Chapter 1

"Zulke schitterende perspectieven voor modernisering van onderwijs en leren, en zo grote traagheid om er gebruik van te makern. Hoe zouden we dat kunnen doorbreken?"

(Harry Brinkman, 2000)

1. Prelude

This research sets out to explore issues surrounding the following question:

> Which factors need to be considered in order to exploit the opportunities of information technology to optimise support to higher education staff during times of change in order to create a functional learning organisation?

2. Introduction

The saying goes that change is the only constant and Taylor (1999) rightfully accepts change as a ubiquitous phenomenon. Education, like the rest of the world, is in a state of change. This is echoed by the Dearing committee (1997) and the West committee (1998) who regard change in higher education as inevitable. They also concluded that the pace of change is accelerating.

Even transformation and equity, which are often cited as motivators for change, are not unique to South Africa. Other countries also have different nationalities to incorporate in their education systems e.g. Hispanics, African-Americans and East block nationalities.

Change may not impact equally across educational institutions, but factors influencing the institution, the lecturers or the learners themselves, in whatever way, should at least be considered as potentially important. Bryant (1999) advocates a "focus on stakeholders" as well as "a shift towards a shared vision". While this study will focus on higher education, education cannot be isolated from the influence of change in wider contexts. Globalisation, overpopulation, the AIDS threat, technological growth, ever widening gaps between rich and poor, governmental re-engineering and legislation are but some of the factors which will need to be investigated. This study will also explore attitudinal interventions and motivators to employees.

The accusation is often levelled that education is not keeping up with change and that students are inadequately prepared for the world of work upon completion of higher education (Roberts, 1995). While this may not be true in all cases and since lecturers face demanding challenges (Felder, 1994) it is unfortunately not entirely false either.

> *"In the current volatile context of higher education, academics are grappling with complex issues in a way that has never previously been required of them* (Adams, Marshall and Cameron, 1999)".

Those academics who do want to face up to the challenges of the times are not without problems either. They often find their efforts hampered by bureaucratic hurdles and stumbling blocks. Internal politics caused by threatened colleagues and line managers often create a myriad of technicalities and de-motivators (Naidu and Steyn, 1999). Staff members may find themselves unequipped to deal with all of these issues and eventually succumb to mediocrity.

Stagnation is not an option available to South African academics. Multiple legislation dictates changes directly impacting on higher education and Table 1.1 lists some of them:

Year	Legislation
1995	South African Qualifications Authority Act [No. 58]
1996	Intellectual Property Laws Rationalisation Act [No. 107]
	Constitution of the Republic of South Africa [No. 108]
1997	Education Laws Amendment Act [No. 100]
	Higher Education Act [No. 101]
1998	Employment Equity Act [No. 55]
	Skills Development Act [No. 97]
1999	Skills Development Levies Act [No 9]
	Higher Education Amendment Act [No. 55]
	National Student Financial Aid Scheme Act [No. 56]
2000	Promotion of Equality and Prevention of Unfair Discrimination Act [No. 4]
	Higher Education Amendment Act [No. 54]

Table 1.1: South African legislation important to Higher Education

The main educational shift in South Africa is currently towards learner-centred outcomes-based education. A change on such a scale calls for drastic recurriculation and didactic reform. The majority of academics are ill prepared and unequiped to face such changes (Naidu and Steyn, 1999). Webb (1996) even calls staff support and development an "institutional necessity".

Structures providing adequate awareness with sufficient interventions are simply not in place, admittedly often as a result of ignorance. A recent study done at the Technikon Witwatersrand, found that only 5% of the respondents felt that they needed no additional support (Naidu and Steyn, 1999).

At the same time we have to cope with the emergence of a technologically linked society. There is an increase in the number of users with access to e-mail and internet facilities. A global network of cognitive support is already in place between academics. One example of such a network is ITForum which can be visited at http://itech1.coe.uga.edu/itforum/home.html.

In many instances globally there is a move towards better utilisation of benefits of information technology. These benefits need to be explored and contextualised. Technology changes the way we do things. As Argeron puts it:

> *"Change and Information Technology is part of the content and not just part of the context."* (Argeron, 2000)

Merely to be able to use new technologies is not enough either. Information technologies need to be used in the appropriate way to allow for the availability of both technology and competencies (Norman, 1993). What works elsewhere may not work within a South African context.

This study will explore local situations and investigate successes elsewhere. It will recommend a frame of reference from which to approach the use of technology in supporting and developing staff in Higher Education. This study will also investigate ways in which creative staff support and development can deal creatively with possible constraints and exploit advantages of information technology within this context.

This study will not only highlight developmental needs, but also highlight methods used and successes reported by other institutions. It will focus on the benefits that information technology can offer to the development of a strategy where South African higher education institutions could optimise staff development in order to successfully support staff in the globally changing educational sector.

For the purpose of this study, making optimal, yet responsible use of electronic means to augment staff support and development is called **eVelopment**.

The research undertaken is conceptually represented in Figure 1. There are three tensions namely:

- ✓ the provision of services to busy academics within a changing environment,
- ✓ changes in the educational sector and
- ✓ the user uncertainty regarding the correct utilisation of Information Technologies

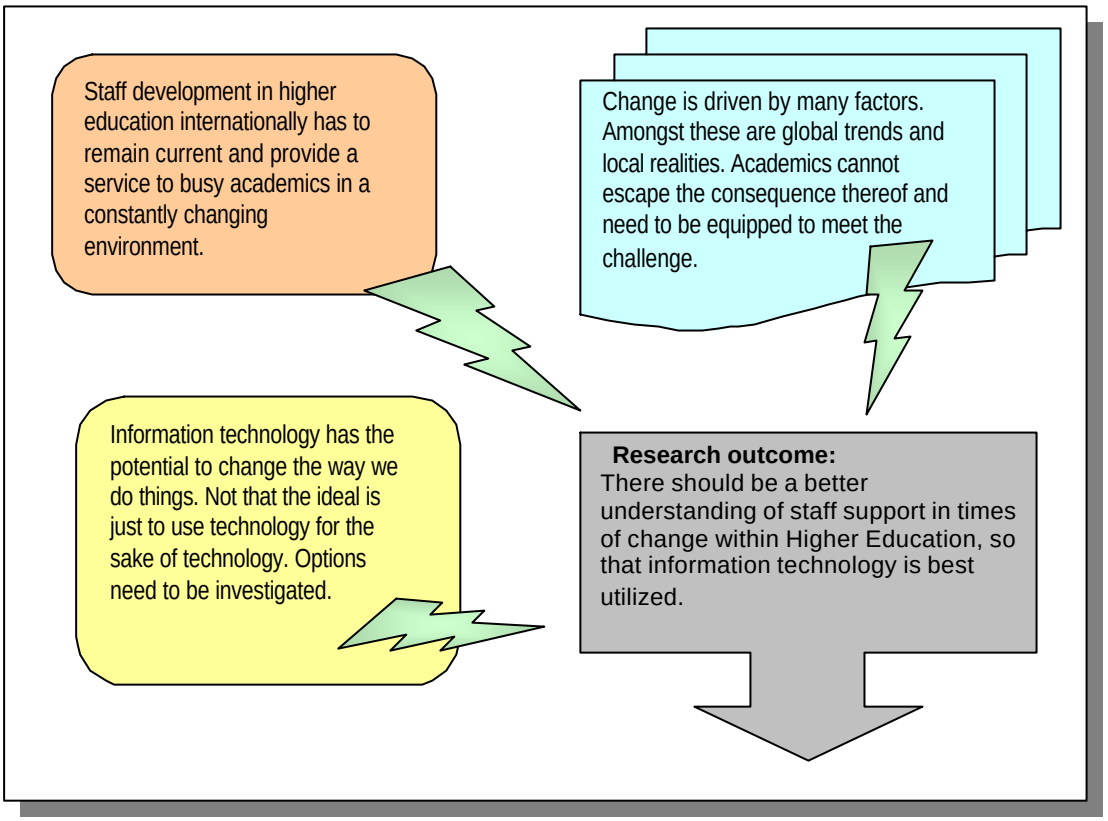

Figure 1: Graphic representation of the research focus

As shown in Figure 1 above, this research will define the shared context for information technology, change and best staff development practice. It is necessary to investigate and analyse current staff development practice in order to identify components to accommodate and incorporate in a local eVelopment approach.

3. Research question

The major research question addressed by this research is:

> Which factors need to be considered in order to exploit the opportunities of information technology to optimise support to higher education staff during times of change in order to create a functional learning organisation?

Exploring this issue within the context of higher education, the following issues and sub-questions arise:

3.1 Change

3.1.1 What is change?

3.1.2 How do people react to change?

3.1.3 What is the extent of change required from South Africans?

3.1.4 What are the effects of change on staff members in higher education?

3.2 Staff support/development

3.2.1 What are the characteristics of successful staff development elsewhere?

3.2.2 What is the extent to which staff members need support?

3.2.3 What are the dynamics between change and staff support?

3.3 Information technology

3.3.1 What are the possibilities and constraints of information technology as a vehicle for development and support?

3.3.2 Which changes need to be made to staff support and development practice to exploit the possibilities of information technology?

4. Literature review

The literature reviewed for this study covers the following aspects:

4.1 Change

- ✓ Phenomena resulting in change in higher education. This will include global trends impacting on institutions, faculty members and students.

- ✓ Factors requiring change in South African higher education e.g. international competitors, African renaissance, legislation, learner profiles and lecturer qualification and competence.
- ✓ Human reaction to change.
- ✓ Methods of dealing with change.

4.2 Academic staff development

- ✓ Methodologies and approaches to academic staff development worldwide.
- ✓ Vital elements in academic staff development.
- ✓ Change theory as an impacting factor on staff support.

4.3 Information technology

- ✓ Information technology as alternative/supplementary communication resource.
- ✓ Possibilities and constraints of information technology within the context of change provision and staff development.
- ✓ Factors impacting on technological adaption.

5. Value of the research

This research will provide information pertaining to:

- ✓ factors to be considered when dealing with eVelopment;
- ✓ issues surrounding higher education and the resulting impact of those changes on the lives of faculty members; and
- ✓ current ways of supporting and developing academic staff;

which should culminate in a better understanding, tempered by local realities, of the means of exploiting the benefits of information technology towards optimally

supporting and developing staff members to meet the challenges of a changing higher education arena.

6. Research plan

6.1 Type of research

This research will consist of a qualitative study;

- ✓ supplemented by literature studies;
- ✓ guided by surveys to identify field leaders;
- ✓ augmented by quantitative perspectives where possible; and
- ✓ informed through case studies;

in order to identify commonalities in centres of excellence.

6.2 Subjects of this study

A number of institutions of higher education (world wide) with relevant experiences were identified and thereafter staff members involved in staff development at these institutions were contacted and surveyed using questionnaires (598 pages – see introduction Chapter 4) that were subsequently analysed.

6.3 Data collection methods

A combination of methods was used to collect relevant data. The instruments used to collect the data are discussed in 6.3.1 and the cross reference between the specific data gathering instruments and the related foci within the research is explained in Table1.2.

6.3.1 Description of instruments

- ✓ Literature review: This covered relevant legislation, journal articles, books and electronic documents available.
- ✓ Internet mailing lists: A number of mailing lists were identified and consulted in order to obtain nominations for institutions or other individuals with relevant experience.
- ✓ E-mail postings: Identified individuals were contacted electronically. Correspondence with respondents were mostly also via e-mail.
- ✓ Web pages: Pages were consulted to obtain details on the activities of interested parties.
- ✓ Questionnaires: Structured, open-ended questions were used.

Method/Question	Literature review	Mailing lists	Direct e-mails	Web pages	Questionnaires
What is change?	✓				
How is change dealt with elsewhere?	✓	✓		✓	✓
What is the extent of change required from South African educators?	✓		✓		✓
What are the effects of change on staff members in higher education?	✓		✓		✓
What are the characteristics of successful staff development?	✓			✓	
What is the extent to which staff members need support?	✓	✓	✓	✓	✓
What are the dynamics between change and staff support?	✓		✓		✓
What are the possibilities and constraints of information technology as a vehicle for staff development and support?	✓			✓	✓
Which changes need to be made to staff support and development practice to exploit the possibilities of information technology?	✓	✓	✓	✓	✓

Table 1.2: Matrix to indicate data collection relevance

7. Output

7.1 Description of the product

The explicit outcome in this thesis specifies contributing factors as well as the possibilities and constraints of alternative methodologies. It also suggests tacit knowledge beyond the proven facts. Some of these issues and surrounding complexities and are captured in Chapter 6 as suggestions for further research.

Another outcome of this research is improved insight and further questions in the mind of the researcher. These can but be acknowledged. Table 1.3 gives an overview of the thesis.

Chapter 1	Background	The framework within which the problem is situated outlines the main points and provides a general overview of the study.
Chapter 2	Description of methodology	The reliability of the outcome of the study will depend on the reliability of the methods used to reach those conclusions. This describes and motivates the methodology. It also includes a description of the tools used in data collection.
Chapter 3	Literature review	An exploration of the relevant factors namely change, staff support and development and benefits from information technology. It provides information on how these factors impact on higher education and how to deal with them.
Chapter 4	Feedback received from questionnaires and results.	Information stemming from feedback gathered. This chapter also identifies commonalities and possible trends.
Chapter 5	Discussion	Supposition formed, combining literature (Chapter 3) and practice as represented by the feedback received (Chapter 4). This is supplemented by focused discussion of factors impacting on the eVelopment arena. This Chapter: ✓ highlights primary factors; ✓ identifies methods by which behaviour can be understood; and ✓ refers to key concepts.
Chapter 6	Conclusions and recommendations	An overview of the research and drawn conclusions. Recommendations with guidelines for implementation. Limitations of the study as well as areas for possible further research are listed.

Table 1.3: Thesis overview

8. Conclusion

Research undertaken in this project shows that staff support and development need to adjust responsibly to changes in the educational environment. Change management strategies should allow for differences in personality types and their reactions to change. The variety of new possibilities and technological options available to staff developers requires more than technical competence. This research acknowledges that a combinational approach is called for and proposes a framework within which the role of receptivity, lucidity, dependency and intricacy could be interrelated to inform on issues that will impact on acceptance of new strategies. Technological options can find their rightful niche within the realities of providing educational guidance to academia.

Chapter 2

1. Introduction

Chapter One provides an overview of the research and gives a broad indication of the approach followed in securing information relevant to the study. Chapter Two provides the detail on the design of the research. The various sources are stipulated and defended in terms of their relevance to the project.

This chapter is divided into the subsections mentioned below. Apart from the paragraphs that introduce and conclude, each of these sections represents and elaborates on a specific data collection source, namely;

- ✓ Research approach
- ✓ Utilisation of formal literature
- ✓ Expert and peer group contributions
- ✓ E-mail
- ✓ Web pages
- ✓ Questionnaires
- ✓ Integration

As a summary of this research design, Table 2.3 near the end of this chapter, indicates which questions rely on which data sources for information exploration.

2. Research approach

This primarily qualitative study explores the experiences of field experts in order to harvest some of the tacit knowledge imbedded in their everyday professional practice, so that some of it can be converted into explicit constructs. Much of it contrasts with the Western approach that has ingrained traditions to view "*only formal and systematic – hard (read quantifiable) data and set procedures*" as useful knowledge (Nonaka, 1991). Nonaka proceeds to contrast the approach to that of successful Japanese learning organisations by stating: "*Rather, it depends on tapping the tacit and often highly subjective insights, intuitions, and hunches of individuals … and making those insights available*" (Nonaka, 1991).

2.1 Limitation

An obvious limitation of Nonaka's (1991) approach is that it would be hard to replicate such a study. Firstly it would be difficult to trace the same respondents and secondly, given that time will have elapsed, those very respondents may well have changed their minds on certain aspects or gained new insights.

It is the purpose of this thesis, therefore, to present a detailed **snapshot** of the situation as it emerged at the time when the research was concluded. No claim is made that any of the conclusions will hold true indefinitely.

2.2 Research classification

Mouton (1983) advises that a selection be made between qualitative and quantitative methodology based on an analysis of the research topic. Mouton and Marais (1990) supply a useful table comparing qualitative and quantitative research approaches. Their comparison is based on three factors namely the concepts, hypotheses and exploration.

The next three tables measure this research approach in terms of these aspects. In each of these three tables, the first two columns indicate the Mouton and Marais (1990) distinction and the third column indicates the scenario for this study.

The table below shows the first factor namely the way concepts are dealt with.

Concepts		
Qualitative	**Quantitative**	**This study**
Excess meaning – can be interpreted in a number of ways	Singular, unique meaning	Explore, reveal, analyse and discuss Qualitative
Sensitised concepts and meaningful descriptions	Define identified terms	Different interpretations encountered in field Qualitative
Intuitive experience leads to descriptions	Result of specific measured quantities	Culmination from encountered phenomena Qualitative
Fair amount of connotative meaning	Strive towards complete denotative meanings	Fair amount of connotative meaning Qualitative

Table 2.1: Concepts: An enriched application from Mouton and Marais (1990)

In terms of all four aspects in Table 2.1, the approach of this study correlates strongly with that of the qualitative approach.

The next comparison, in Table 2.2, compares the way the various approaches deal with hypothesis statements. Here again the approach of this study compares favourably with the qualitative approach.

Hypothesis		
Qualitative	**Quantitative**	**This study**
Often not mentioned or stated in a general research aim	Explicitly stated- at least in terms of research question	Exploration of complexities Qualitative
Emerging from the progress of the investigation	Should be formulated prior to testing	Better understanding emerging from the process Qualitative
Often can't be dismissed	Not disputable	Ascertained probability Qualitative

Table 2.2: Hypothesis: An enriched application from Mouton and Marais (1990)

The last table in this series, Table 2.3, deals with the exploration of information.

Exploration		
Qualitative	**Quantitative**	**This study**
Subjective	Objective	Objective analysis of subjective opinions Qualitative
Researcher involved	Researcher remains detached	Researcher's interpretation Qualitative
Spontaneous examples	Pre-planned observations	Samples of convenience Qualitative
Open	Often pre-categorised	Open Qualitative
Unexpected result can be registered	Controlled content	Inclusive Qualitative
Happens in non-structured way	Results scaleable	Open structure Qualitative

Table 2.3: Exploration: An enriched application from Mouton and Marais (1990)

From Tables 2.1 through 2.3 above, it becomes clear that in order to understand better the complexities surrounding the transformation of a Higher Education institution into a learning organisation, this research uses:

- ✓ a qualitative approach;
- ✓ supplemented by literature; and
- ✓ feedback received from identified field experts
- ✓ to explore commonalities and suggestions from specifically identified centres of excellence.

2.3 Validation

This research is concerned with securing valid and reliable information in an ethical manner. The contrast in terms of expectation from different approaches are underlined by Firestone's distinction:

> *"…the quantitative study portrays a world of variables and static states… By contrast the qualitative study describes people acting in events*" (Firestone, 1987).

Validity in this context is not sought through exact experimentation, repeated objective measurement or universal truth statements, but rather derived from a perspective of "*understanding as the primary rationale*" (Merriam, 1992). Two angles namely internal and external validity will be considered.

2.3.1 Internal validation

Internal validation deals with the question of how research findings match reality. (Merriam, 1992). Becker (1993) suggests that "*reality is what we choose not to question at the moment.*" While possibly facetious, it does hint towards the unlikelihood of absolute consensus amongst multiple practitioners. This potential hurdle to internal validation can be overcome by utilising these same multiple perspectives and to attempt understanding through more open-ended approaches

rather than to interject overly-structured data collection instruments (Lincoln and Guba, 1985).

In view of the above, a well thought out, substantiated comment by a single respondent could carry as much weight as the average of comments by the group. It is not only the number of instances that matter, but also the quality and associated importance of comments given by individual respondents. Hence the particular design of the questionnaire as discussed in section seven and the original selection of 367 practitioners as described in section five of this chapter.

2.3.2 External Validation

External validity is concerned with the extent to which the findings of one study can be applied to other situations (Merriam, 1992).

> *Qualitative research, however, is not conducted so that laws of human behaviour can be isolated. Rather, researchers seek to describe and explain the world as those in the world experience it."*
> (Bednarz, 1985)

Since human behaviour is hardly ever static, Donmoyer in Merriam (1992) suggests the use of a non-random sample precisely because the researcher wishes primarily to understand and not to generalize.

Another strategy is to use many cases to study the same phenomenon (Schofield, 1990; Yin 1994).

For these reasons the respondents as described later were not randomly selected, but were carefully selected from 254 institutions of higher education (world-wide) which were identified as having relevant experiences. Individuals thus identified as well as prominent individuals selected from electronic communities of practice made up the 367 Individuals involved in staff development and change, identified and contacted as the original sample.

2.4 Triangulation

While mentioned as a separate heading here, many researchers view triangulation as but an element of ensuring internal validation (Denzin, 1970; Mathison,1988 and

Merriam, 1992). Mathison (1988) also states: "*triangulation may produce data that are contradicting or inconsistent*."

> *"Shift the notion of triangulation away from a technological solution for ensuring validity and rely instead on a holistic understanding of the situation to construct plausible explanations about phenomena being studied*." (Mathison, 1988)

Any possible perceived lack of traditional triangulation in this research should thus offset not only against the multiple other sources of information utilised to ensure validity, but also against the existence of different preferences in terms of research approach.

> *"[Researchers] …conducting qualitative investigations do not want to wait for the research community to develop a consensus as to the appropriate criteria for assessing the validity and reliability, if indeed that is possible."* (Stake 1994)

A practical suggestion taken up in this research comes from Connelly and Clandinin (1990):

> *"Each inquirer must search for, and defend, the criteria that best apply to his or her work."*

In view of this, the multiple sources of information (returned questionnaires, e-mail correspondence, web pages and more traditional forms of written documentation as well as peer opinion) were combined and interrelated. These provide a rich representation of existing practice and eludes to the tacit knowledge of practitioners with a wide spectrum from multiple continents, countries and institutions rather than a narrow focus of the stated, confirmed and reaffirmed view of a possible non representative minority.

3. Utilisation of formal literature

3.1 Keyword search

A search of existing literature shows that although the variables in this study are regularly included in works of various nature, the exact combination of staff development, change and technology was not found.

The academic information centre (library) provides services and resources to search for applicable literature. Sabinet and the Nexus database system are examples of these resources. Table 2.4 shows the keyword combinations and the number of works identified by that particular search.

Keywords	Number identified
Staff Development, Change, Higher Education and Technology	0
Staff Development, Change and Higher Education	2
Staff Development, Change and Technology	5
Staff Development and Change	76

Table 2.4: Literature search results

From the table it can be see that although staff development and change is well covered, no works cover the exact field of this research.

3.2 Related studies

The fact that research specifically focused on the area is not readily available, does not preclude the use of literature. A large number of very useful works are available. The following table gives an indication of some related theses. The shaded columns explore the specific relevance in terms of correlation with the focus of this study. The column on the far right represents the quantified relevance in terms of the five areas of comparison, i.e. a correlation with two of the five criteria would yield a 40% correlation etc.

Author	Research Title	Year	Masters or Doctoral level	Higher education	Change	Support	Technology	Correlation
Bean, H.J.	Affirmative action at local government level	'95	M		✓			20%
Bedassi, I.	Motivation as a staff development instrument in Indian secondary schools	'91	M			✓		20%
Boughey, J.D.	In search of a staff development methodology within the context of tertiary education, with special reference to the University of the Western Cape	'95	D	✓		✓		60%
Buitendag, H.P.	The value of staff development in schools, with reference to its potential impact on school improvement	'98	M			✓		20%
Busakwe, T.L..	A needs assessment for staff development in colleges of education, with specific reference to some colleges in the Central and Northern regions of the Eastern Cape Province	'99	M	✓		✓		40%
Campher, E.	Establishing Teacher Support Teams (TST) to facilitate inclusive education for Learners with Special Educational Needs (LSEN)	'97	M			✓		20%
Dannenfeldt, G.	A staff development mode for nurses working in intensive care units in private hospitals	'88	D			✓		40%
Drewett, M.D.	The integration of academic skills/support programmes into university department structures: a case study in the sociology of education	'93	M	✓		✓		40%
Du Toit, H.D.	The changing of teachers' disposition as management task of the school principal	'93	D		✓	✓		60%
Eloff, A.D.	Establishment of relations: a management strategy for personnel development	'92	M			✓		20%
Els, G.	Personnel development at technical colleges: an educational management perspective	'98	D	✓		✓		60%
Govender, D.A.	Effectiveness of staff development programmes in Indian secondary schools	'91	M			✓		20%
Greyling, J.	The design of a didactic model for a teaching development programme for distance education at tertiary level	'81	M	✓		✓		40%
Heyns, R.C.G.	The professional development and in-service training of the field school teacher	'88	M			✓		20%
Hutchison, A.	The development and evaluation of an empathy training programme for academic staff	'88	M	✓		✓		40%
Kerkham, A.S.	The effectiveness of the Cape technikon in meeting the information needs of the technikon lecturers	'86	M	✓			✓	40%
Majiedt, P.W.	The professional development of the teacher in Namibia as management task of the subject advisor	'92	M			✓		20%

Author	Research Title	Year	Masters or Doctoral level	Higher education	Change	Support	Technology	Correlation
Majola, M.C.	An investigation of the impact of transformation on academic staff development at the University of Natal	'99	M	✓	✓	✓		60%
Mataboge, T.J.M.	Personnel development in schools with particular reference to the Krugersdorp area	'93	M			✓		20%
Mathole, M.A.	Staff development as a mechanism for effective school management	'97	M			✓		20%
Munro, D.G.	The potentiality of systematic staff appraisal for the professional development of teachers: a study with particular reference to the Kwazulu-Natal Province	'96	M			✓		20z
Naidoo, K.	A programme for staff and curriculum development for quality assurance: a case study at the M.L Sultan Technikon	'97	D	✓		✓		60%
Naidoo, K.	Self-evaluation programmes in academic staff development	'92	M	✓		✓		40%
Nkosi, J.	Staff development for multicultural education	'96	M		✓	✓		40%
Opperman, F.J.	The development of staff representation of the non-European employees of the South African Railways and Harbours Administration	'63	M			✓		20%
Pittendrigh, A.	The technikons in the RSA - an evaluative analysis of the factors influencing the development of the technikons (1967 - 1985) and an assessment of their role in educational change at tertiary level in the RSA	'87	D	✓	✓			60%
Prior, F.C.	Technikon academic staff development with special reference to newly appointed lecturing staff	'87	M	✓		✓		40%
Sebolai, M.E.	Staff development and training of teachers by means of distance education	'96	M			✓	✓	40%
Sibanda, G.	A case study investigation of attitudes of senior staff and students to the use of video in science teaching in KwaZulu-Natal high schools that received videos from CASME to use as aids in lessons	'97	M			✓	✓	40%
Sibiya, M.L.	Clinical supervision as a strategy in staff development	'99	M	✓		✓		40%
Spies, C.J.	The role of internal and external factors influencing the management task of the headmaster	'95	M			✓		20%
Stanton, R.	Non-formal training of technical staff: a psychology of education perspective	'92	M	✓		✓		40%
Wedekind, V.R.	Teacher development and change: an analysis of a school-based action research staff development programme	'96	M		✓	✓		40%
		Total		14	6	30	3	

Table 2.5: Related studies

This research is relevant as it links up with the thirty titles on support and development and another fourteen on higher education, yet it adds to the understanding of the under-represented topics with six works on change and only

three on technology in this context. It is unique in that none of the mentioned works cover the exact combination of factors. In Chapter 3 relevant findings from the available literature are explored in more detail.

4. Expert and peer group contributions

Since 1991, the Association of Research Libraries (ARL) has reflected the growth of electronic publications (Mogge, 1999). Snapshots of the state of electronic publishing are included in each edition of the ARL directory of Electronic Journals, Newsletters and Academic discussion lists.

The exact detail of their findings and the scope of their contributions are not important here, but what is relevant is their conclusion that important changes are happening on the electronic landscape. Exponential growth is maintained in the number of electronic journals and academic discussion lists.

A number of very relevant and useful contributions are listed where the specific topics are discussed.

Where discussion group contributors have made comments indicating their involvement in the field of academic staff development, their contact details are recorded and they are included in the list of people who were approached to complete the questionnaire.

5. E-mail

As probably one of the most convenient tools available today, e-mail has not only revolutionised personal communications, but it has made direct peer communication possible at very low cost.

367 Individuals were identified. Each received an individualised e-mail informing them of the fact that they had been identified or recommended as knowledgeable people in the field and were hence being approached to complete the questionnaire. While this original sample was even more representative, the demographic

distribution of those who did reply are worth mentioning. They are all currently employed in centres involved with the development of academic staff or they have had extensive prior experience and are now in a more management oriented position. These respondents present views from four continents, six countries and in the United States of America, 21 different states. No two individuals come from the same institution.

Below are two snippets received from two respondents. The first is cited as an example of how sustained communication opportunities with international peers are presented by the low cost and convenience of the medium and the second as an indication of changed perception.

E-mail creates sustained communication possibilities

"… If you have questions about anything else specifically, I'll be happy to answer them. May I please have a copy (e-mail) of your outcomes and maybe a description of what you're doing at your institution? It sounds very interesting.

Best"

American respondent.

E-mail changes perceptions

"… I will be delighted to respond to your questions, and feel honored that my name was suggested to you. Please allow me a couple of days, however, since I am quite busy at this moment. I will be back in touch.

¡Saludos cordiales!"

Mexican respondent.

From the last reply from the Mexican respondent, it is clear that it is possible not only to get reliable replies and answers to questions, but the medium has also changed our perception of reasonable reaction time to such an extent that a person feels obliged to explain a delay. In this instance, the delay eventually proved to be only four days!

Direct e-mails are very powerful and reliable ways of obtaining feedback from specifically identified individuals.

6. Web pages

As a result of the ever-increasing number of institutions where the relevant departments and individuals involved in academic staff development have a web presence, it is possible to obtain information on the activities of practitioners across the world.

Some 254 institutions in eight countries that appeared to have active staff development sections were identified. The key individuals involved were identified and added to the questionnaire circulation list.

Many of the web pages also include details of the staff development activities at that particular institution and provide valuable insights.

Unfortunately, many of the web pages were dated. Scott (2000) warns that as many as 50% of e-mail addresses obtained from the web may be outdated.

The web search started in April 2000 and the identification process was concluded about a year later when the questionnaires were circulated. A disappointing 64 automated replies were received indicating that many of the e-mail addresses were incorrect and as such the e-mail messages were undeliverable. A further 14 replies were received from people indicating that they were no longer involved in the field. Not all of the latter respondents indicated for how long they had been out of the field, but one of those who did, said that she had not been active for some five years. Some of the returned e-mails and retired/promoted individuals may be people who

have made recent changes, but for at least some and probably for many of these, the failed communication is the result of web pages that are not updated regularly.

All of the pages from which dated information were gathered were fixed hypertext files. These are files with a set content. Other types of files, such as .asp files, were also encountered. These files do not have a set content, but retrieve the content to display from a database. When pages are done in this way, information can more easily be updated.

Some of the respondents attached web page links to their feedback. Most of these web pages contain information about the way those departments approach their task. These web pages provide useful information, but when the source codes of many of these files are viewed, it can be seen that the meta tags are not properly specified. In layman's language this means that the keywords that would indicate to search engines what information to expect from a page, are not sufficiently specified, which makes it more difficult for search engines to recognise the potential of the page. This does not mean that the pages are any less useful. These specially referred pages contributed to this research.

7. Questionnaires

As indicated above, 254 institutions of higher education (world-wide) were identified as having relevant experiences. 367 Individuals involved in staff development and change at these institutions were identified and also personally contacted via e-mail.

This research broke with the conventional questionnaire format. Respondents were sent an individualised e-mail addressed by first name and asked four, intentionally vague, open-ended questions in order to 'simulate' a semi-structured interview. The four questions were clarified by sub-questions and comments in brackets. These interviews were augmented with further e-mail correspondence. This served both as a means of obtaining more refined information and as a means of cross validation. This is in keeping with Merriam's (1998) position that calls for verification by using multiple investigators, data sources, or data collection methods to confirm emerging findings and adequate engagement in data collection which she describes as sufficient time spent on data collection so that the data becomes saturated. In this

way each respondent served as a cross check for any other respondent. Any apparent contradictions thus encountered, was cleared up by member check email correspondence.

The questionnaires (Figure 2.1) were specifically designed to be open-ended. This was done in order to give respondents the opportunity to react freely and possibly even emotionally to the questions raised. The fact that more than one respondent requested to remain anonymous possibly indicates that they may have expressed their opinion freely.

It was hoped that the open-ended e-mail correspondence would result in what Merriam (1998:9) calls "maximum variation" by "purposefully seeking variation or diversity in sample selection to allow for a greater range of application of the findings by consumers of the research". This type of research according to Merriam (1998:6) should result in "rich thick description" by "providing enough description to contextualise the study such that readers will be able to determine the extent to which their situation matches the research context, and hence, whether findings can be transferred".

The sample size could be regarded as more than adequate. Fifty-seven completed responses were received. The response rate is the percentage of successfully returned emails. This could influence validity. Authors such as Behr (1988) and Mayer (1989) indicate that even for quantitative studies a number as low as 30 could be adequate. Because the nature of qualitative research deals with more specific issues and not numerical representation, a minimum number of respondents does not need to be specified. Others disagree. In fact, authors differ substantially about the exact rate needed to guard against response bias. From the office of the Australian Auditor General comes the admission that *"There is no absolute answer to the question: 'What is a minimum acceptable response rate?*'(Australia, 1998)", but it immediately goes on to advocate a percentage upward of 50%. Layton (2001) reports a drop in the number of people willing to respond to surveys and claims that it is very difficult to reach 50% response rate with mail surveys.

Good day{first name of respondent}

My name is Dolf Steyn. I am a PhD student at the University of Pretoria, South Africa. During my search of the field, you were identified as a knowledgeable person involved with the development of academic staff at your institution.
I would *really* appreciate minutes of your time to answer questions which will help me with my research.

I do not want to bore you with too much detail, so I'll suffice to say that the focus of my research is to explore the relationship between change, staff support and the possibilities of technology. I will gladly give whatever further information you require.

The 4 questions listed below are specifically designed not to restrict your style or response spectrum. Guidelines are given in brackets, but should not be seen as limiting or prescriptive. ANY inputs would be truly appreciated.

Should you feel that your schedule does not allow to answer all the questions, I dare to beg that you do return as much of your reply as possible.

Thank you in advance for your time and consideration which we would reference in acknowledgement unless you specify differently.

Groetnis (the Afrikaans for "cheers")
Dolf Steyn

Questionnaire

1. History
   1.1. Identify your all time staff developmental highlight
   (Best departmental success story, Best personal success story)
   1.2. Tried but aborted approaches to staff development
   (Formal name if available, Short model description, Why did it fail, In what way was it successful?)
2. Present
   2.1. Current approach to staff development
   (Formal name if available, International "father" of idea, Short model description)
   2.2. Technological involvement?
   (Describe if applicable)
   2.3. Satisfaction level
   (Impact, feedback, own perspective)
   2.4. Constraints
   (List & prioritize)
   2.5. Biggest advantage
   (List & prioritize)
3. Future
   3.1. Ideal envisaged model
   (Please describe)
   3.2. Practical envisaged model
   (Please describe)
   3.3. No! Never, ever! (Absolute avoiders)
   List & prioritize
   3.4. Yes, Yes Yes!! (Vital elements)
   List & prioritize
4. Localization
   4.1. Institutional Factors
   (Where, Size)
   4.2. Departmental factors
   (Name, Staff count, Scope of responsibility)
   4.3. Personal factors
   (Qualification, Experience, Job title, Prime focus)

PS: Thank you once again! I am extremely grateful for your time, and expertise :-)

Figure 2.1: Example of response request and questionnaire

Hsiung *et al*. (1999) regard the response rate for e-mail as lower than that of mail surveys and Rhines (2000) reports: "*I noticed over the course of two years [e-mail] response rates drop quite a bit as the novelty wears off*". Rhines (2000) continues to give the following guideline: *"…assuming you have a decent survey…you can expect response rate approximately as follows:*

- *Employees (or others with $ incentives)* *50%-75%*
- *Members/very interested people* *30%*
- *All others* *5% - 20%*
- *Disinterested or over-surveyed group* *Less than 5%".*

This correlates with the rule of thumb given by Kahaner (1994) who stated:"*..time consuming surveys…with a response above some 15 to 20% are considered successful".*

The 58 completed questionnaires returned in this case ensure a favourable response rate of 23.6%.

8. Integration

Chapter One, Table 1.2 combines the various collection methods into a single table and indicates from which source relevant information for the different research questions were expected.

9. Sources of information

Source of information	Medium through which accessed
Subject experts	Books
Practitioners	Web pages Discussion groups E-mail questionnaires
Academics (Faculty members)	Journal articles Discussion groups
Change agents	Books Web pages Discussion groups E-mail questionnaires

Table 2.6: Source and medium interrelation.

Table 2.6 shows the four main sources of information as well as the medium through which access was obtained. The classification in the left hand column is not exclusive and may in some instances refer to the same individual.

10. Analysis of data

The analysis of this qualitative data guided by heeding the following suggestions from Bogan and Biklen (1992):

- ✓ "*Force yourself to make decisions that narrow the study. 'You must discipline yourself not to pursue everything'.*
- ✓ *Plan and adopt data collection sessions according to what you find in previous observations.*

- ✓ *Write memos to yourself about what you are learning.*
- ✓ *Try out key ideas and themes on others.*
- ✓ *Play with metaphors, analogies, and concepts. "Nearsightedness plagues most research…Ask the question: 'What does this remind me of?'"*
- ✓ *Use visual devices. Trying to visualize what you are learning about the phenomenon can bring clarity to your analysis. Such representations can range from 'primitive doodling' to sophisticated computer generated models."* Bogan and Biklen (1992)

The Analysis proceeded as follows:

The researcher familiarised himself with the environment by reading widely, both from traditional paper based resources and electronically accessed information. This was done to cross analyse existing material, with new contributions and to discover common themes to explore in future communiqué. This corresponds with the suggestion from Polkinghorne (1995) to base analysis on a number of cases to bring out broader themes and general characteristics.

The next step in the analysis was to read and re-read contributions in order to identify and separate the parts which contained the sought after information. Commonalities which appeared were captured as themes. These themes were thus identified inductively, based on the data gathered. The common themes were then extracted and compared to the original contributions to ensure congruence. These themes are used as headings for shorter reference. To improve understanding of the nature of the information represented by these headings, they are linked to at least one quote representative of that kind of comment. The whole analytical process was carried out by the researcher alone.

As a member-check (Merriam, 1992), the original contributor was contacted for clarification where any uncertainty existed. Emerging trends or threads were also discussed and/or sound-boarded against fellow practitioners, both via e-mail and in various physical discussions.

Extracts from the work were included in a conference presentation (WWW2001, Rand Afrikaans University, 5 – 7 September 2001) to test ideas and get feedback from attendees.

Information previously captured from literature, web pages, e-mail contributions and other correspondence were manually analysed, classified, categorised and coded. Some calculations were done after encoding, using a spreadsheet. Because the questions were open-ended and did not hint or refer to any specific detail, answers from respondents were more spontaneous. Hence, similarities in feedback were viewed as more significant than mere recognition-and-selection of pre-listed items. Calculations were limited to totals, averages, frequency of mention and position of mention as numerically represented by mode and median. This was done in order to assist with the classification and categorisation of responses, rather than to arrive at statistical correlations, in keeping with Merriam's claim that:

> *"the researcher is the primary instrument for data collection and analysis. Data are mediated through this human instrument, the researcher, rather than through some inanimate inventory, questionnaire, or computer."* Merriam (1998:7)

It was not deemed necessary to use dedicated statistical analysis software as a holistic, rather than a quantitative picture was sought.

11. Conclusion

This research is a qualitative project that used various data collection methods to obtain information which provided insight and a better understanding of the complexities surrounding the transformation of a Higher Education institution into a learning organisation.

In Chapter Three the contributions from existing literature are discussed.

Chapter 3

1. Introduction

As a foundation from which to approach this study, it is necessary to review relevant literature. The main issues identified as being significant to this study are change, staff development and information technology. A broad outline of this chapter is presented in Table 3.1.

Research questions	Topic	Scope	Related Sections
3.1.1; 3.1.2; 3.1.3; and 3.1.4.	Change	Change as an impacting phenomenon on the lives of higher education practitioners. The origin, nature and scope of changes required.	2; 3
3.2.1 and 3.2.2	Staff support/ development	Various ways in which staff members are supported. A selection of commonalities and characteristics of successful models.	3; 5
3.3.1	Information technology	Possibilities and constraints of information technology as a delivery vehicle.	4
3.2.3	Dynamics between change and staff support	The effect of change on South African higher education practitioners and how this may affect the amount or nature of support needed.	3; 6
3.3.2	Inter-relation between staff development and information technology	Which changes need to be made to staff support and development practice to exploit the possibilities of information technology	7

Table 3.1: The range and relevance of the literature study

2. Change

The concept of change is common knowledge, but the effect of change on individuals can best be understood through the use of a metaphor.

> *"The essence of a riddle is to express true facts under impossible combinations. Now this cannot be done by any arrangement of ordinary words, but by the use of metaphor it can." (Aristotle, 350B)*

The use of metaphors is further encouraged by Rorty (1989) who counteracts any notion that metaphoric discourse is but idle chatter by suggesting that intellectual history is linked to the metaphor,

> *"Old metaphors are constantly dying off into literalness, and then serve as a platform and foil for new metaphors." (Rorty, 1989)*

2.1 Intellectual drift

Picture the process of the creation of earth as we know it; earth plates move over time, and shift as a result of various forces that impact upon them. A situation, often called continental drift, is created. Huge masses shear in some places, stick in others and create chaos when they eventually shift. The reverse is no less eminent as earth masses push against each other. Californians are but too aware of the resulting earthquakes (Bradley, 1998). As nature adjusts through time, the unmatched beauty of mountain ranges, rock formations and valleys should be enough to humble man.

On a much smaller scale, humans have to deal constantly with various impacting forces. The mind needs to evaluate and encode new information in order to determine potential impact. Within these new circumstances lies potential change and individuals find themselves in a position where it is necessary to realign with the new reality. Piaget (1952) calls this need for realignment *disequilibrium.* It arises from the differentiation and integration needs of the individual. On the one hand, there is the need to remain unique and differentiate between different factors but, on the other hand, there is also the need to find common denominators and integrate new information into the existing frame of reference. As the individual now realigns with the new realities, new "mountains" of understanding are generated and often "canyons" of new confusion appear. After each cycle of differentiation and integration

the self is enriched by the new information that has been added. This new order in consciousness adds complexity to the self, producing psychological growth (Van der Stoep and Louw, 1976; Csikszentmihalyi, 1990; Bradley, 1998).

> Within the metaphorical context of continental drift and from the above realities about the constant dynamics of individual perception, a phenomenon evolves which will be called ***intellectual drift***.

The concept of intellectual drift includes the original disequilibrium, the differentiation process as well as the integration with existing knowledge. This surmounts to psychological growth that further links the new reality perception with the resulting adjustment in thought direction (Piaget,1952; van der Stoep and Louw, 1976; Csikszentmihalyi, 1990). While the intellectual part of the word acknowledges the cognitive elements, the word drift is deliberate in as much as it illuminates the reality that this process is not completely voluntary or even always under control. This stresses the dependence on the environmental forces, events and impacts. Intellectual drift is not a destination, but a constant or at least recurring cycle of definition, which leaves room within itself for some inevitable self-contradiction. It holds elements of deconstruction in that intellectual drift is never absolute or final. Constant redefinition and new insights create continuous new realities.

> *"Deconstruction is inventive or it is nothing at all; it does not settle for methodological procedures, it opens up a passageway, it marches ahead and marks a trail."* (Derrida,1984*)*

Lye's 1996 explanation of deconstruction ties in well with the drift metaphor.

> *"This is not to say that [this] experience of the real is not real; it is: we live in a real world. But we live particularly in our codification, our system of signs. If we cannot translate any experience into symbolic form then we cannot 'know' it in a way that is useful to us; if we do know, then our knowledge is only knowledge through our codes and our signifying systems--that is, mediated knowledge. (as when we might experience an earthquake without immediately knowing what it is, and so for a moment experience only something like disoriented panic)*."
> (John Lye, 1996)

Everyone experiences intellectual drift and the occurrence of impacting events, but because of the difference in attitudes and abilities of the people, the end result and tempo for each person will be different. It should however, still be seen as a positive and desired phenomenon in the cycle towards growth. A quote from the British biologist and educator Aldous Huxlex (1825 – 1895) puts it rather well:

> *"Experience is not what happens to a man. It is what a man does with what happens to him."*

While the effect of change may be intellectual drift, the various change factors need further exploration.

2.2 Change factors

The focus of this research is on higher education. This investigation will however, look at those change factors that may appear beyond the specific boundaries of education, but which still impact on the world of higher education. Change will be evaluated both from a global and then a South African perspective.

2.3 Global

Globalisation is a common term in many walks of life. Improvements in technology have opened up the world and provided alternatives to many of the barriers that distance used to create.

The breaking of traditional boundaries, however, has resulted in new problems. In the new "smaller world" people of different cultures need to work together.

> *"Global corporations have significant problems dealing with cross-cultural management issues. Developing meaningful cross-cultural and global relationships was a key concern that managers expressed in the questionnaires and interviews. The time involved in building and developing these relationships was enormous, and with enhanced global operations, joint venture and strategic alliance activity, was increasing."* (McKenna, 1999)

When confronted by challenges beyond the scope for which people view themselves to be equipped, an increase in skills is called for (Csikszentmihalyi, 1990) (See Figure 3.3). A combination of staff development and/or formal study can help to develop such skills. Therefore globalisation has resulted in an increase in formal education while breakthroughs in medicine have improved world health. A full cure

for HIV/AIDS has eluded researchers. While this is a world phenomenon, the impact of HIV/AIDS appears to be highest in developing countries and this is especially true in Africa. The true impact of HIV/AIDS on the labour force of tomorrow is still unknown, but is in the prediction phase with politicians playing who-to-blame games (Taitz, 2000).Due to the AIDS pandemic, in 1990, the shape of the graph for registered deaths in South Africa peaked at around the age 70 for males and females (Figure 3.1). However, the stark reality is that the 1999 statistics show that deaths have more than doubled the 1990 figures with most people dying in the 35 to 75 age group. Also there appears to be a bimedial distribution of deaths occurring in women around 30 and 70 years of age (Figure 3.1).

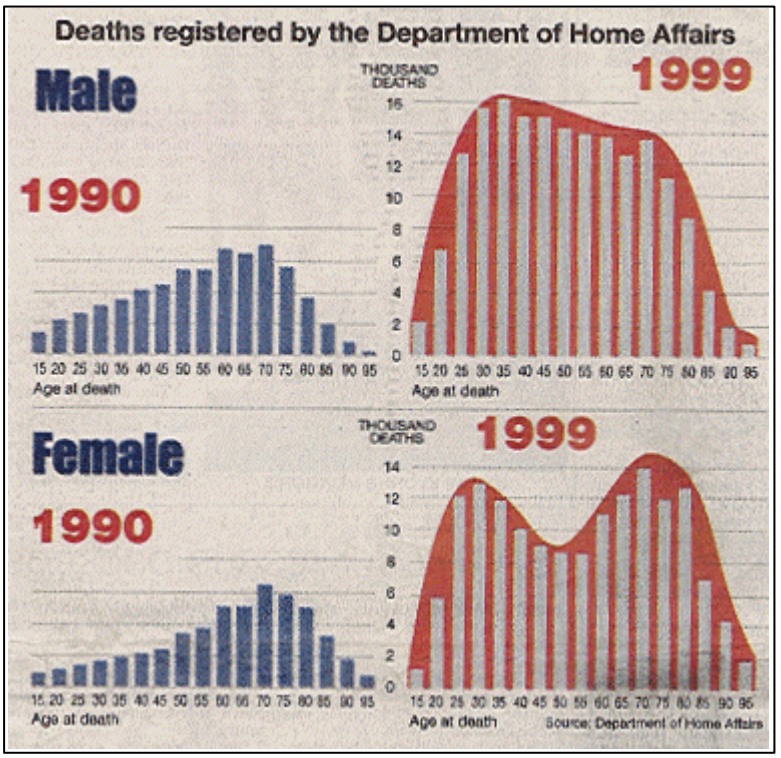

Figure 3 1: Registered deaths (Taitz, 2000)

Taitz (2000) quotes the president of the Medical Research Council, Professor Makgoba as saying:

> *" If we had been involved in a major war, that would be the only thing to explain the high numbers of young men and woman who are dying in our country!"*

One can only speculate on the willingness of students to engage in serious study during their twenties if their life expectancy may be as low as 30. The economic

consequences of the impact on the workforce alone could be devastating to any economy (Grulke, 2001).

At the organisational level environmental turbulence, organisational change and increasing complexity are obvious features of the business and organisational world today (McKenna, 1999). One way of looking at these changes is to encapsulate them all under the phrase of 'environmental uncertainty':

> *"Managers are faced with the problem of putting together and directing organizations while being subjected to constrained resources, limited time schedules, and environmental uncertainty*." (Nicholas,2001)

Another way could be to focus on the implications of these changes. Many authors have identified factors impacting on organisations today. A study of these authors reveals six major implications of recent changes for organisations. These are summarised and listed in Table 3.2.

In questionnaire responses and interviews with managers an important and repeated point mentioned was that "doing things" was becoming increasingly difficult, particularly with constant change, multiple mandates, matrix structures and the constant need for retraining (McKenna, 1999).

The retraining need is not only a continuation of old development practice. Changing organisational cultures lead to different approaches to the preparation of staff for their respective jobs.

> *"The development of approaches to lifelong learning involving learning in the workplace has led to the development of new approaches to the specification, structuring, recording and demonstration of learning. Traditional methods of classroom teaching are inappropriate to situations in which a considerable amount of learning takes place off campus." (Shaw and Green, 1999)*

If all staff members at all levels are constantly subjecting themselves to lifelong learning (See section 3.2) within the organisation, it follows that the whole organisation is learning.

1	Organisational structures may need to be more **flexible and adaptable**. They will change constantly in order to reflect new interrelationships, interactions, patterns, uncertainties and ambiguities that will be created, destroyed and re-created within the rapidly changing environment. (McKenna, 1999).
2	The increasing globalisation of business is bringing together distinct national and organisational cultures through **mergers, strategic alliances and joint ventures**. (Stacey, 1996).
3	Organisations will need to be more **proactive**, creating the "future by design". This requires more creative strategic thinking rather than "planning" in a rigid, traditional sense. (Hamilton and Clarke, 1996, McKenna, 1999).
4	The **importance of people** to organisations in the future will be paramount as the management of knowledge and intellectual capital become the prime sources of an organisation's competitive advantage and performance (Haskell, 1998; Ulrich, 1998).
5	Managers will also need an increasingly sophisticated **awareness of stakeholders** and their needs (McDermott and Chan, 1996; Mitchell *et al*., 1997).
6	No more isolated interventions. A lifelong learning culture must be incorporated in workplace practice. (Shaw and Green, 1999)

Table 3.2: Change implications

2.4 Learning organisation

While definitions vary, each distinct description carries within itself a focus on an important aspect of a learning organisation. The four definitions that follow are good examples:

"A learning organisation is one in which people at all levels, individually and collectively, are continually increasing their capacity to produce results they really care about." (Karash, 1998)

"*The essence of organisational learning is the organization's ability to use the amazing mental capacity of all its members to create the kind of processes that will improve its own* ." (Dixon 1994)

"A Learning Company is an organization that facilitates the learning of all its members and continually transforms itself." (Pedler *et al*., 1991)

"*Organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to learn together*." (Senge, 1990)

A combinational, inclusive concept derived from all of the above is probably the most informative one. From the definitions above, the elements to capture in a definition are:

Who	Does What	To What	How
Individuals	Expand	Capabilities	Collectively
Institution	Grow	Productivity	Continually
People at all levels	Improve	Self	Exponentially
	Recognise	Results	
	Reinvent		
	Utilise		

Table 3.3: Aspects towards a definition for a learning organisation

Understandably complex because of its inclusivity, the definition by Skyrme, may well be the most accurate:

"Learning organizations are those that have in place systems, mechanisms and processes, that are used to continually enhance their capabilities and those who work with it or for it, to achieve sustainable objectives - for themselves and the communities in which they participate." (Skyrme, 2001)

2.5 Higher Education

Factors around education, of which financial constraints are not the least, have forced stakeholders to take note of the changing situation and to adopt new ways of teaching and learning. The learners themselves are much more outspoken about their demands and expectations and the combined result leaves a drastically altered reality for which educators should be prepared (Mulholland, 2000). The change factors impacting on higher education will be discussed under the following sub headings:

- ✓ Academia
- ✓ South African Higher Education

2.5.1 Academia

Table 3.4 points to a few of the more important changes that are taking place at academic institutions in response to global changes. The left column shows the more traditional approach, while the right column gives the current trend.

Traditional approach	**Current trend**
Degrees, credentials	Competencies, certifying
Physical classrooms	Virtual classrooms
Teacher focused	Learner focused
Presentation mode	Discovery mode
Standardised content	Individualised content
Information is transmitted	Learning is facilitated
Autonomous work	Team work
Fixed calendar	Flexible calendar
Central organisation	Decentralised organisation
Local population	Global population

Table 3.4: Recent shifts in Higher Education (Tapscot 1995)

From all the changes listed in Table 3.4, it follows that the traditional educational approach can no longer meet the needs of the learner and that alternative ways should be investigated (Steyn, 1999).

There is a global trend towards improving the quality of teaching and learning.

> *"In recent years the emphasis in both research and government policy has been on improving the quality of teaching with a view to improving learning.*" (Johnston, 2000)

This is not limited to first time students, but also goes with an increased focus on lifelong learning and also hold implications for continuous staff development. Shaw and Green (1999) echo this from a UK perspective

> *"We can identify lifelong learning as extending considerably the concept of continuous professional development in a range of directions."*

Strategically the implications of a shift to lifelong learning can hold benefits in terms of a potential growth in student numbers. There may however, be a call for new or adapted programmes, schedules and modes of delivery in order to suit the lifestyle of working individuals.

There does not seem to be a single universally accepted approach to structuring education. Some years back the Americans embraced outcomes based education;

> *"When the Bush administration first embraced it five years ago, the idea seemed like good conservative education theory and the most promising device around to improve academic standards in American schools. The* ***"it"*** *was "****outcome-based education****," and OBE was going to help make Bush the* ***"education president."****(Schrag, 1995 – my emphasis)*

OBE is not universally accepted in the USA and it still incites strong reaction as indicated below.

> *"Mention outcome-based education now to the religious conservatives at Citizens for Excellence in Education (CEE) or the National Association of Christian Educators, with which CEE is affiliated, or to the conservative members of Focus on the Family or Concerned Women for America or Phyllis Schlafly's Eagle Forum, and they're likely to become apoplectic.*
> *At bottom it reflects genuine social, intellectual, and ideological controversies about how children should be taught, what they*

> *should learn, and what, ultimately, schools should be in a democratic society."* (Schrag, 1995)

While the Americans are becoming more critical of their system of outcomes- based education, the new South African system of qualifications is moving towards an outcomes-based approach. American criticism neither rules out possible successes nor does it indicate acceptance of the system.

The new South African system may open structures to allow for greater transportability in qualifications; something the old system seems to have failed in. Theoretically the outcomes based system addresses the very needs of students:

> *"In structural terms the essential need for students is the creation of a coherent and understandable qualifications system in which curriculum and progression links are clear. The framework needs to be related to credit accumulation with generally accepted tariffs between credit points, levels of attainment and qualifications … Here is a good example of where our existing structures are not compatible with a lifelong learning approach … What we need is an all-through framework and not demarcation disputes*." (Shaw and Green, 1999)

The move into the new educational framework in South Africa has not been without difficulties either. In fact, the Minister of Education, Kader Asmal, has already indicated that change will be forthcoming. A Sunday Times article entitled "Asmal deserves our thanks for dumping disastrous OBE" (Mulholland, 2000) acts as clear example that while the true implications of this new set of changes are yet unknown, the insecurity and misinformation during this period of anticipation is obvious.

While the above clearly shows how some elements of the educational debate has grown beyond the borders or confines of Academia, many other factors still account for heated debate within. The most important of these factors are:

- ✓ academic drift;
- ✓ research drift; and
- ✓ teaching drift.

2.5.2 Academic drift

This is what Americans call "mission creep". A fairly slow process of movement from one relatively humble academic condition or level (Technikon for instance) towards a seemingly elevated status (that of a University of Technology). Examples of academic drift or mission creep abound in nearly all continents. Another example would be where some state universities have gone beyond their original brief of lectured undergraduate and master's programmes towards becoming more like research universities (Clark, 1995 and Bradley, 1998).

> *"The American expression "mission creep" colourfully suggests a more deliberate, even sneaky, attempt to change and move up from one kind of institution to another without anyone really noticing or doing anything about it." (Badley, 1998)*

2.5.3 Teaching drift

Clark's initial definitions of these two phenomena are quite simple: "teaching drift" is where teaching pulls away from research-centred departments and universities into all-teaching institutions (Clark, 1995). Clark maintains that this could be as a result of

- ✓ the movement into mass higher education;
- ✓ increased labour market demand for professional experts;
- ✓ the increasing gap between frontier knowledge and teachable codified knowledge; and
- ✓ increased government patronage and supervision.

The emerging private universities and businesses venturing into teaching in South Africa may also have this focus for economic reasons.

2.5.4 Research drift

Clark argues that the old view that teaching and research are inseparable at the university level has begun to break down and that research and teaching are drifting apart (Clark, 1995). Many South African universities and even Technikons are prioritising research as a growth area. This may prove unwise, as modern higher education demands a concentration of research in a relatively small number of research universities.

> *"If spread among all institutions, the nexus (i.e. between research, teaching and study) will become too costly, under funded in unit support, and weakened by diffusion." (Clark, 1995)*

2.6 South African Higher Education

Change is a common denominator and debates about traditional ways of teaching are no longer limited to the educational practitioners either. Education has received substantial political scrutiny and as a result the whole South African educational system has been revised. Many laws have been passed within the past five years that hold significant implications for South African education; not only in terms of formal education and training, but also for on-the-job training and support expectations of employees.

The implications for higher education as a result of these changes in legislation are multiple and far-reaching. To give full justice to the aims and implications of these acts would go beyond the need to investigate change factors, but Table 3.5 gives a synopsis of direct implications of three of these namely the:

- ✓ South African Qualifications Authority Act (58 of 1995);
- ✓ Employment Equity Act (55 of 1998); and
- ✓ Skills Development Act (97 of 1998).

Act	Intended Outcome	Higer Education Implication
58/95	Establish the South African Qualifications Authority (SAQA), National Standards bodies (NSB), Standards generating bodies (SGB) and Education and Training Quality Assurance bodies (ETQA)	New bodies for standards and quality control. Phasing out and/or adjustment of existing QC bodies. The expertise often lies with staff of HE institutions. Contributions add to workload.
	Development and implementation of a National Qualifications Framework	New esoteric terminology needs to be mastered. Re-evaluation of **all** qualifications. Potential mobility between qualifications. Recognition for training of quality. Increased competition between providers.
	An integrated national framework for learning achievements	A framework is but a shell. Somebody has to do all the work to capture and structure existing qualifications. Quality control measures need to be set up and enforced.
58/95	Facilitate access to, and mobility and progression within education, training and career paths.	Recognition of prior learning principles is fine, but know-how and structures to apply them needs to be expanded.
	A shift towards outcomes based education.	New esoteric terminology needs to be mastered. New techniques need to be acquired. Open learning techniques require well-trained practitioners. As yet, many are not.
	Enhance the quality of education and training	In order to achieve this, outcomes based education is prescribed. Educators consult with other stakeholders. (Statutory bodies, future employers, students, industry etc)
	Drafting and submitting of qualifications	Evaluate, consult, rewrite and finalize. Additional work load. Deadlines create pressure
	Contribute to the full personal development of each learner and the social and economic development of the nation at large.	Lifelong learning could change student profile. Different student needs. Emphasised social responsibility Institutions have a responsibility as providers.
58/95 55/98 97/98	Accelerate the redress of past unfair discrimination in education, training and employment opportunities	Accelerated training programmes. Flexible entry requirements Staff tensions as some may view measures to be to harsh and others feel it they are still not adequate.
55/98	Promoting equal opportunity and fair treatment in employment	Institutions have a responsibility as employers.
	Implementing affirmative action measures to redress the disadvantages in employment experienced by designated groups, in order to ensure their equitable representation in **all** occupational categories and levels in the workforce.	Properly functioning teams may need to be changed. Under-qualified staff with potential can be appointed. This requires on-the-job training or learnerships. Early retirement of competent staff. Threatened behaviour from members of non-designated groups.

	An expedited change in staff culture composition.	Change management strategies paramount. Existing managers may not posses attitudes or skills to facilitate change.
55/98	Assign a senior manager responsible for equity.	Additional cost to provide for. Equity policy to be drawn up. Consult with stakeholders (employees and unions). Implement, plan and monitor progress. Report to Director-General
	Equity plan to be drawn up and submitted.	Analyse policies and practices Analyse staff profile and demographic data. (Per level!) Identify objectives, corrective measure, time frames, targets and allocate resources.
97/98	Improve the quality of life of workers, their prospects of work and labour mobility.	Same employer responsibilities as any other company. Great opportunities as providers.
	Improve productivity in the workplace and the competitiveness of employers.	Staff may elect to work for employers with a developmental approach. Improved productivity could make HE institutions more competitive.
	Promote self-employment	Especially the self-employed need to have competencies. As providers institutions stand to benefit.
	Increase the levels of investment in education and training in the labour market	New partnerships and or research opportunities. New awareness of developmental responsibilities.
	Provide employees with the opportunities to acquire new skills.	As providers institutions stand to benefit.
	Opportunities for new entrants to the labour market to gain work experience.	Joint ventures through learnerships may arise.
	Employment for persons who find it difficult to be employed	Awareness of the difficulties of others e.g. disabled persons Infrastructure needs to be accessible for handicapped people. E.g. lift buttons low enough to reach from a wheelchair.
	Introduction of the National Skills Authority(NSA), Sectoral Education and Training Authorities (SETA)	The expertise often lies with staff of HE institutions. Contributions add to workload. Register with the applicable SETA.
	A National Skills Fund is set up.	Funds available for developmental exercises via a grant system.
	Levies (a percentage of the wage bill) to be paid over through the revenue service	Registration with SARS 0.5% payable for 2000.
	Labour centres and the Skills Development Planning Unit is set up	Sectoral skills plans (SSP) need to be developed. Training interventions to be co-ordinated.
	Appoint a Skills Development Facilitator (SDF)	Register with a SETA (as an employer) Qualify for Grant A (15%) Submit a skills plan to the SETA
	Establish a Training Committee	Draft of workplace skills plan

Table 3.5: Legislative implications for Higher Education

Not everybody who is influenced by these changes in higher education accepts the changes taking place in equal fashion. Human reaction to change needs to be explored.

3. Reaction to change

Different people have different capacities for dealing with change. Human reaction to change will be discussed under the following sub-headings:

- ✓ Flow theory
- ✓ Life-long learning
- ✓ Motivation
- ✓ Change cycle

3.1 Flow theory

Chichentzmihalyi (1990) claims that people react to all situations with either one of three experiences, namely anxiety, enjoyment or boredom (Figure 3.2).

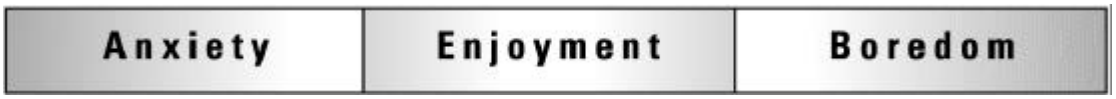

Figure 3.2: The balance between anxiety and boredom (Chichentzmihalyi,1990)

In all Chichentzmihalyi's studies, enjoyment came at a specific moment when the individual's skills matched the challenges of the activities. In any given situation, one person may be bored while another less skilled person may experience anxiety. Therefore the point where enjoyment is experienced is a dynamic one, which is dependent both on the skills level of the individual and on the challenge level of the activity. The diagram should be revised to incorporate these two factors (Figure 3.3).

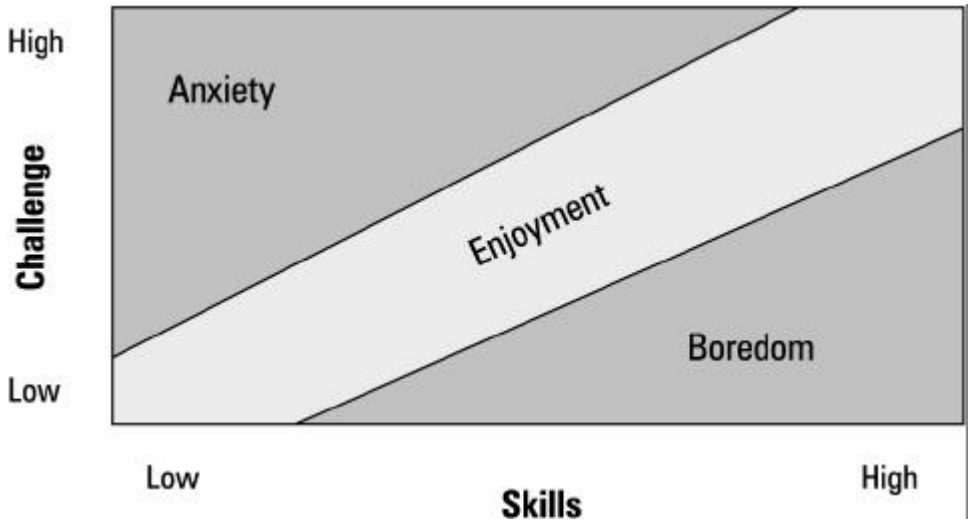

Figure 3.3: The effects of skill and challenge on enjoyment

The individuals' experience in relation to their perception of the size of the challenge as compared to their acquired skills will effect whether or not enjoyment or boredom will be the result.

This enjoyment must not be seen as mere pleasure, for during these enjoyment periods, flow is reached and a cycle of discrimination and assimilation takes place. Positive feedback from each flow experience strengthens the self and more attention is freed to deal with the outer and inner environment. As such, the amount of change that can be effectively dealt with is determined by the individual's ability to deal with change without being forced into anxiety.

> *"In flow we are in control of our psychic energy, and everything we do adds order to consciousness."* (Csikszentmihalyi, 1990)

3.2 Lifelong learning

The continuous spiral of movement between boredom and anxiety clearly sets the stage for an approach where the individual can be assessed on an ongoing basis to constantly readdress needs as new competencies are acquired and each individual's challenge level needs are realigned.

This new approach to education makes room for a more flexible time frame which,

without stating the fact, clearly makes it possible for learners with different abilities to steer their path of intellectual growth in such a way that they stay within the borders of the flow channel.

3.2.1 Prerequisites for optimal experience

From his studies, Csikszentmihalyi (1990) identifies the following eight factors that make flow possible if one or more of them are met:

- ✓ Challenge is optimised.
- ✓ Attention is completely absorbed in the activity.
- ✓ The activity has clear goals.
- ✓ The activity provides clear and consistent feedback as to whether one is reaching the goals.
- ✓ The activity is so absorbing that it frees the individual, at least for the moment, from other worries and frustrations.
- ✓ The individual feels completely in control of the activity.
- ✓ All feelings of self-consciousness disappear.
- ✓ Time is transformed during the activity (e.g. hours pass without being noticed).

Since flow is conducive to quality learning, the change agent has to try to incorporate as many of these factors into any development programme as possible. Involving staff members as part of the design team for the identification of developmental interventions, creates such an atmosphere.

The rate of change can push staff into anxiety. If the balance between perceived challenge and hence the need for skills is not met by equal developmental opportunities, the motivation of staff members may suffer. In this way the flow theory forms the basis of lifelong learning in that the continuous cycle of skills enhancement which happens with lifelong learning is in fact a way of dealing with the increased

challenges of new and/or changing environments. This necessitates a need for skills improvement in order to remain within the enjoyment channel.

3.3 Motivation

Two motivational theories will be described, the one by Malone and the other by Keller. Both will be given, because an inclusive approach is more representative of the motivators and the reaction of staff to changes in their environment.

The three factors originally attributed to Malone (1981) are challenge, curiosity and fantasy. In his later work he added control (Malone, 1987).

3.3.1 Challenge

The most important principle is that the challenge should be adjusted to the individual. Work should not bore or frighten people. While change agents are not in control of the level of perceived difficulty that staff members experience during times of change, it is important to note that extremes in terms of challenge may adversely effect the level of motivation amongst staff members.

3.3.2 Curiosity

> *"Malone distinguishes sensory curiosity and cognitive curiosity. Sensory curiosity is aroused by visual or auditory effects which are surprising or which attract attention. Cognitive curiosity is aroused by information which is surprising in that the information conflicts with the [individual's] existing knowledge or expectation, is contradictory or is in some way incomplete.*" (Alessi and Trollip, 1991)

The visual curiosity may be less important, but since a changing situation most often includes large quantities of information which conflict with existing knowledge, the motivational effect of cognitive curiosity should be considered and utilised.

3.3.3 Fantasy

Increased participation and active learning enhances retention. Role play and situational debate can be used to capitalise on the motivational potential of man's tendency to be motivated by situations of fantasy.

3.3.4 Control

Malone distinguishes three rules for control to enhance motivation:

- ✓ Contingency, whereby learning should be the result of learners' actions and responses;
- ✓ Choice: Options that permit individuals to decide on sequence and possibly difficulty; and
- ✓ Power: individuals prefer to see powerful outcomes to their actions. (Malone, 1987)

Change often removes control. As such it would seem to act as a demotivator. Perceptions of control like the introduction of choice and participation could limit this effect.

3.3.5 Attention

The first of the four motivators attributed to Keller in his ARCS motivational theory is attention. The acronym refers to attention, relevance, control and satisfaction.

He regards the securing of attention as vital to success; not only in terms of capturing attention, but also in terms of attaining attention throughout (Keller and Suzuki, 1988). This can be improved by a communication strategy which will not only keep people informed, but will add to their feeling of involvement.

3.3.6 Relevance

To utilise individualism and contributions of participants, they need to experience the content of the work as relevant to their own situation. Marjanovic (2000) also refers to this "*soft side of BPR*" (Business Process Review).

Using examples can show relevance to individuals. Mager (1991) uses this approach as part of his motivational strategy, by doing a target group analysis prior to a programme.

3.3.7 Confidence

Not unlike Malone's (1981) call for control and challenge, Keller and Suzuki (1988) stress the importance of confidence. Making expectations clear to individuals and giving a reasonable opportunity to be successful can achieve the challenge.

Change agents need to provide opportunities for staff members to experience successful interactions with change factors. This will not only improve their confidence but incorporate them in active learning contexts and utilise their often considerable potential in the addressing of new challenges.

3.3.8 Satisfaction

The last motivating factor is that of satisfaction. Keller, according to Allessi and Trollip (1991), sees satisfaction as a way for participants to use what they have learned in a way that is real and useful. Application should not only follow change interventions within reasonable time, but should also take place within a support framework to ensure that success and relevance will lead to satisfaction and continued involvement.

3.4 Change cycle

Brock and Salerno (1994) wrote a book with the title *The Change Cycle: The secret to getting through life's difficult changes.* In this work they introduce not only the more typical reactions to change, but refine them into six stages within which individuals can find themselves as a result.

These stages are:

- ✓ Loss
- ✓ Doubt
- ✓ Discomfort
- ✓ Discovery
- ✓ Understanding
- ✓ Integration

The first two stages are classed as a danger zone since individuals need to be aware of natural behaviour that could be negative and manifest in feelings of fear and resentment. This in turn could create paralysed and resistant behaviour stemming from cautious and sceptical thoughts, which are common during these situations.

It is normal to have these feelings or think such thoughts, but the danger lies in stagnating in the next two stages namely discomfort and discovery. Should the feelings of anxiety not be fought and replaced by feelings of anticipation, the confused thoughts associated with change reaction, will not be replaced by creative thoughts and the confusion associated with change may loop thoughts back to the cautious pattern associated with stage one.

Once the unproductive behaviour of discomfort has changed into the energised behaviour of discovery, thoughts again provide for reality and become focussed (Brock and Salerno,1994).

Table 3.6 captures the essence of the change cycle by showing the feelings, thoughts and behaviours of people at each stage.

Stage	**Feelings of:**	**Thoughts are:**	**Behaviour is:**
Loss	Fear	Cautious	Paralysed
Doubt	Resentment	Sceptical	Resistant
Discomfort	Anxiety	Confused	Unproductive
Discovery	Anticipation	Creative	Energised
Understanding	Confidence	Pragmatic	Productive
Integration	Satisfaction	Focused	Generous

Table 3.6: The impact of change (Adaptation from Brock and Salerno, 1993).

3.5 Danger zone defined

Brock and Salerno's warning with regard to the danger in not accepting and dealing with change is echoed by work done with higher education staff specifically dealing with re-curriculation and training as a result of changes to the educational system.

Observations made (Naidu and Steyn, 1999 and Steyn and Naidu 2001) correlate with those described by Brock and Salerno's (1993) danger zone and show multiple signs of uncertainty despite these interventions.

McKenna (1995) warns that since life is not linearly structured, interventions solely of the "system drives behaviour" kind, will not necessarily succeed by reacting linearly to changes in environment. Staff members may react in order to avoid embarrassment or threat. Over time these issues have manifested in what is reproduced in Figure 3.4 and what Argyris (1990) calls organizational defence patterns. For instance, Figure 3.4, from left to right, shows an attrition in the possible positions to which employees can revert. Such a work culture becomes less manageable as these defence patterns can be grouped into clusters as indicated.

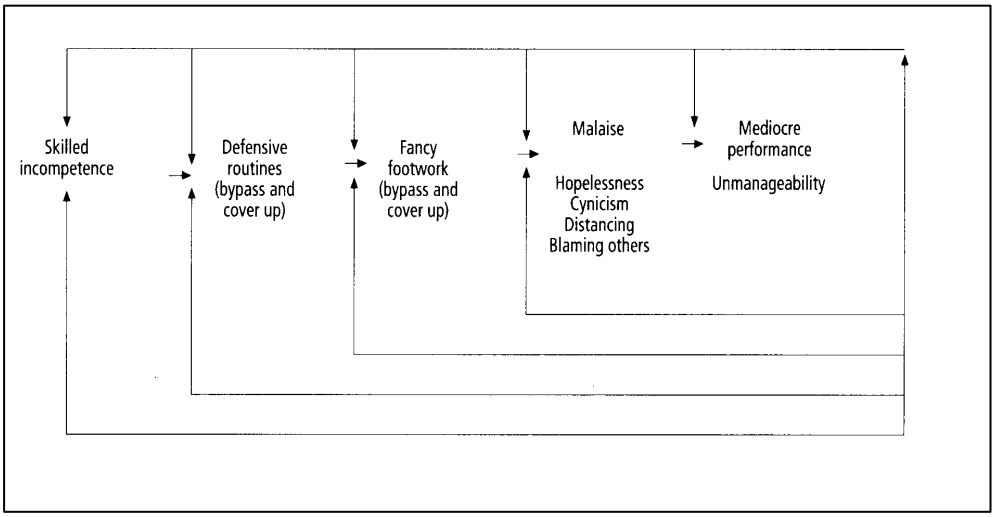

Figure 3.4: Organizational defence patterns (Argyris, 1990)

Argyris's (1990) theory of chaos shows that what starts as avoidance ends up in unmanageable mediocrity. New ways of doing must emerge.

Section three shows possible reactions and influencing factors which will co-dictate how people react to change. This variation in reactions suggests the necessity to have alternative approaches to cater for the spectrum of reactions described.

The next section examines the possibilities offered by Information Technology.

4. Information technology

> "*The web of our life is of a mingled yarn, good and ill together…"* William Shakespeare -All's well that ends well

Information technology has the potential to provide alternative/supplementary possibilities for the facilitation of learning.

> *"It is becoming increasingly unusual to pick up a professional training or education journal without seeing articles concerning alternatives to in-person teaching and learning. Distance education is not new, but the new technologies used for delivery in recent decades have fuelled different perspectives, methods, and debates than had been the case starting a century ago*." (Berge and Muilenberg 2000)

The advantages of technology are suggested by energetic believers and vast amounts of money are channelled into the development and acquisition of new systems. Yet despite technological availability, original estimations of profit from on-line sales did not materialise and the resulting disappointment with what has come to be known as the 'dot com promise' is echoed by the associated drop in stock prices towards the end of 2000 and in 2001.

From a review of the literature, experience in various distance education settings, and discussions with distance educators, Berge and Muilenberg (2000) listed specific factors which affect the way individuals perceive technological possibilities:

- ✓ work place (e.g., community college, government);
- ✓ job function (e.g., support staff; manager, researcher, student);
- ✓ type of delivery system used (e.g., audio-tape, computer conferencing, ITV);

- ✓ expertise of the individual regarding distance education;
- ✓ the stage of the respondent's organization with regard to capabilities in delivering distance education; and
- ✓ the area in which the respondent primarily works (e.g., fine arts, engineering, education).

These perceptions need to be considered when a developmental approach that incorporates the use of technology is constructed.

The use of technology in educational systems has increased over the past few years (Figures 3.5 and 3.6)(Mogge,1999).

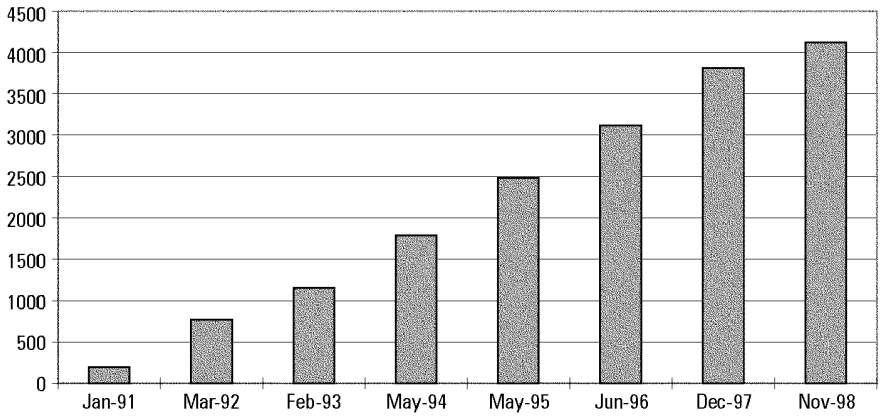

Figure 3.5: Growth of scholarly e-conferences

However Phelps *et al*. (1999) warn that despite US policies which encourage the use of technology, it is not easy to implement and/or maintain suitable standards of quality.

> *"Nationally, policy has placed considerable emphasis on the embedding of new technology into the teaching and learning process (e.g. HEFCE, 1997). However, the process of embedding learning technology is not trivial, and uptake has been patchy. One reason for this is the considerable range of skills that need to be acquired if embedding is to be carried out in a professional way." (Phelps et al., 1999)*

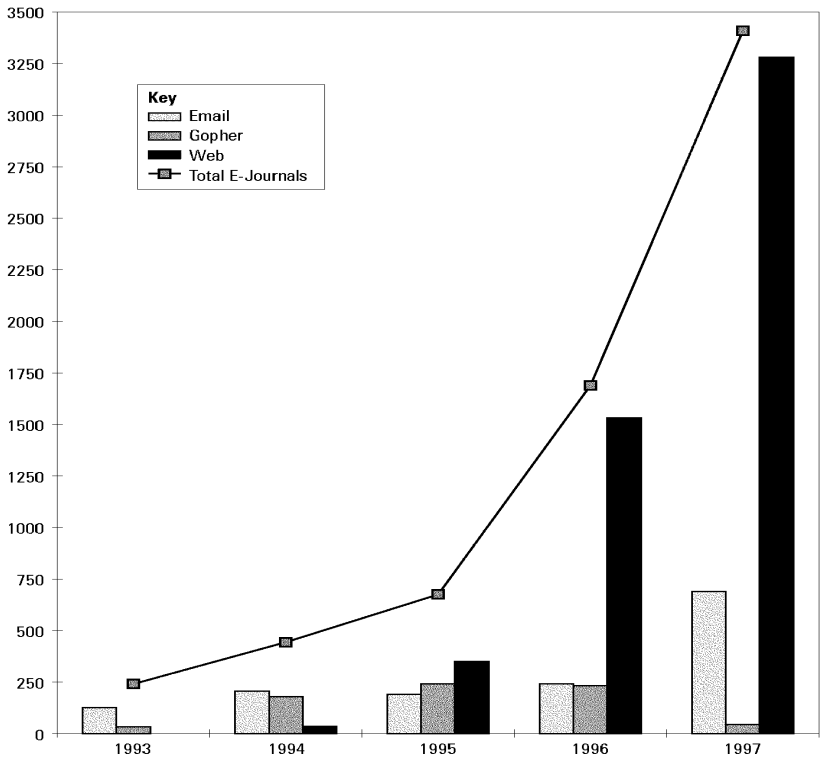

Figure 3.6: Distribution of e-journals

Furthermore, an understanding and experience at flexible learning systems is also required.

> *"Such technologies are tools with multiple capabilities; it is misleading to make assertions like "Microcomputers will empower students" because that is only one way in which computers might be used."* (Chickering. 1994)

Education innovation in South Africa has likewise placed staff members in situations where their skills may be inadequate, leaving lots of work for staff developers (Brown, 1999).

4.1 Barriers to distance delivery

Berge and Muilenberg (2000) conducted a study to identify the perceived barriers to the implementation of distance delivery of learning interventions. A valuable aspect of their study is the large number of respondents from various perspectives:

- ✓ 346 support staff
- ✓ 1150 teaching faculty members/trainers,
- ✓ 648 managers,
- ✓ 167 higher administrators,
- ✓ 102 researchers, and
- ✓ 91 students.

Managers and administrators were grouped as Support staff. Consequently, a total of three focus areas were used for comparison. Respondents were asked to prioritise barriers to distance education. Means for each of the sixty-four barriers were calculated and placed in descending order for each of the five job function categories. The eleven strongest barriers are reported in Table 3.7. These results support the findings of Felder (1994) who found that the major barrier to be related to increased pressures on lecturing staff.

The eleven weakest barriers are reported in Table 3.8. Note that because of the descending order of the rankings, the first listing under the weaker barriers is in fact only number 54 and that the absolute weakest barrier is in the last row as barrier number 64.

Ranking	Strongest Barriers	Support Staff	Faculty/ Trainer	Student
1	Increased time commitment	1	1	1
2	Lack of money to implement distance education programs	4	3	7
3	Lack of shared vision for distance education in organization	2	4	4
4	Faculty compensation, incentives, etc.	9	2	3
5	Organizational resistance to change	3	7	2

6	Lack of support staff to help course development	8	5	18
7	Lack of strategic planning for distance education	5	8	6
8	Lack of technical support	7	6	20
9	Slow pace of implementation	6	12	5
10	Lack of technology-enhanced classrooms, labs or infrastructure	10	9	9
11	Difficulty keeping up with technological changes	12	10	16

Table 3.7: Strongest barriers to DE sorted by combined ranking.

(from Berge and Muilenberg, 2000)

Ranking	Weakest Barriers	Support Staff	Faculty/ Trainers	Student
54	Lack of personal technological expertise	56	47	60
55	Competition with on-campus courses	55	55	57
56	Lack of Acceptable Use Policy (AUP)	60	56	54
57	Lack of transferability of credits	58	57	43
58	Tuition rate	57	60	52
59	Problems with vast distances and time zones	54	59	62
60	Technology fee	59	58	58
61	Ethical issues	61	61	59
62	Local, state or federal regulations	62	62	61
63	Existing union contracts	63	63	63
64	Lack of parental involvement	64	64	64

Table 3.8: Weakest barriers to DE sorted by Job Function (from Berge and Muilenberg, 2000)

Contrary to popular belief, the cost to the student as a result of technological delivery is ranked rather low as a barrier. This, combined with the lowish ranking of the need for personal technological expertise may indicate that students are more likely to make a mental shift to alternative learning strategies.

While the rankings for the different interest groups are remarkably close in most instances, there are two noteworthy exceptions. The transferability of credits was rated higher by the students than the other groups. As institutions focused on client needs it should signal to administrators that this need is of great significance to the students. The second discrepancy lies with the low ranking of personal technical expertise. No concrete deduction can be made, but one of two explanations are possible; either faculty members are indeed more willing to acquire skills as and when needed and hence do not perceive the lack of skills equally important, or, the scope of the shortcoming may be sufficient to blind faculty members to the true impact of their shortfall. However, Support staff rated this more important than did the other two groups suggesting that their perceptions differ from academic staff and students. This difference in perception requires further investigation.

Globally there is also a move towards better utilisation and adoption of information technology. Possible benefits need to be explored and contextualised. Technology changes the way we do things.

> *"Change and Information technology is part of the content and not just part of the context*." (Argeron, 2000)

In an attempt to overcome some of the barriers previously identified, it is necessary to develop a common frame of reference:

> *"There is considerable tension between the centres about the role of teaching and learning ideas in relation to technology. Similar vocabulary is used to describe very different ideas and assumptions, which makes it hard to determine how our ideas are similar and different*." (Smith, 2001)

Rogers (1995) identifies attributes of technological innovation that influence its adoption rate. These factors could be perceived to be mere characteristics of technological adoption, but in fact represents attributes which will negatively impact

on the technological adoption rate. As such they can be considered to be additional barriers to technological adoption.

These attributes are:

- ✓ Relative advantage: To what extent the new product is better than the existing 'old' product.
- ✓ Compatibility: Not only technical compatibility, but the product should also fit in with existing beliefs and needs.
- ✓ Complexity: An indication of how simple (or not) the product would be to use.
- ✓ Trialability: How easy it is to experiment with the new product on a trial basis. This could include issues like settings that may need changing or additional drivers to install or download (Rogers 1995).
- ✓ Observability: What evidence there is that this product has succeeded or, at the very least, has the potential to succeed (Rogers 1995, Lewis, 2000).

In order to reach the stage of adoption (Rogers 1995) it is necessary to cross the adoption chasm (Moore 1991, 1995).

4.2 The technology adoption life-cycle

In this section the technology adoption life cycle as developed by Moore(1991) is discussed. Insights gleaned from the application of these ideas are also investigated.

The lessons learned from Moore's (1991) technology adoption life-cycle is valuable for identifying the role of technology in adoption of innovations (Daniel, 1993).

The number of people adopting new technology, when plotted over time, represents a bell shaped curve. Moore (1991) identifies five groupings which make up the segmented curve (Figure 3.7).

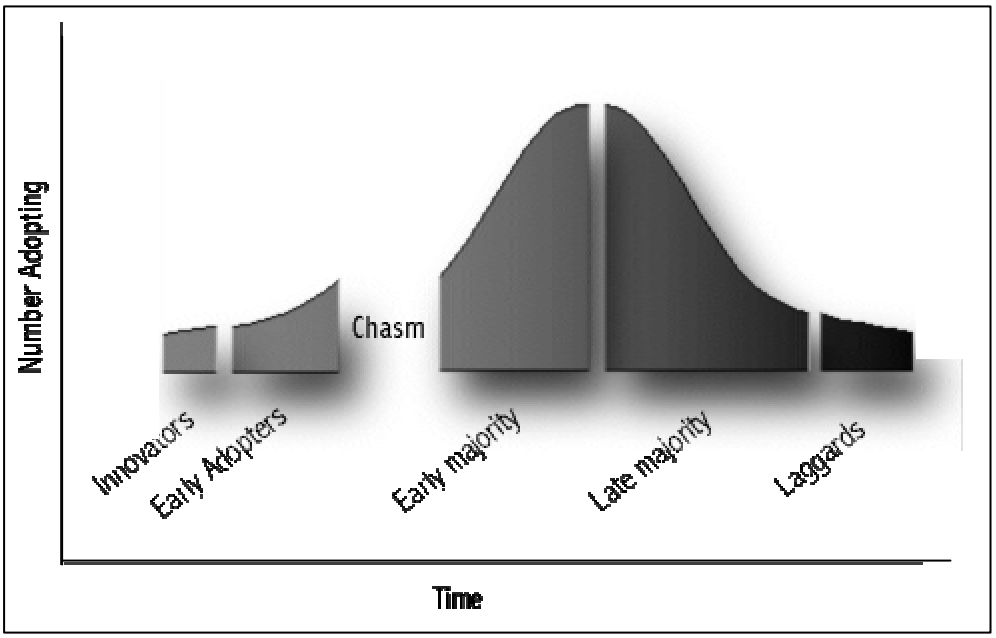

Figure 3.7: The technology adoption life-cycle (Moore, 1991)

- ✓ Innovators: They are interested in and often use technology for its own sake. They can 'walk in the fog', without clear guides in terms of expectation or guidance Obeng (1996).
- ✓ Early adopters: They are quick to see the possibilities and advantages offered by new technologies and may often adopt technologies to better suit their own circumstances.
- ✓ Early majority: They are less likely to take chances, but are quick to see the value of new options and quickly adopt new initiatives. They are the first of the general market.
- ✓ Late majority: This is the biggest individual group and represents people less likely to change for the sake of change, but they will adopt once convinced that the change is not a passing fad. Some individuals may not like technology, but appear to appreciate the advantages offered by new innovations.
- ✓ Laggards: They will not use technology, but will often be able to list discrepancies between original technological claims and existing practice.

4.2.1 The chasm

A distinction can be made between the first two groups (innovators and early adopters) and the rest of the population (lead by the early) majority (Moore, 1991). This separation is called the chasm and represents the longer time period required to convince the latter grouping of the value offered by innovations. While the first groupings are willing to work on perceived benefit and promises, the latter groupings first wait for more clear indications and maturity of the innovations.

4.3 The media impact

Instructional technology is often associated with media (Heinich *et al*., 1986). Also there seems to be not only a link between the common medium of the day and society's view on knowledge, but also between the medium of the day and common cultural activities (Daniel, 1996). Therefore, as media changes over time, our view of knowledge and culture also changes. Table 3.9 below shows an adaptation of Daniel's (1996) representation of the interrelation between media, knowledge and culture. As can be seen in the lower right-hand cell, the modern digitally hyper-linked world we find ourselves in, is creating an information rich world, but because of the loss of linearity, this information still needs to be contextualised (Table 3.9).

Media	Knowledge	Culture
Oral Cultures	"You know only what you can recall"; Knowledge is dramatized, repetitive, concrete, situated, participatory, personal and historically fragile.	Intellectually conservative; prominence of ritual and story telling; wisdom associated with people.
Writing	Not restricted to human memory limitations; abstract; decontextualised; reproducible	Primacy of mind over emotions; competitive tradition.
Printing	Infinitely reproducible; objective and precise; inflexible; referenceable.	Scientific rationalism; development of highly refined linguistic/literary styles.
Radio/TV	Instantaneously accessible; soundbite sized; image based; passively absorbed; increasingly packaged and filtered.	Expects knowledge and opinions on tap; beginning to lose meaning in the data.
Global Hypermedia	Transient (digital); changeable; perspectivised; interlinked; open-ended; dynamic; public not private; breadth at the expense of depth.	Information rich; loss of linear modes of reasoning; loss of linear model of history.

Table 3.9: How media shapes knowledge (Adaptation from Daniel, 1996)

Wolfgang Grulke (2001) colourfully phrases this move away from structure with his rendition around the two deities, Horus (god of structure and predictability) and Seth (god of chaos and disorder) counceling a pharaoh (Fig. 3.8)

Figure 3.8: Horus and Seth (Grulke, 2001)

> *"We are the sons and daughters of Horus, but we live in the world of Seth*." *(*Grulke, 2001)

Yet in this world of Seth, the support staff need to support the academic staff in order for them to be able to deal with these changing environments.

5. Staff support/development

The issue of whether one should refer to the people to receive support as staff or as personnel is not addressed by dictionaries; they give similar descriptions for the two terms. In reaction to an e-mail enquiry to the Oxford English Dictionary and Language Service, the Associate editor replied as follows:

> *"I would say that 'staff' is the usual collective term for people who work full time for an organization. The word 'personnel' is more impersonal, and tends to be used where employees are*

> *treated as a subsection of 'resources'…To caricature the distinction rather broadly: those concerned with the welfare of employees might perhaps tend to talk of 'staff', while those concerned with the management of the business might be more inclined to talk of 'personnel'*." (Marshall, 2000)

Following on advice like this, the term 'staff' will be used in the context of support and development.

5.1 What is staff support ?

There are many definitions of staff development, but also a reasonable convergence of opinion. One generic definition is that of Brew (1995):

> *"Staff support in now recognized as one of the most significant vehicles for change in higher education. It has moved from the periphery to the centre, and is a key factor in strategic planning."*

Components of staff development include:

- ✓ Institutional policies, procedures and programmes;
- ✓ Mentoring;
- ✓ Professional development;
- ✓ Educational development; and
- ✓ Development of teaching and learning.

Most tertiary institutions have practitioners in this field and while titles often vary, they usually include words such as research, educational, academic, professional, faculty members, advisory teaching and learning (Webb, 1996).

Recent innovations call for a move beyond mere teaching and learning support towards a more comprehensive institutional developmental approach (Swain, 1999 and McKenna, 1999).

Piper as quoted by Webb (1996) argues for two models of support. Under an A model he makes a case for the more traditional forms of staff support including support for teaching and learning, 'academic' support and educational development.

The other model (B) becomes more management and policy orientated and supports ‘staff’ rather than the more narrow 'educational development’ role.

Three roles may be identified: Professional service, counselling and collegial interaction. The professional service suggests functions which could be compared to providing specialised services, such as audiovisual advice, technological delivery recommendations and curriculum alteration advice which could well be described as of "specialist technical" orientation.

The other two roles are that of counselling and collegial interaction. The role of counselling makes room for shared research into improved practice and holds the advantages of being non-threatening and closely related to the roles played by mentors and even colleagues in academia.

Collegial interaction advocates a more diverse approach where no specific role dominates.

> *"It is necessary to work flexibly and eclectically in order to respond to the unique demands of each situation. The skills, which need to be developed, are those of each of the practitioners described: both technical and interpersonal skills are necessary, and the practitioner’s presentation to the rest of the educational community needs to be that of a colleague and fellow academic. At particular times and for particular teachers, the practitioner may need to adopt one of these roles exclusively, but if any one of these approaches takes over completely, then the effective development is likely to be hampered."* (Baud and McDonald, 1991)

Fox's (1983) describes the growing theory which has developmental potential in the sense that staff make a significant contribution to their own learning in terms of pace, direction, objectives and process. This correlates with value of reflection as advocated by Shaw and Green (1999).

Within the growing theory the role of the academic developer has changed from being the sole specialist to being a guide that operates alongside the academic and provides assurance, guidance and cognitive scaffolding in terms of the context in which the learning is occurring (Johnston, 2000).

During such times of intellectual drift (see section 2.1), the need for support goes beyond technical expertise to a role of confidante and internal adviser as well as informed critic. These are key elements needed by modern lecturers and managers so quality cannot be merely managed, but needs to be nurtured by informed reflective practice (Barnette, 2000). This relates well to the role of mentor as discussed in section 5.2.

The need for support is not limited to junior staff. Senior faculty members are often involved in management -even management of economically competitive business units- while also having to participate in the guiding of the academic direction of their staff and faculties. Without proper support structures to assist them, it is hardly foreseeable that they would have the time or focused objectivity to identify weaknesses in current practice or identify niche potential within the academic environment.

5.2 Mentoring

Mentoring has been associated with education practice since the time of the ancient Greeks and is still an important element of the teaching and learning environment today.

> *"…and Medon said, "Hear me, men of Ithaca. Ulysses did not do these things against the will of heaven. I myself saw an immortal god take the form of Mentor and stand beside him. This god appeared, now in front of him encouraging him, and now going furiously about the court and attacking the suitors whereon they fell thick on one another*." (Homer, 800BC)

Manyard and Furlong (1993) describe three types of mentoring:

- ✓ **apprenticeship** where the experienced lead and advise the junior;
- ✓ **contributions** that add value to **competency and effectiveness**; and
- ✓ **reflective practitioner** where no specific distinction in terms of seniority is made, but where one might see a joint exploration of practice.

Without linking these functions to specific roles or models, there are some common functions to mentoring.

With the advent of new technologies, new questions must be asked and Woodd (1999) has raised the issue of whether the 'telementor' could still function within the same roles as the traditional mentor. In order to explore this issue Table 3.10 lists the more common functions as well as the researchers who have mentioned the function. The middle column contains an indication of the authors' opinions with regard to the suitability of the successful pursuit of the function via technology. While arguably the oldest form of staff guidance, mentoring is not the only option.

Key	Meaning
	Best approached via traditional methods
	Uncertain – Needs further investigation
	Could function well via electronic alternatives

Function	Approach	Mentioned by
Acceptance		Gibb and Megginson (1993)
Advice		Manyard and Furlong (1993)
Challenges		Woodd (1999)
Coaching		Manyard and Furlong (1993)
Confirmation		Gibb and Megginson (1993)
Counselling		Hamilton (1993)
Create opportunities		Woodd (1999)
Encouragement		Homer (800BC)
Friendship		Gibb and Megginson (1993)
Guidance		Manyard and Furlong (1993)
Motivation		Clutterbuck (1991)
Networking		Clutterbuck (1991)
Protection		Homer (800BC)

Table 3.10: Mentor functions and approaches

5.3 Further methodologies and approaches

The Australian government spent some $20million over 1997 –1999 on staff development programmes. These funds were mainly utilised via grants awarded for research (DETYA report, 2000).

Another very comprehensive effort is described by Brent *et al*. (2001). This time the size is not dependent on funds, but on the scope of the collaboration. SUCCEED (South-eastern University and College Coalition for Engineering Education) is a National Science Foundation-sponsored coalition between the following institutions:

- ✓ Clemson University;
- ✓ University of Florida;
- ✓ Florida A and M University;
- ✓ Florida State University;
- ✓ Georgia Institute of Technology;
- ✓ North Carolina A and T University;
- ✓ North Carolina State University;
- ✓ University of North Carolina; and
- ✓ Virginia Polytechnic Institute and State University.

The aim of the coalition is to scale up and institutionalise educational reforms by

- ✓ promoting proven instructional methods and materials;
- ✓ improving institutional support for teaching; and
- ✓ having a sustainable programme in place on each campus by the end of Year 10 (Brent *et al*., 2001).

The preliminary report warns against a simplistic approach to development.

> *"Rather than trying to define a "one-size-fits-all" faculty development model, we have attempted to identify key FD program elements that should be in place at each institution and offer examples of forms the elements might take." (Bent et al., 2001)*

A graphic representation of the model followed by SUCCEED is given in Figure 3.9.

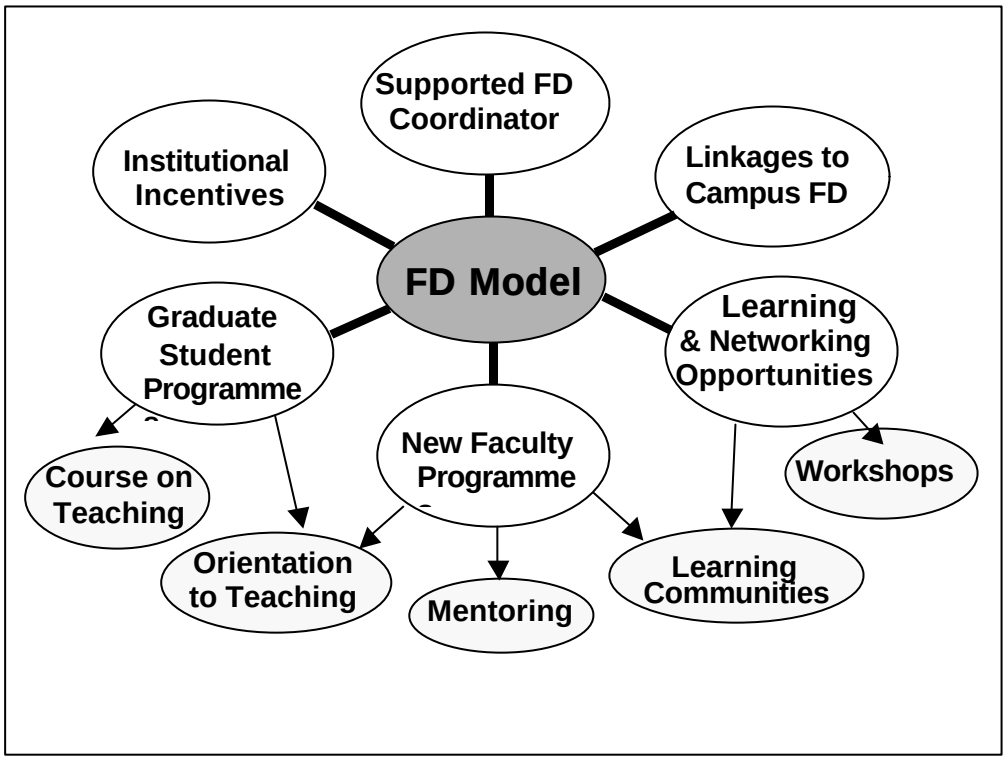

Figure 3.9: SUCCEED Faculty development (FD) model (Brent *et al*., 2001)

As can be seen in Figure 3.9 the various faculty development (FD) approaches do not on their own constitute a single generic system, but collectively make up the faculty development programme. While impressive and comprehensive, the value does not lie in the size of the roll out, but in the scope of the efforts. Size and co-ordination do not hold the key, but rather provide support when and where needed over a wide front.

> "*Cultures do not change when everyone is forced to do something at the same time. Cultures change when pockets of people find success and the word spreads*." (Werner, 2001)

At the same time the key to success could be with colleagues who are enthused rather than with those who are forced by line management (Zuber-Skerritt, 1992).

> "…*we believe that the main aim … should be to sustain a learning society*." (Shaw and Green, 1999)

Also;

> "*Don't look upward to senior management. Look sideways for the oddballs,, the experimenters, and the discontented. Think insurgency, syndicate, and community! Break down silos and build bridges to other groups. Be an ambassador, dealmaker, and networker*." (Werner, 2001)

Unless a unique context specific solution is proposed, staff members will not buy into the process. Really successful and popular changes did not come through big launches or institution wide adoption. Devices like fax machines and cell phones became popular because they solved real problems in the lives of real people. Similarly context specific solutions will prove popular in academia (Cannon, 1983; Werner, 2001).

> *"Just start telling people what's available. Show people a demo. Tell people what successes others have had, including competitors*." (Werner, 2001)

While no clear method for development seem evident, the eclectic approaches proposed call for context specific evaluation and selection of approaches to be pursued. The areas of development seem to focus on mainly three different aspects of Higher Education development. These are:

- ✓ Personal development – skills, attitudes, views and insight;
- ✓ Educational development – approach and process focus changes to learning facilitation; and
- ✓ Institutional development – structure and strategic guidance to maximise impact to maintain service levels.

(Berquist and Phillips, 1975; Cannon, 1983; McKenna, 1999; Werner, 2001)

6. Dynamics between change and staff support

While Berquist and Phillips (1975) contend that there are perhaps as many approaches to staff development as there are individual programmes, they do quote Goodwin Watson (1967) as saying that change is the central facet of staff development. Not only is development needed to support staff to cope with changes in their environment (Naidu and Steyn, 1999), but development also has change at heart as it strives to achieve modification in behaviour (Watson in Berquist and Phillips, 1975).

The rate of change will just increase. Speculation about the growth of the private education initiatives paint pictures of doom and some fear the tidal wave of continual change. Grulke gives his solution:

> *"Build surfboards, an ark won't do!* (Grulke, 2001)"

Grulke's slogan warns that fortification will not be sufficient, and that one can deal with more when armed with applicable skills. The acquisition of necessary skills is not something all individuals can do for themselves.

Not all people prefer to live with the same amount of uncertainty in their daily tasks. Obeng (1996) identified four types of people based on their abilities to deal with open processes in terms of knowing what to do and how to do it (Table 3.11)

Type	**Know what to do**	**Know how to do it**	**Metaphorical comparison**
Adaptor	Yes	Yes	Colour by numbers
Pioneer	Yes	No	Going on a quest (Killing the dragon!)
Craftsman	No	Yes	Making a movie
Innovator	No	No	Walking in the fog

Table 3.11: Change preference (Adaptation from Obeng, 1996)

This idea could also be depicted graphically (Figure 3.10). Each quadrant holds a corresponding people type.

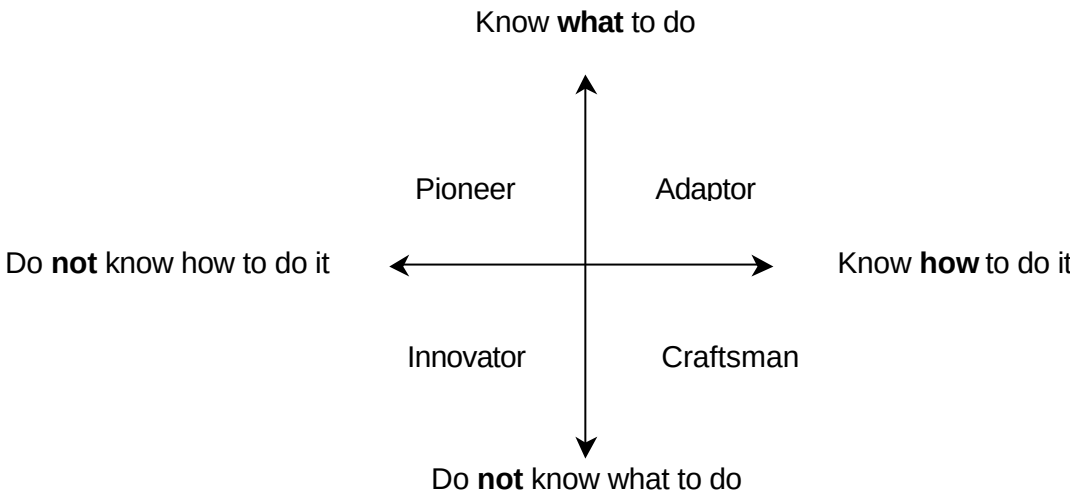

Figure 3.10: Types of people according to change preference

While it can be argued that the innovators have the ability to build surfboards on their own, the same cannot be said of Adaptors. The point being that just as different approaches are called for to address staff development in various circumstances, so the existence and rate of change will also contribute to a scenario where different individuals may need different types of support as a result of their unique reactions to the changes around them.

Managers are often not equipped to deal with support issues themselves.

> *"There was a clear desire to inspire and motivate staff through creating an environment of development, if not learning. However, the managers surveyed were confused as to how they could do this in the context of the complexity within which they operated*." (McKenna, 1999)

The rate of change will continue to excel and this complexity will create an exceedingly impossible task. In his book *Ten Lessons from the future* Wolfgang Grulke expresses this opinion:

> "*Machines too complex to understand, networks too complex to manage, organizations too demanding to lead, customers too demanding to satisfy*." (Grulke, 2001)

Staff development practitioners should be proactive. Not only in order to prepare for change, but also in order to be responsive and to promote change (Bryant *et al*., 1999).

7. Staff development and Information technology

Technology can be used as:

> *"…a 'learning tool' to deal with the 'new' world of work developing in the 'communications industry'*." (McKenna, 1999)

However, promising the possibilities seem, this is not a mere instance of role-out and watch as satisfied users learn on-line.

> *"Research … showed that there was clear need for support in the process of designing or redesigning courses in order to take advantage of the opportunities provided by learning technology*." (Oliver and Conole, 2000)

While their warning is meant to indicate student learners, such instructional design needs are still relevant. Some may look at availability of technology to provide solutions (Shih and Sorcinelli, 2000), but increased time commitment and lack of money were the top *barriers* to electronic delivery of education as identified by Berge and Muilenberg (2000). Simplistic solutions consisting of throwing technology at problems do not have a realistic chance of succeeding:

> *"…But where most politicians see the problem as one of access to computers and the Internet, a growing number of leaders in higher education see it more as an issue of literacy — information literacy*." *(*Breivik, 2000)

This issue is more fully reviewed in Chapter Five.

In the traditional trade-off between a fully flexible conceptual framework that gives little (if any) support to users on the one hand and a rigid, fixed structure of a fully automatic system on the other hand, there is an inversely proportional relation. Any type of automation built into staff development will limit its applicability:

> *"The potential for using open learning and distance education for staff development is considerable*." (Brew, 1995)

While the advantages of technological intervention are echoed by Norman (1993), he qualifies his optimism:

> *"The technology for creating things has far outstripped our understanding of them."* (Norman, 1993)

Accordingly it is not advisable to opt for stand-alone, automated, self-guided staff development interventions. This study explores the reasons for this statement in Chapters Four and Five.

In the flexible and varied world of academia, the use of 'toolkits' provides an alternative which could well add value.

> *"Toolkits are a specialist type of resource that fall between conceptual frameworks and automated software tools. Because of this position, they are ideally suited to supporting decision-making processes*." (Oliver and Conole 2000)

Research has proved toolkits to be valuable and useful, but they are not yet used as core approaches.

> *"[These] tools currently remain outside mainstream procedures*." (Oliver and Conole, 2000)

This links up with reports from a study by the Masie group, where over 2000 participants indicated that they preferred human involvement (Masie, 2000).

8. Conclusion

The separate issues involved in this study have been explored and discussed by various authors. The exact combination of change, higher education staff development and technology has however not been addressed.

Existing literature indicates a variety of possibilities, but does not indicate consensus in terms of either specific staff development approaches, the applicability of technological solutions or indeed the priority of intervention.

In the next chapter this study turns to staff development practitioners active in the field. Their views are considered and incorporated to inform on this specific context and combination of interests in order to explore the potential and possible applicability of suggestions from this study.