectives may be achieved (DOD ETD Project Team Report, 1997a:5). ETD programmes within the SANDF are a cardinal means of building and maintaining a high level of professionalism (White Paper on Defence, 1996:10). These programmes are based on clearly identified training needs, linked to work, and to South African national and international standards. In this regard, the Constitution provides that all members of the SANDF "shall be properly trained in order to comply with international standards of competency" (Section 226 (5)).

Thus, it is on this basis that the Department of Defence endeavours to link its learning programmes to the government's National Skills Development Strategy of 2001. The DOD is continuously aligning its programmes with the outcomes-based format. To obtain this

alignment, the SANDF established a Defence Training Board, which is affiliated to the South African Qualifications Authority (SAQA), thereby gaining access to the National Qualification Framework (NQF), (South African Defence Review, 1998:84). At the heart of training is the preparation of officers and other ranks to fulfill the SANDF's function of defence against external aggression. Special training programmes are required to standardize procedures and meet other Constitutional obligations. These programmes include equal opportunities programmes, civic education programmes and other occupationally directed ETD programmes to meet the particular needs of full-time forces (South African Defence Review, 1998:84-86). Training is structured hierarchically to allow for individual career development, popularly known in the Department of Defence ETD system as "career path".

ETD plays an essential role in developing the political and ethical dimensions of military professionalism. Specific training programmes are conducted to prepare military personnel for regional security co-operation and involvement. The SANDF, together with the International Committee of the Red Cross, developed a comprehensive curriculum on international humanitarian law and international law on armed conflict. In addition the Department of Defence constantly educates trains and develops its personnel through ETD programmes.

2.3   THE CONCEPT 'DISTANCE EDUCATION' IN THE DOD

Many terms, like 'distance education,' 'distance learning,' 'flexible learning,' etc., in essence referred to a learning situation where the student and the facilitator are separated from each other by time and distance. Distance learning is utilised by academic institutions such as the University of South Africa (UNISA), Technikon South Africa and Vista University[5] while the concept of 'virtual' or 'distributed learning' is used in Canada and America to emphasise the role of advanced information communication technologies such as the World Wide Web and satellite systems. Open learning is the term normally preferred in Europe, especially in England. These terms and concepts are used interchangeably in the field of distance education and are discussed as such in the current study.

On the African continent, various terms are used for this mode of learning delivery. In sub-Saharan Africa commonly used terms associated with distance learning are home study, independent study, correspondence education, student centred education, self-instruction,

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[5] On 1 January 2004 the new UNISA officially came into being through the merger of the former University of South Africa and Technikon Southern Africa and the incorporation of Vista University Distance Education Campus, Vudec.

open access, adult education, external studies, distance teaching, distributed learning, technology-based or mediated education and continuing education (Rumajogee, 2002:21).

Although e-learning is often used synonymously with distance learning, it only denoted the distance learning where local area networks (LAN) and wide area networks (WAN) are utilised as delivery media (Van der Walt, 2004:13). A common term, which relates to the previous statement, is 'blended learning' that advocates a mixture of delivery modes, for example, a learning programme that is presented with a combination of classroom and distance learning. Distance learning (DL) is the preferred term in the Department of Defence as it emphasises two important factors. Firstly it emphasised the responsibility of the student in the learning situation and secondly it is focused on the outcomes of the training namely that learning is supposed to have taken place (DOD ETD Project Team Report, 1997a:61).

2.4   DISTANCE LEARNING IN THE DOD AT PRESENT

Recently the Department of Defence Distance Learning Task Team[6] undertook a survey to determine the present need for distance learning in the Department of Defence. The questionnaire was distributed through the services and division directors of ETD to their respective training units. From the responses, it was determined that the following training institutions or units and their corresponding AoSs are in some form or the other involved with distance learning:

   a.   SA Army College (SAA),

   b.   SA Air Force College (SAAF),

   c.   School for Military Training (SAMHS),

   d.   School for Military Health Training (SAMHS),

   e.   SA Army School of Engineer (SAA),

   f.   School of Armour (SAA),

   g.   SAS Saldanha (SAN),

   h.   Naval Staff College (SAN),

   i.   SAS Simonsberg (SAN),

   j.   Infantry School (SAA), and

   k.   Defence Intelligence College (SAA).

There are approximately 11 institutions in the Department of Defence that conduct their education, training and development through distance education. The School of Artillery, the

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[6] In 2003, the current Chief of Joint Training, appointed a task team to do a thorough development
   with regards to distance learning in the DOD.

SAMHS' School for Military Health Training, and School of Military Training were not in Viljoen's 1999 original list (Appendix D).

2.5   REASONS FOR UTILISING DISTANCE LEARNING IN THE DOD

Many of the advantages of distance learning as cited by authors such as Nopachai and Zhang (1999:[s.p.]) also applies to the Department of Defence environment, for example, that it provides more flexibility in the learning situation, that costs for training are reduced and that more diverse students can be accommodated. In her paper presented at the 2002 DOD ETD Conference, the then Commandant of COLET, stated that, "the distance learning opportunities offered by COLET are much more flexible and client-oriented" (Bless, 2002:28). She went on to say that the opportunity accommodates even the lack of free time of the instructors, since distance learning is a part-time activity (*ibid*). Moreover, it reduces the cost of training as less subsistence and travel is required, and is less time consuming. Thus it is more efficient and effective. It is also less stressful for the student's unit and family. The students remained in their usual environment and even the contact sessions with the ETD Practitioners could take place at their unit.

In addition, since a large part of the learning takes place without the physical presence of the instructors, more students can be accommodated per programme, thus an increased number of students per year can be taught. Accordingly the College of Educational Technology (COLET) stands a better chance to satisfy the demands of all Department of Defence clients (Bless, 2002:29).
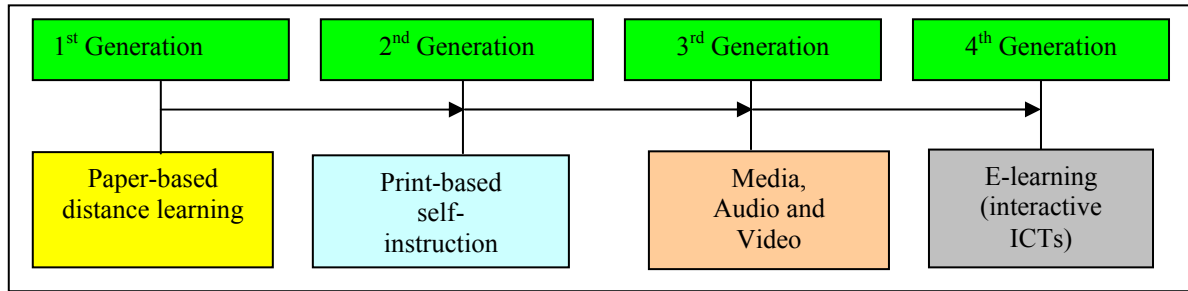
2.6   MODE OF DISTANCE LEARNING DELIVERY IN THE DOD

The Department of Defence is concerned with what methods and technologies are employed to enhance the learning process and how they were used in practice. At present, the Department of Defence is delivering distance learning mainly by means of paper-based or text-based materials, such as at the SAAF College and the College of Educational Technology (COLET). Others, such as the Army College, have a component of electronic delivery in the form of computer-based packages and the Intranet.

It is foreseen that there would be a continuum of delivery modes ranging from paper-based correspondence courses to print-based and computer-based to e-learning in the future (Figure 2.2 depicts such a continuum). These different generations are explained in detail in the 'Generations of Distance Education' section 2.7 of the current chapter. A lot of work needed to be done because the majority of students in the Department of Defence had little access to

computers. The technology used to present learning programmes is obsolete, old fashioned and had not been adapted to the distance learning environment.

2.6.1 Distance learning delivery in the Department of Defence (DOD)

Figure 2.2: A continuum of distance learning delivery in the DOD

2.7 GENERATIONS OF DISTANCE EDUCATION

It had been said earlier that it is foreseen that there would be a continuum of delivery modes of distance learning from paper-based correspondence courses through print and computer-based to e-learning in the future in the SANDF. This is possible as there has been development of different forms of distance education in developed countries over time. This development has been associated with technology of the relevant time (Garrison, 1989:52, 1996:17). These developments and their associated technologies have been classified into different generations of distance education (Keegan, 1993:19, Bates, 1994:1574, Garrison, 1989, 1996).

The major generations are discussed in this section and they, mostly, overlap each other. However, while Garrison (1989:235-41) identified three 'generations; Rumble (2001:73) identified four generations; and authors like Taylor (2001:[s.p.]), identified five. Other authors like Beaudoin (2003:[s.p.]), identified three stages of distance education. Beaudoin (2003:[s.p.]) argued that the rapid evolution of distance education delivery systems over the past twenty years had frequently been categorised into three stages, from correspondence education, to technology-assisted education and, more recently, social networking. According to Montgomerie, Irvine and Davenport (2001:[s.p.]), the instructional techniques and even the course content of distance education courses have, since its inception, been constrained by the speed and quality of student and instructor interaction. For over a hundred years, distance education is limited by the speed that the local postal service could deliver correspondence lessons. However, for the past 20 years two approaches have dominated how distance education is being delivered in developed countries: (1) audio conferencing and compressed video conferencing is being used for synchronous delivery, and (2) the Internet and its progeny, the World Wide Web (www), are used for asynchronous delivery (Montgomerie *et al.* 2001:[s.p.]). These approaches use different technologies.

According to Jacobson and Mark, (1995:[s.p.]) and Siberman, (1996:[s.p.]), as cited by Montgomerie *et al.* (2001:[s.p.]), students are active partners in the learning process. Students and instructors should be able to interact with each other and with information and instructional material in many different ways. This means that both synchronous and asynchronous facilities must be available. Features that are found in synchronous and asynchronous facilities are as follows:

2.7.1 Synchronous delivery

(1) More than two classes can be connected at the same time.
(2) A simple technological device is used to control which classrooms are connected.
(3) Each classroom is provided with a data projector to display the image of the instructor, image of the students at all other classrooms, students at one particular classroom, and three-dimensional images.
(4) Each classroom contains a monitor so that the instructor may view students in remote classrooms.
(5) Each classroom contains a large display, interactive electronic whiteboard (e.g. SmartBoard™), computer output, digitalized images, and hand-written comments on one board are reproduced on connected boards.
(6) A simple device (e.g. GUI) allows either centralised or individualised control displays in all classrooms.
(7) Instruction can originate from any classroom or from a remote instructor connected to the Internet.
(8) Video and audio are broadcast quality (e.g. MPEG-2).
(9) A centralized video server allows the storage and display of full-screen MPEG-2 streaming video and archiving of educational objects for student/instructor use.
(10) Each classroom contains networked computers that can be used to drive the interactive electronic whiteboard, allow students to collaborate using workgroup software, access the video server, etc., (adapted from Montgomerie *et al.* 2001:[s.p.]).

2.7.2. Asynchronous delivery

(1) High speed connections are available to student homes.
(2) A simple technological device is connected to allow students to access the different services available on the network.
(3) Students may use the same workgroup software on their home computers as in the classrooms.
(4) The school network is connected to the Internet, with authentication controlling different levels of access.
(5) The important streams from the synchronous lectures are stored on the video-server.
(6) Students are able to view the synchronous lectures from the video-server, with VCR-type control.
(7) Students are able to communicate with each other, with the instructors, submit assignments, use Web-based discussion groups, access asynchronous courses (e.g. Web-based instruction courses), etc.
(8) Parents/Family members can have a separate authentication on the school network to allow them to communicate with instructors and school officials, use the

Internet, take adult education courses, etc. (adapted from Montgomerie *et al.* 2001:[s.p.]).

2.7.3 The First Generation of Distance Education

According to Taylor (1995:[s.p.]):

> "Although Moses is regarded by many as the first external student, it was not until print technology replaced stones as the medium of instruction that correspondence education became an accepted part of mass public education systems".

The correspondence model is regarded as the first generation of distance education based on print technology (Taylor, 1995:[s.p.]; Peters, 1998:19). The first generation of distance education relied mainly upon correspondence and the mail system. It still remains the primary technology of distance education today (Keegan, 1993:17-18) and will continue to be the most-used form of delivery in the foreseeable future (Verduin & Clark, 1991:81). According to Garrison (1989:[s.p.]), the first generation will not be replaced by the second and third generations but will continue to have an effect alongside, or in correlation with, these.

Correspondence became the bridge between instructors and their students and served as the first basic pedagogic pattern for distance education (Peters, 1998:19). Print is by far the most-used medium and is considered the most important in the presentation of learning materials by distance educators (Verduin & Clark, 1991:81). Bates (1982) cited by Verduin and Clark (1991:82) noted that print is the most convenient and flexible medium for the presentation of new information and ideas and could be used by students selectively and at their own pace. Print technology is characterized by such media as books, reports, paper-based pamphlets, and journals. Later correspondence study did not just denote print study at a distance, but also the use of telephone tutoring as well as audiocassettes, phonograph records, and other mailable instructional materials delivered along with textbooks and study guides (Verduin & Clark, 1991:81).

Advantages associated with this generation are that it is a cost-effective and efficient method of providing access and meeting the demands for educational services (Keegan, 1993:18). Verduin and Clark (1991:82) noted that it was familiar, inexpensive, and portable. Its format allowed students access to any section, in any order, for any length of time. It may also be attractive to environments that have no other instructional medium except having paper-based and print technology. According to Verduin and Clark (1991:18), it was the only medium that could be utilised without additional equipment, anytime and anywhere that a source of light was available.

However, its major disadvantage is the lack of direct interaction between the students and the instructors and amongst the students because it depended largely on correspondence and mail to communicate messages. It has been constantly said that a critical dialogue to understand current knowledge and to encourage the development of new perspectives characterizes the transaction between instructor and student in distance education. According to Keegan (1993:17), "in the emerging paradigm the emphasis is on interpersonal and small group communication". In addition, it is that some authors might lack writing skills to distinguish between important and unimportant information. Another downside with print instruction at a distance is the limited speed of interaction (Verduin & Clark, 1991:82).

2.7.4   The Second Generation of Distance Education

The introduction of computers played a significant role in distance education learning resources as it added weight and value. Taylor (1995:[s.p.]) says the first generation of distance education was important to the second generation. He (Taylor) called it the Multi-media Model of distance education, because it entails the use of highly-developed and refined teaching-learning resources, including printed study guides, selected readings, videotapes, audiotapes, and computer-based courseware, including computer managed learning (CML), computer assisted learning (CAL), and interactive video (disk and tape).

The second generation was based on the possibilities provided by different versions of teleconferencing (Peters, 1998:10). Keegan (1993:18) observed that the second technological generation, that of teleconferencing, represented a radical move from the principle of mass access by requiring the student to give up considerable control of when and where to study. On the other hand what students lost in accessibility, they more than gained in quality of interaction. Students were now members of a learning group where immediate and sustained dialogue was possible not only with the instructor but also with fellow students. Keegan (1993:18) says that, "with the reality of sustained communication came the realization that education was more than providing access to information." Students were now provided with an improved opportunity and climate to analyze ideas, values and perspectives critically and in the process create and validate understanding with the instructors and among themselves.

According to Taylor (1995:[s.p.]), one of the strengths of the Multi-media Model of distance education was that:

> "It had concentrated efforts on improving the quality of the student's individual interaction with learning materials, such as specially designed printed materials, audiotapes, videotapes and computer-based learning packages, aimed at teaching concepts and cognitive

skills associated with clearly defined objectives in the context of a coherent curriculum."

Bates (1991:6), cited by Taylor (1995:[s.p.]), referrers to the Multi-media Model as social interaction between students and instructors and it needs to be balanced with the individual student's interaction with these teaching-learning resources.

2.7.5 The Third Generation of Distance Education

According to Peters (1998:10), the third generation of distance education went on to integrate the opportunities provided by learning with the help of personal computers, which were able to intensify trends in both the first and the second generations. First by providing suitable software, they gave direction and, through interaction, added value to the self-teaching of the student who was learning in isolation; and they also made databases easily available to help students gain knowledge independently of their instructors. In addition, they supplemented second-generation distance education by means of computer-mediated communication (CMC). With regards to first and second generations of distance education, the third generation was neutral in terms of pedagogics, which permitted distance education even greater flexibility and an enormous potential for change (Peters, 1998:10).

Keegan (1993:18) calls it 'the computer generation' because he regarded the third generation as perhaps the most promising and dominant application of computer-mediated communication (CMC). According to Taylor (1995:[s.p.]), Telelearning Model, as he referred to the 'third generation' of distance education, was based on the use of information technologies, including audio-teleconferencing, audiographic communication systems (e.g. Smart 2000), video conferencing, and broadcast television/radio with attendant audio-teleconferencing. This generation of distance education provided opportunities for synchronous communication. It also provided distinct methods of interaction educationally at a distance because "CMC combined the telecommunications of the second generation with computer capabilities" (Keegan, 1993:18).

In the third generation of distance education, distance educators have also recognized the need to provide opportunities for social interaction to support effective learning and have therefore tried to simulate face-to-face communication through the development of instructional systems based on the 'third generation' of distance education technologies such as audio-teleconferencing, audiographic communication systems, videoconferencing and computer-mediated communication (CMC) that can support contiguous two-way communication between students and instructors. However, Taylor (1995:[s.p.]) warned that it was worth

noting that the necessary balance between social and individual interactivity varied from course to course and it would be a function of such variables as the type of subject matter, the specific objectives of the course and the structure and quality of the learning materials, and not least, the student target audience.

2.7.6   The Fourth Generation of Distance Education

The fourth generation of distance education, the Flexible Model, as Taylor (2000:[s.p.]) called it, promised to combine the benefits of high quality CD-ROM-based interactive multimedia (IMM), with the enhanced interactivity and access to an increasingly extensive range of teaching-learning resources offered by connection to the Internet. Although the fourth generation of distance education was still gaining momentum, "as the new millennium was approached, there is already emerging the 'fifth generation' of distance education based on the further exploitation of new technologies" (Taylor, 2000:[s.p.]).

According to Taylor (2000:[s.p.]), depending on an institution, "the essential features of a fourth generation electronic teaching and learning environment support a learning process that is interactive, non-linear and collaborative." These features included the use of an interactive study chart as a basic navigational tool, which sets the broad parameters of the subject matter content to be investigated, and lists a number of exemplary references. References were electronic and linked to a specific Universal Remote Links (URL). Additionally, the students were free to surf the Net for supplementary teaching-learning resources that met their specific needs. They were also able to download assignments, with those of sufficient quality being added to the teaching-learning resources database for reference by future students *(ibid)*.

Taylor (2001:[s.p.]) said that at the University of Southern Queensland, the interaction with courseware materials is but one element of the interactivity built into this institution's pedagogical approach. Interaction with other students, teaching staff and other experts, who acted as mentors, is achieved through the use of computer-mediated communication (CMC), using a Web-based conferencing system. Students were encouraged to communicate through various electronic conferences, established for specific content areas as well as for informal social interaction *(ibid)*.

Fundamental to online pedagogy is the effective use of asynchronous computer-mediated communication (CMC) for ensuring effective interactivity, which is generally regarded as a key facet of face-to-face teaching and learning (Taylor, 2001:[s.p.]). It is worth noting that there is a qualitative difference between a traditional on-campus tutorial (real-time verbal

communication) and computer conferencing (asynchronous written communication) with the reflective and precise nature of the latter being very different from the spontaneous and less structured nature of oral discourse in either a face-to-face, video or audio teleconference context *(ibid).* Garrison (1997:5), as cited by Taylor (2000), highlighted that:

> "The reflective and explicit nature of the written word is a disciplined and rigorous form of thinking and communicating…it allowed time for reflection and, thereby, facilitates students making connections amongst ideas and constructing coherent knowledge structures".

2.7.7   The Fifth Generation of Distance Education

The fifth generation of distance education is essentially a derivation of the fourth generation, which aimed to capitalize on the features of the Internet and the Web. Taylor (2001:[s.p.]) called the fifth generation of distance education, the Intelligent Flexible Learning Model. For example, a key consideration for the fifth generation is the use of automated response systems to reduce the variable cost of computer-mediated communication (CMC) which in the fourth generation was quite resource intensive *(ibid).* Taylor (2001:[s.p.]) said that it was worth noting that prior to the advent of online delivery, variable costs tended to increase or decrease directly (often linearly) with fluctuations in the volume of activity.

Taylor (2001:[s.p.]) concluded that in second generation distance education delivery, the distribution of packages of self-instructional materials (printed study guides, audiotapes, videotapes, etc) is a variable cost, which varied in direct proportion to the number of students enrolled. In contrast, the fifth generation distance education had the potential to decrease significantly the cost associated with providing access to institutional processes and online tuition.

Through the development and implementation of automated courseware production systems, automated pedagogical advice systems, and automated business systems, the fifth generation of distance education has the potential to deliver a quantum leap in economies of scale and associated cost-effectiveness. Further, effective implementation of fifth generation distance education technology is likely not only to transform distance education, but also to transform the experiences of students across the education spectrum (Taylor, 2001:[s.p.]).

In effect, fifth generation distance education is not only less expensive, it also provides students with better quality tuition and more effective pedagogical and administrative support services. The fifth generation is likely to be irresistible to students, education administrators,

policy makers (politicians), and the business community alike – it is also inexorable (Taylor, 2000:[s.p.], 2001:[s.p.]).

2.8 PROBLEMS EXPERIENCED WITH DISTANCE LEARNING IN THE DOD

The common problems associated with many students dropping out of distance learning programmes negatively affect distance learning units in the Department of Defence. These problems in the Department of Defence and their negative effects were also identified by such authors such as Tinto (1993) as cited by Barefoot (2004), Fraser and Nieman (1995), Tait (2004), Woodley (2004), Ashby (2004), Simpson (2004), Yorke (2004), and McGivney (2004), in the following four categories:

2.8.1 Students do not complete their programmes

Many of the Department of Defence students who undertook distance learning opportunities failed to complete their studies. The DOD ETD Project Team (1997a) learned that most of these students were usually not ready to pursue their studies in a distance learning mode of delivery. These students did not submit their assignments and were not committed to writing their final examinations. They often lacked self-esteem, confidence and commitment within the context of group interaction and cooperation.

Tinto (1993) as cited by Barefoot (2004:12) had identified lack of commitment of students to a particular institution and to a personal educational goal. A research project to determine the cause of non-completion of COLET's learning programmes was conducted by Moatlhodi in 2003 (Appendix B). This research was done as a result of some the College of Educational Technology (COLET) students giving preference more to tertiary studies to SANDF programmes. The results revealed that this was due to inadequate provision of facilities and resources from these institutions (Appendix B). The goal commitment, according to Moatlhodi (2003:[s.p.]), was more likely to be associated with lack of academic ability (Tinto, 1975) as cited by Fraser and Nieman (1995:21). Academic ability and preparedness were other student characteristics that influenced students to continue with their studies (Woodley, 2004:51).

2.8.2 Lack of teacher or instructor qualifications

The DOD ETD Project Team reported that, "a shortage of qualified instructors at most training institutions was a general trend" (DOD ETD Project Team Report, 1997a:10). This situation effected negatively on the students as it contributed to their de-motivation. According to the DOD ETD Project Team, very few institutions had more than two members

qualified at the "Optech 2"[7] level (*ibid*). Thus, these institutions were forced to use "unqualified" instructors and could not release these instructors to obtain the necessary ETD qualifications. Willis (1993:36) maintained that the success of any distance education effort rests squarely on the shoulders of the qualified instructors. This implies the appropriate and adequate understanding and balancing of the intricacies of distance learning by the instructors. According to Tait (2004:103), the instructor must address issues of distance learning by creating a welcoming environment and trying to find out about the students' motivation and level of prior learning as much as possible during the initial contact. The instructor or instructor qualification should also include such skills training and/orientation. Diversity in types of instructors should be used as a teaching and learning instrument to bring about the needed practice (Kelchtermans, 2010:526).

2.8.3   Poorly prepared materials

Largely, Department of Defence courses lacked quality and credibility (DOD ETD Project Team report, 1997a). The view of the Diplomacy, Intelligence, Defence and Trade and Industry Education Training Authority (DIDTETA[8]), reported in the Pretoria News by Hosken (2004:5), that, "internal training offered by the SANDF was not worth anything." Literally, this meant that none of the courses offered by the SANDF were recognised either nationally or internationally. The DOD ETD Project Team (1997a) learnt that very few SANDF courses and qualifications enjoyed accreditation in the private sector. By November 2004, only one Department of Defence ETD institution was fully accredited, 11 were provisionally accredited, the applications of 13 institutions were pending and approximately 25 had not applied. The programmes and materials designed and developed in the Department of Defence were qualification-based instead of being competency and outcome-based. Courses are used as a means of evaluating personnel for promotional purposes.

This practice did not inculcate the right attitude to learning. Asmal (2004) cited by Moll, Welch and Naidoo, (2004:[s.p.]) summed up the above as the, "perils of distance education". that resulted in little regard for the quality of learning and outputs, poor quality of the materials bear no relevance to skills and human resource development and inappropriate approaches to curriculum design, development and delivery. Kember (1989:199-209) cited by Fraser and Nieman (1995:22) listed academic environment and integration as one of several variables influencing the drop-out process in distance learning. He says that the

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[7] "Optech 2" level was the programme to prepare instructors at COLET; it has now been replaced by Occupational Directed ETDP Qualifications.

[8] DIDTETA is one of the 25 sector education training authorities (SETA) responsible for the DOD.

academic environment embraced aspects such as study materials and academic assistance. Meanwhile, the National Association of Distance Education Organisations of South Africa (NADEOSA, 1996) had recognised as quality criteria programmes development that are flexible and designed with national needs as well as the needs of students (p.16), the course curriculum with aims and learning outcomes appropriate to the level of study (p.19) and course materials that supported the aims and learning outcomes (p.20).

2.8.4 Lack of student support

It has been constantly argued that student support remains the backbone of student success in distance learning. The lack of student support in the DOD ETD System manifested itself in a number of ways. The student's direct supervisor at his or her own unit and the facilitator at the training unit normally did not take co-responsibility in assisting the student to develop to his or her full potential. On the one hand, the student is expected to do the full complement of unit work during the day and his/her own studies after hours (Van der Walt, 2004:16). Often study hours and related resources were often not provided. On the other hand, facilitators were under-prepared for their roles (Malan, 2004:5) such as mentoring, coaching, tutoring and creating an environment to enhance learning. The DOD ETD Project Team noted with concern the weaknesses in the DOD ETD environment, the lack of training for trainers, no focus on Research and Development and lack of co-ordination between ETD institutions (DOD ETD Project Team Report, 1997a:17). McGivney (2004:41-42) has realised that the lack of support in the form of teaching staff not getting to know their students and showing little interest in their work contributes to non-completion of a programme or module.

Yorke (2004:26) noted that a sense of belonging had negative implications for a distant student's persistence, especially when the student was remote from the provider. Students wanted to feel that they were members of an academic community. Kember *et al.* (2001) cited by Yorke (2004:26), said that sense of belonging can be developed in distant learning institutions in which attendance and some contact sessions was the norm (Yorke, 2004:26). According to Barefoot (2003) cited by Yorke (2004:26-27), mutual support was relatively easy to achieve in this respect. Simpson (2004:80) maintained that contact with students in any student support system was very important.

2.9 POSSIBLE APPROACHES TOWARDS SOLVING THE DISTANCE LEARNING PROBLEMS IN THE DOD

The above-mentioned problems could be addressed from the following viewpoints:

2.9.1 Adopt student-centred or self-directed approach

In order to overcome resistance to learning, adults had to be motivated to want to learn and to get them in various settings to learn to become active inquirers (Knowles, 1970:42). How do we get our DOD students in distance learning to be self-directed students? We certainly do not have to throw our students into the unfamiliar waters of self-directed learning and hope that they can swim. This could be a new experience for many students, and they need some preparation for it. In their Personal Responsibility Orientation Model, Brockett and Hiemstra (1991), cited in Merriam and Caffarella (1999:298) defined self-directed learning as comprising two dimensions, namely, instructional processes (self-directed learning) and personality characteristics of the individual student (student self-direction). In the first dimension, instructional processes, students assumed primary responsibility for planning, implementing, and evaluating their learning experiences.

In the second dimension, personality characteristics of individual students, centred on a student's desire or preference for assuming responsibility for learning. The notion of personal responsibility, which they defined as "individuals assuming ownership for their own thoughts and actions," is the point of departure for understanding concepts of self-directedness and student-centeredness.

2.9.2   Develop student support service system

Student support remains the backbone of distance learning delivery. It is reflected in the wide range of support strategies employed by providers to assist distance students in completing their studies. Despite general recognition of the importance of student support, there is no widely accepted definition of the concept of student support. There is a tendency to use the term broadly, so that it meant different things and applicable to different people depending on their circumstances. Student support would often be defined in relation to specific contexts and experiences.

According to UNISA's (SAIDE, 1999:14) draft report on integrated student support:

> "Student support encompassed the entire range of methods and strategies employed in the presentation and delivery of courses aimed at assisting and enabling students to comprehend fully, assimilate and master the skills and knowledge needed to achieve success in their studies".

Akinade (1998:2) puts forward a similar understanding of student support, which he defined as, "…systems or procedures that are purposefully created and effectively utilised by a distance learning institution to support and or facilitate teaching and learning".

2.9.3   Thorough instructional system design

The systematic designing of an instructional system is fundamental of any successful learning programme. Instructional design impacts on appropriate preparation of study and learning materials. One of the outcomes of ETD is competence in the workplace. In military terms, that means competence in the operation and management of the combat and support systems of the Department of Defence. According to the ETD Project Team, to attain this goal, learning activities should be directed at integrating theory, practice and the work situation (DOD ETD Project Team Report, 1997b).

The DOD ETD Project Team adopted the ETD process containing the four main sub-processes (Figure 2.3) that facilitated the conversion of student needs to the outcome of competence in the workplace. The first sub-process of determination of the ETD needs is student driven and competency focussed. The development of ETD opportunities as the second sub-process is done through the scientific educational application of problem-solving process, and formed the core activity of the sub-process. The third sub-process is the actual presentation of the learning opportunity and comprises innovative elements based on the correct diagnosis, the learning plan, the facilitation plan, and the evaluation plan. The final sub-process is the evaluation of the ETD system, where the emphasis is on the ability of measuring the transfer of learning in the workplace.

2.9.3.1   The ETD Process as DOD instructional system design
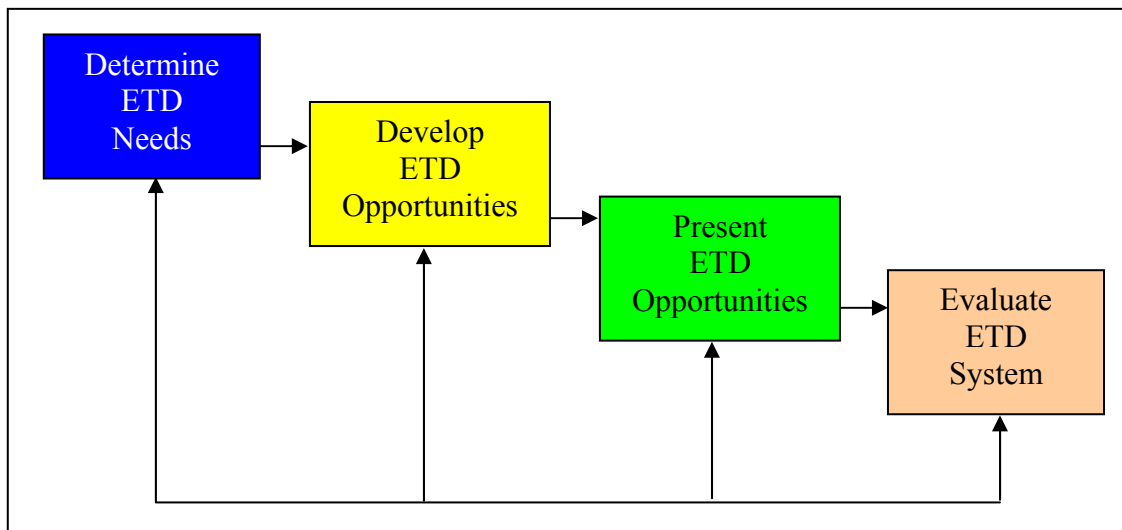
Figure 2.3: The DOD ETD process (as institutionalised by the DOD ETD Project Team, 1997)

Therefore, the organisation of distance learning must also involve planning and organising the curriculum and its course contents which includes such aspects as the analysis of target audiences, their needs analysis, experiences, educational and cultural constructs, appropriate learning material preparation and development, outcomes formulation, assessment criteria, evaluation methods, methods and media selection (use of technology) and support structures.

2.9.4   Formulation of a distance learning policy

Hũlsmann (2000), cited by Welch *et al.* (2004:13), identified a clear policy as one of the three conditions for efficient and effective provision of distance education. An appropriate institutional culture and the consideration of costs could be regarded as being the other conditions for efficient and effective provision of distance learning. In its document "Criteria for Quality Distance Education in South Africa – 2003," the National Association of Distance Education Organisation of South Africa (NADEOSA, 2003) identified Policy and Planning as one of the quality criteria and critical success factors for distance education provision in South Africa.

Seyoum (2003:9) reported that:

> "Despite the absence of clearly defined policy … a glimmer of hope could be visualized if things were turned around in the secondary level and the Instructors' Training distance education programmes in Ethiopia".

He suggested that the formulation and implementation of a clearly articulated distance learning policy was one of the steps to be addressed by Ethiopia's Distance Education Panel. Viljoen (1999:[s.p.]) developed and proposed a distance learning model (Figure 2.4) to be utilised by the SANDF. It is only the Military Academy that had attempted to utilise the model. The fact that the model is not widely utilised, is because no distance learning policy existed in the SANDF and Department of Defence. This model is comprehensive and appropriate for the SANDF and Department of Defence as it covered or accommodated the most important aspects of distance learning. One such factor is that provided in the environment that promoted learning. Policies play a crucial role in student performance. They tend to emphasise the role of the distance learning institution, its ethos and inclination to teaching and learning and support mechanism as significant variables in student performance (Osman & Castle, 2006:515).

According to this model, student support should not only take place in the learning and instructional environments but also from a technical and administrative point of view. This model also embraced the three main variables of instructional dialogue, programme structure and student autonomy as explained by Moore's Transactional Distance theory. It suffices to say that any distance learning policy should be formulated in such a way that it encompasses most if not every aspect concerning distance learning delivery. These include aspects such as accreditation, administration and management, curriculum design, course production, assessment and evaluation, quality assurance, student support and use of technology.
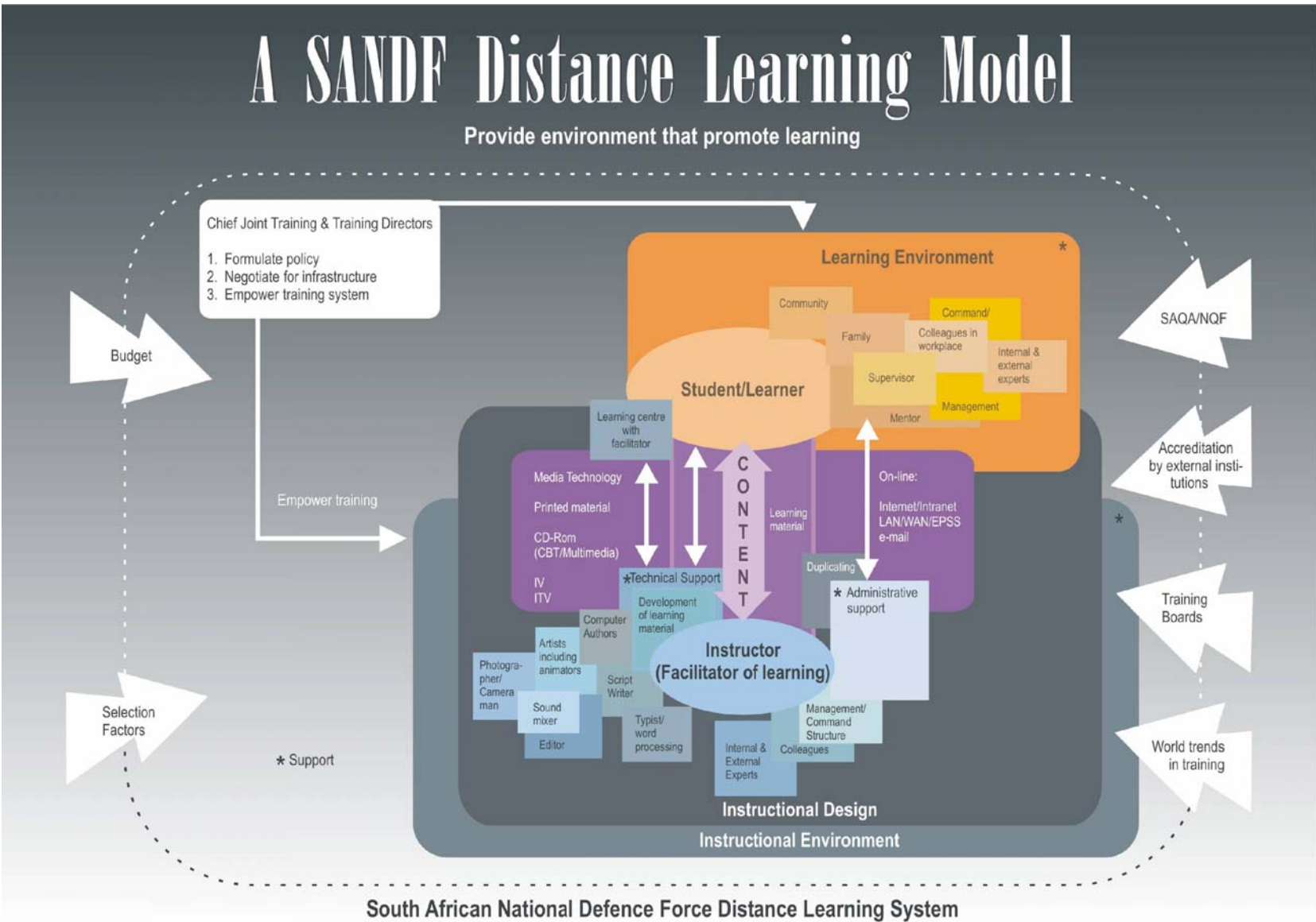
A SANDF Distance Learning Model

Provide environment that promote learning

Chief Joint Training & Training Directors

1. Formulate policy
2. Negotiate for infrastructure
3. Empower training system

Learning Environment *

Community
Command/
Family
Colleagues in workplace
Internal & external experts
Supervisor
Management
Mentor

Student/Learner

Budget

SAQA/NQF

Empower training

Learning centre with facilitator

Accreditation by external insti-tutions

Media Technology

On-line:

C
O
N
T
E
N
T

Printed material

Learning material

Internet/Intranet LAN/WAN/EPSS e-mail

CD-Rom (CBT/Multimedia)

Duplicating

*

IV
ITV

*Technical Support

Development of learning material

* Administrative support

Training Boards

Computer Authors

Artists including animators

Photographer/ Camera man

Instructor (Facilitator of learning)

Script Writer

Sound mixer

Management/ Command Structure

Selection Factors

Typist/ word processing

Editor

Internal & External Experts

Colleagues

World trends in training

* Support

Instructional Design

Instructional Environment

South African National Defence Force Distance Learning System

Figure 2.4:   A SANDF distance learning model as designed by Viljoen (1999)

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2.10 CONCLUSION

This chapter discussed the education and training system in the Department of Defence in general and distance education in particular. It began by discussing the mandate given to the Department of Defence according to the Constitution of the Republic of South Africa. The organizations and structures of South African defence system and their responsibilities to the entire ETD system were discussed whereby the needs for ETD in the Department of Defence were highlighted. The chapter also discussed why the Department of Defence prefers to use the term "distance education" or "distance learning" as opposed to other terms often used to explain this mode of instruction and delivery.

The chapter also discussed the level of technology utilized in distance education compatible with recorded "generations" of distance education. The chapter concluded by highlighting some of the problems encountered in distance learning. The next chapter analyses the theory and approach adopted by the Department of Defence and SANDF in their instructional design and development.