

**From introduction to institutionalisation: the process of establishing
new teaching & learning methodologies in
vocational education and training**

by

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DECLARATION

I declare that *From introduction to institutionalisation: the process of establishing new teaching & learning methodologies in vocational education and training* is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

Alison Mead Richardson

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SUMMARY

As new teaching and learning technologies begin to challenge the boundaries between time and place, distance and elearning are becoming mainstream approaches to increase access and improve quality in post-secondary education. Educators and educational managers are being challenged by the need to manage technology integration within institutions and within education systems.

In 2007, the Government of Botswana established a new technical college with the specific mandate to expand technical and vocational education and training (TVET) provision by introducing distance and elearning programme delivery. This thesis reports on the findings of a case study undertaken during the first two years of the life of the college. The study aimed to identify the organisational structures and change processes needed for the successful implementation of distance and elearning and to discover how these structures and processes can be best managed.

The field work was carried out within an interpretive paradigm in a longitudinal case study over 30 months. The approach was ethnographic and the data collection methods included documentary analysis and participant observation. Focussed interviews were carried out with a purposive sample of key respondents in order to further explore observations.

Different theoretical and practical models of technology integration were investigated and the MIT 90s model was considered to be the most applicable and pragmatic. Theories of organisational change were researched to help understand the process. Lewin's seminal work on field theory, group dynamics and the 3-step change model with the notion of driving and restraining forces on change gave a framework against which to analyse the process of change.

The findings detail a change process which features a lack of preparation, perceived lack of management commitment by staff and poor timing in a top down approach to introducing distance and flexible learning. The findings show how an external group of change agents working as technical experts within clearly defined policy objectives and facilitating extensive staff development, were an insufficient driving force for change against the restraining forces of a bureaucratic organisational culture, strong mental models of traditional teaching and perceived lack of leadership.

KEY TERMS

Change management; distance learning; elearning; Botswana; technical and vocational education and training (TVET); interpretive; case study; bureaucracy; organisational culture; diffusion of innovation:

TABLE OF CONTENTS

DECLARATION	ii
ACKNOWLEDGEMENTS	iii
SUMMARY	v
KEY TERMS	vii
LIST OF FIGURES	xv
APPENDICES	xv
ABBREVIATIONS AND ACRONYMS	xvi

CHAPTER ONE INTRODUCTION AND PROBLEM STATEMENT

1.1	INTRODUCTION	1
1.1.1	Aim of the study	3
1.1.2	Choice of Research Study	3
1.2	PROBLEM STATEMENT	5
1.2.1	Motivation for the research	5
1.2.2	Research questions	7
1.2.3	Choice of location and rationale for research	7
1.3	RESEARCH METHODOLOGY	8
1.3.1	Researching a process	9
1.3.2	Longitudinal case study	9
1.3.3	Strengthening claims to validity	10
1.3.4	Framework for the study	10
1.3.5	Claims for generalisation	11
1.4	ASSUMPTIONS	13
1.5	LITERATURE REVIEW	13
1.6	CONCEPT DEFINITIONS	14
1.6.1	Change agent	15

1.6.2	Distance learning	15
1.6.3	Diffusion of innovation	16
1.6.4	eLearning	16
1.6.5	Flexible learning	16
1.6.6	Information and Communications Technology (ICT)	17
1.6.7	Innovation	17
1.6.8	New teaching and learning methodologies	18
1.6.9	Technical and Vocational Education and Training (TVET)	18
1.6.10	Tertiary Education	18
1.7	ORGANISATION OF THE THESIS	19
1.8	SUMMARY	20

CHAPTER TWO THE EXTERNAL ENVIRONMENT OF THE CASE STUDY

2.1	INTRODUCTION	22
2.1.1	Documentary sources	22
2.2	NATIONAL SOCIO-ECONOMIC CONTEXT	25
2.2.1	History and development of TVET in Botswana	28
2.2.2	General education context and the post-secondary access challenge	29
2.2.3	Financial environment – government spend on education	31
2.3	NATIONAL EDUCATIONAL POLICY CONTEXT	32
2.3.1	National Commission on Education (NCE) 1993	33
2.3.2	National Development Plans	33
2.3.3	Revised National Policy on Education 1994	35
2.3.4	National Information & Communication Technology (ICT) Policy & Strategy	36
2.4	ICT STRATEGY AND IMPLEMENTATION INITIATIVES – TECHNOLOGY ENVIRONMENT	37
2.4.1	Government Skills Strategy and Implementation Initiatives	39
2.4.2	Establishment of Regulatory Bodies	39
2.4.3	Development of a national elearning strategy	41
2.5	DEVELOPMENT PARTNER ENVIRONMENT	43

2.6	REFORM OF THE GOVERNMENT VET SYSTEM	45
2.7	THE ESTABLISHMENT OF FRANCISTOWN COLLEGE OF TECHNICAL AND VOCATIONAL EDUCATION	46
2.8	THE INFLUENCE OF GLOBALISATION ON TVET IN BOTSWANA	47
2.9	CONCLUSION	48

**CHAPTER THREE
ORGANISATIONAL CHANGE FOR INTRODUCING NEW TEACHING AND
LEARNING METHODOLOGIES**

3.1	INTRODUCTION	51
3.1.1	Research in new teaching and learning technologies	53
3.2	ORGANISATIONAL CHANGE IN EDUCATION	54
3.3	MODELS OF TECHNOLOGY INTEGRATION	55
3.3.1	Khan – 8 Dimensions	55
3.3.2	Collis and Moonen 4E model	55
3.3.3	Jones – PESTER	56
3.3.4	McNaught and Kennedy	56
3.3.5	Stiles and York	57
3.3.6	Scott Morton – MIT 90s model	57
3.4	CHANGE THEORIES	60
3.4.1	Kurt Lewin – Field Theory, Group Dynamics & the 3-Step Change Model	60
3.4.2	Fullan – Change Forces	62
3.4.3	de Freitas and Oliver	62
3.5	FACTORS AFFECTING ORGANISATIONAL CHANGE	63
3.5.1	Role of vision and mission statements	64
3.5.2	Leaders’ commitment to change	66
3.5.3	Capacity building	67
3.5.4	Time factors	68
3.5.5	Teachers’ rewards and recognition	69

3.6	DIFFUSION OF INNOVATION	71
3.6.1	Characteristics of innovation	71
3.6.2	Categories of adopters	72
3.6.3	The concept of ‘chasm’ between early adopters and the early majority	72
3.6.4	Paradigm shift	73
3.6.5	Teachers’ mental models	74
3.6.6	Change agents	74
3.6.7	Importance of communication	76
3.7	APPROACHES TO CHANGE	77
3.7.1	Need for middle-out approaches	78
3.8	ORGANISATIONAL CULTURE AND BUREAUCRACY	80
3.8.1	Organisational culture and change	80
3.8.2	Bureaucratic culture and structure	82
3.9	THE ENTERPRISE CULTURE AND ORGANISATION	86
3.10	CONCLUSION	87

CHAPTER FOUR RESEARCH METHODOLOGY

4.1	INTRODUCTION	89
4.1.1	Literature Review	90
4.2	RESEARCH PARADIGM	90
4.2.1	The research questions	91
4.3	SELECTING THE RESEARCH APPROACH	92
4.3.1	Qualitative, naturalistic enquiry	92
4.4	RESEARCH STRATEGY	94
4.4.1	Flexibility in research design	95
4.4.2	Assumptions	95
4.4.3	Longitudinal case study	96
4.5	ETHICAL CONSIDERATIONS	98

4.5.1	Overt and Covert Research	99
4.5.2	Anonymity, confidentiality and protection	102
4.6	RESEARCH METHODS SELECTED	102
4.6.1	Data collection methods considered and rejected	103
4.6.2	Documentary analysis	104
4.6.3	Participant observation	105
4.6.4	Sampling	106
4.6.5	Interviews	106
4.6.6	Data Analysis	108
4.7	CONSTRAINTS ON THE RESEARCH METHODS	108
4.7.1	Reflexivity	109
4.7.2	Sample mortality	110
4.7.3	Critical incidents and weight of data	110
4.7.4	Reliability & Validity	112
4.8	SUMMARY	113

CHAPTER FIVE PRESENTATION OF FINDINGS AND EMERGING CONCEPTS

5.1	INTRODUCTION	114
5.1.1	Research questions	116
5.2	PROCESS OF INTRODUCING NEW TEACHING AND LEARNING METHODOLOGIES	116
5.3	NATIONAL POLICY GUIDANCE	118
5.4	STRATEGY FOR OPERATIONALISING THE NEW COLLEGE	120
5.4.1	The main actors in the case study	121
5.4.2	A model for introducing new teaching and learning methodologies	122
5.4.3	Phases of the Technical Assistance Project	124
5.5	PHASE 1: CRITICAL EVENTS AND CONCEPTS EMERGING JULY 2006 – MARCH 2007	124

5.5.1	Communication regarding the new mandate of the college	126
5.5.2	Position of new mandate in relation to college opening	127
5.5.3	Developing vision and mission for FCTVE	128
5.5.4	Concern for resource availability	131
5.5.5	Impact of action from Ministry Officials	132
5.6	PHASE 2 : CRITICAL EVENTS AND CONCEPTS EMERGING APRIL 2007 – DECEMBER 2007	134
5.6.1	Teachers’ mental models and the concept of flexibility	136
5.6.2	The Role of Change Agents	144
5.6.3	Approaches to change	146
5.6.4	The effect of bureaucracy at FCTVE	151
5.6.5	Performance based rewards	153
5.6.6	The impact of national culture on change processes	155
5.6.7	Identification of barriers to the introduction of flexible learning	157
5.6.8	Commitment of Ministry officials to change	163
5.6.9	Development of FCTVE Strategic Plan	170
5.7	CRITICAL EVENTS AND CONCEPTS EMERGING JANUARY – JUNE 2008	172
5.7.1	Establishing an organisational structure and strategy for change	173
5.7.2	Integrating flexible learning into college systems	175
5.7.3	Collaboration with other distance teaching organisations	184
5.7.4	Timing of the reform	187
5.8	CRITICAL EVENTS AND CONCEPTS EMERGING JULY – DECEMBER 2008	190
5.8.1	Progress with implementing flexible learning	190
5.8.2	Human and physical resources for distance and elearning	192
5.8.3	Staff turnover	194
5.8.4	Perception of college managers within the change process	195
5.9	SUMMARY	197

CHAPTER SIX CONCLUSIONS AND RECOMMENDATIONS

6.1	INTRODUCTION	201
6.2	FACTORS AFFECTING IMPLEMENTATION OF NEW TEACHING AND LEARNING METHODOLOGIES	203
6.2.1	Input from policy officers	203
6.2.2	Vision and strategic planning for the reform	205
6.2.3	Appropriate timing	206
6.2.4	Dominant organisational structure and processes	207
6.2.5	Organisational structure and culture	209
6.2.6	Alignment of relevant policies and processes	211
6.2.7	Mental models of teachers and managers	211
6.2.8	Leadership and management	213
6.3	RECOMMENDATIONS	214
6.3.1	Leaders with shared vision	214
6.3.2	Revise conflicting policies	215
6.3.3	Strategic resourcing	215
6.3.4	Staff development and capacity building	216
6.3.5	Organisational structures	216
6.3.6	Need for new roles	217
6.3.7	Link innovative behaviour to recognition and reward systems	217
6.3.8	Appropriate timing	218
6.3.9	Omni-directional change approach	218
6.3.10	Support entrepreneurialism in colleges	218
6.4	CLAIMS TO GENERALISATION	219
6.5	LIMITATIONS OF THE STUDY	220
6.6	FURTHER RESEARCH	221
6.7	CONCLUDING REMARKS	222
	REFERENCES	224

LIST OF FIGURES

Figure 1.1	MIT 90s model of technology integration with additional policy and strategy environment	11
Figure 2.1	MIT 90s model (Scott Morton 1991)	23
Figure 2.2	Environmental context for introduction of new teaching and learning methodologies	25
Figure 3.1	Khan eLearning Model	55
Figure 3.2	Collis and Moonen 4E	55
Figure 3.3	Culture-policy-support model	56
Figure 3.4	MIT 90s model of technology integration with additional policy and strategy environment	58
Figure 3.5	Lewin's Force Fields of Change (Lewin 1951)	61
Figure 4.1	Hierarchy of approval for the research	101
Figure 4.2	Reflexive screens in research: Adapted from Patton 2002:66	109
Figure 5.1	Broad process of introducing new teaching and learning methodologies	117
Figure 5.2	Main actors in the FCTVE technical assistance project: Project Inception Report (Christensen 2006)	122
Figure 5.3	MIT 90s model of technology integration with additional policy and strategy environment	123
Figure 5.4	Driving and restraining forces for change at FCTVE	140
Figure 5.5	Excerpt from the TA Team 6th Quarterly Report	164
Figure 5.6	PowerPoint summary of FLSWG strategy, January 2008	173
Figure 5.7	List of challenges identified during a management workshop	178
Figure 5.8	The knowing-doing gap (Angehrn 2004:3)	191
Appendices		
Appendix 1	Research Permit	244
Appendix 2	Informed Consent Form	245
Appendix 3	List of persons interviewed	247

Abbreviations and Acronyms

BBC	British Broadcasting Corporation
BOCODOL	Botswana College of Distance and Open Learning
BOTA	Botswana Training Authority
BTEP	Botswana Technical Education Programme
DFL	Distance and Flexible Learning
DTVET	Department of Technical and Vocational Education and Training
DVET	Department of Vocational Education and Training (former name of DTVET)
EC	European Commission
EU	European Union
FCTVE	Francistown College of Technical and Vocational Education
GoB	Government of Botswana
FLU	Flexible Learning Unit
ICT	Information and Communication Technology
IT	Information Technology
MIT 90s	Massachusetts Institute of Technology 1990s research programme
MoE	Ministry of Education
NCE	National Commission on Education
NDP	National Development Plan
NELSCOM	National eLearning Steering Committee
NPVET	National Policy for Vocational Education and Training
PTEO	Principal Technical Education Officer
ODL	Open and Distance Learning
QAA	Quality Assurance Authority
RNPE	Revised National Policy on Education
TA	Technical Adviser
TEC	Tertiary Education Council
ToR	Terms of Reference
TVET	Technical and Vocational Education and Training
UB	University of Botswana
UN	United Nations
VET	Vocational Education and Training

CHAPTER ONE

INTRODUCTION AND PROBLEM STATEMENT

1.1 INTRODUCTION

As new teaching and learning technologies begin to reduce the boundaries between time and place, distance and elearning are becoming mainstream approaches for increasing access and improving quality in education. A World Bank report on distance learning and ICT in Africa suggests “*The potential for distance education to help improve educational quality and access is becoming more recognized and funded in Africa as new initiatives are developed and adapted*” (Murphy, Anzalone, Bosch & Mouton 2002:44). Educators and educational managers are being challenged by the need for change management within their institutions and within their educational sub-system. This is particularly true of technical and vocational education and training (TVET) which reflects a complex relationship between government, employers, institutions and citizens.

More than ever before, technical and vocational education and training institutions need to respond to changing internal and external pressures such as increasing demands of students and employers for relevant, technology-integrated education, staff capacity building and infrastructure development. There is pressure to improve access and efficiency, whilst at the same time maintaining quality standards. Information and communications technologies (ICTs) used in flexible and blended approaches to programme delivery have been identified as one innovation which may assist TVET in meeting the responsibility placed upon it to contribute to national development. The World Bank has noted that ICTs hold a vast potential for skills development and “... *raise the hope that Sub-Saharan Africa can leapfrog several stages in the development process to spread high-quality training widely at low cost*” (Johanson & Adams 2004:84). In order to meet these demands changes in organisational structures and

management strategies are required. It is essential to study these change processes in order to learn how to introduce new teaching and learning technologies most effectively. Botswana is one of Africa's success stories. Following Independence in 1966, the country has been transformed from one of the least developed countries, with 90% of the population subsisting in drought-prone agriculture and a per capita income of about US\$80, into a middle-income country, with 50% of the labour force employed in formal sector activities, and a per capita income estimated in 2004 at US\$ 3,451 (GoB 2007a). Such a rapid transformation indicates that the government provision of technical and vocational education in Botswana is in a fast-changing phase which will need careful management if it is to meet the increasing demand.

Over the past 15 years, the Government of Botswana (GoB) has successfully introduced distance education into the tertiary and secondary education sectors through two publicly-funded parastatals, the University of Botswana and the Botswana College of Open and Distance Learning (BOCODOL) who offer degrees and secondary equivalency programmes, respectively. Distance education is also used for primary teacher upgrading through a partnership between the Ministry of Education and Skills Development, the University and the Colleges of Education. In order to meet the needs of learners and government to increase access to education, both institutions are experimenting with elearning and BOCODOL is expanding its programmes to include vocational and higher qualifications. So far, technical and vocational education and training (TVET) provision by the government has only been by conventional face-to-face educational methods through six technical colleges. In 2007 and in cooperation with the European Union, the Government of Botswana opened a seventh technical college in Francistown with the specific mandate to expand TVET provision by launching higher level qualifications and introducing distance and flexible delivery methods into the Botswana Technical Education Programme (known as BTEP).

This study investigates how the Department of Technical and Vocational Education and Training (DTVET), in partnership with the European Union Delegation to Botswana, through the Francistown College of Technical and Vocational Education (FCTVE),

attempted to implement government policy aims of increasing access to TVET through the introduction of distance and elearning.

1.1.1 Aim of the study

The research attempts to identify the process by which the development towards distance and elearning takes place at Francistown College of Technical and Vocational Education from the perspective of the people involved. The process is an interaction between the Ministry officers and policy advisers in the Department of Technical and Vocational Education and Training in Gaborone and the college staff, managers and advisers in Francistown. As will be discussed in Chapter Four on methodology, the research took an interpretive, ethnographic approach which Patton describes as particularly suited to the study of process (Patton 2002:159). This was a real-world situation which required a multi-disciplinary study, drawing on literature and research findings from sociology, education and management.

1.1.2 Choice of Research Study

The introduction of new teaching and learning technologies in tertiary education has been a popular research topic in both developed and developing nation contexts for more than 35 years. Since the UK Open University formed a partnership with the national broadcaster – the BBC – in the 1960s and introduced educational broadcasting into high quality, accredited programmes leading to national qualifications, the use of different technologies in teaching and learning has inspired much research activity (Bates 2005:97). The study of how technology use diffuses within an educational context has gained increasing attention (Rogers 1999; Uys 2000; Collis & Moonen 2001; Romiszowski 2004; Luckin, Shurville & Brown 2006; Stiles & York, 2006; Jones 2008). *“Diffusion is an important concept in sociology as enquiry seeks to explain the processes by which social practices flow amongst actors within a social system”* (Strang & Meyer 1993:487). The most renowned theory of diffusion of innovation was proffered by Everett Rogers first in 1962 and more recently in 2003 and this is reviewed in the literature chapter.

This is the first attempt of the Government of Botswana to introduce distance and elearning into the technical and vocational education and training (TVET) system but this is likely to be an increasingly important educational strategy for the future. It is important that the process of implementation, within the Botswana context, is studied to inform good practice for the future. Bates notes that *“government has a critically important role to play with respect to planning and managing the development of elearning in post-secondary education and training”* (Bates 2001:29). One of the roles of government in managing technological change is as a stimulator of *best practice*. It is intended that this study will inform the Government of Botswana, more specifically the Department of Technical and Vocational Education and Training (DTVET), and facilitate a better understanding of this process in TVET colleges. An ethnographic study of this process of change was chosen because of the importance of the experience of the people involved and the interpretive approach of ethnography enabled theory to emerge as the field work progressed. A detailed case study of the change process involved in the introduction of new teaching and learning technologies at FCTVE will inform DTVET and other stakeholders about the conditions for success and enable them to strengthen planning and resourcing activities and support provided to college managers.

This study is of particular importance in the current management context of technical colleges. It is proposed that during the next national development cycle (NDP 10), all tertiary institutions will become parastatals under the newly formed Tertiary Education Council. This means that colleges will be able to generate their own income by offering tailor-made courses. This opens up the possibility of a much wider provision of technical and vocational programmes which can be designed to meet the needs of specific target groups. Distance and flexible learning will increase the capacity of technical college staff to do this.

1.2 PROBLEM STATEMENT

The relationship between policy and how this is translated into action in institutions is sometimes a precarious one and even where there is an accepted culture of ‘top-down’ management, a strong policy framework can still take a long time to transform into change at the institutional level. Wright, Dhanarajan and Reju point out, *“Government and institutional personnel in developing countries often decide to employ e-learning or online learning without fully realizing what it means for their students and their institutions”* (2009:2). A lack of vision, knowledge and appreciation of ICT in top governmental structures was also identified by Naidoo and Schutte (1999) in their study of virtual institutions in Africa. The lack of understanding of the management implications of policy implementation was a key finding of the FCTVE case study.

The problem is one for TVET policy makers and institutional managers. How to successfully institutionalise the use of new teaching and learning technologies? Having done this in a pilot institution, what lessons and best practise can be emulated effectively throughout the TVET subsector? This research sets out to achieve three objectives: first, to develop a method of research practice to study the development of a process as it proceeds; second, to explore change management processes and strategies in this pilot case and third, to identify a set of guidelines for institutionalising distance and elearning into TVET which may be used across the government system.

1.2.1 Motivation for the research

The importance of the study of organisational change in educational technology has been noted by researchers. Trucano states that there is a lack of research focus on the impact of new technologies in support of national development goals which can inform policymakers (Trucano 2005). Guri-Rosenblit and Gros (2011) argue that research into new technologies is characterised by large gaps – particularly at the institutional and system-wide level where more rigorous research is required. In their analysis of how policy on flexible delivery in TVET in Australia gets translated into practice, Trood and Gale (2001) in Australia (2001) and de Freitas and Oliver (2006) in the UK, call for more

case study research to understand the process of diffusion of innovation in the educational context. Other researchers accuse distance education research of being highly descriptive and biased towards pedagogy and failing to study aspects of organisation, management of change, innovation and technology (Zawacki-Richter, Bäcker & Vogt 2009; Perraton 2000).

There is a need to continuously learn about how to make education more efficient and more effective. This includes not only the delivery of educational programmes and the associated quality criteria – but also, and of equal importance, the organisational and management structures upon which that delivery is based. Educational managers must continuously research best practice in order to add to their own and the systemic knowledge base. This single case study aims to add to that knowledge base, primarily for the Ministry of Education and Skills Development in Botswana.

Lofland, Snow, Anderson & Lofland (2006:28) pose an interesting pair of questions which the ethnographer is advised to consider: “*First, should this particular group, setting, situation or question be studied by anyone?*” and if the answer to this is ‘yes’, then the next question is “*Second, should this group, setting, situation or question be studied by me?*” The answer to the first question is an unequivocal ‘yes’. This is an important area for study in the development of distance and elearning in TVET in Botswana as it is the pilot case for the Department of Technical and Vocational Education and Training. The answer to the second question is more complex and requires consideration of a range of ethical research issues. At a broad level, the researcher could claim a legitimate role in the study as a participant observer. Gaining access to a research situation can sometimes be problematic – particularly for an ethnographer (Lofland *et al* 2006).

This case study aims to be descriptive in its examination of the new TVET college and the phases of its establishment. It also, of necessity, draws upon other fields to locate development of the new college and the experiences of the various participants across the phases of establishment. The case study, as shown in Chapter Two, locates the

establishment of the college within the socio-economic milieu as well as within a technological and policy framework.

1.2.2 Research questions

The research questions are based on the problem statement. The purpose of the study is to investigate factors which affect the process of institutionalising new teaching and learning technologies in a new government technical college. The concept of the learning organisation suggests that the organisation cannot change unless the individuals within it change their thinking and practice (Senge 2006:12). The research aimed to study how and why teachers and managers change their practice of managing and teaching. Organisational management issues were explored to identify the changes needed to institutionalise the new teaching and learning technologies.

There are two main research questions regarding the implementation of distance and elearning in the context of the Botswana government TVET system:

1. What organisational structures and change processes are necessary for successful implementation of distance and elearning in the context of the Botswana government TVET system?
2. How are these structures and processes best managed in this context?

1.2.3 Choice of location and rationale for research

The researcher was contracted as a member of a team of advisers – known as the Technical Assistance or TA Team – to the Department of Technical and Vocational Education and Training (DTVET) stationed at Francistown College of Technical and Vocational Education. The project purpose was “*Increased effectiveness and capacity of the TVET system in Francistown and outreach centres*” according to the Terms of Reference for the Provision of Technical Assistance. The mandate of the TA Team was to “*develop policies, structures, systems, learning platforms, learning objects and programmes in relation to the development of elearning, distance learning and blended learning programmes*” (Christensen 2006). Collectively these educational approaches came to be known as flexible learning amongst the participants in the process. It was

important to the Team that there should be effective skills transfer in order that the new programmes would be sustainable.

1.3 RESEARCH METHODOLOGY

The research context defined the most appropriate methodology for undertaking the study. Because the researcher was a participant in the phenomenon under study, an ethnomethodological approach which relied on participant observation was considered appropriate. As will be discussed in Chapter Four where the research design is elucidated, the study followed an interpretive approach, within an ethnomethodological perspective. The aim was to focus on participants' experience. The introduction of new teaching and learning technologies at FCTVE was essentially a naturally-occurring experiment and the aim was to find out what people did to make sense of the situation.

The research approach was selected because of the researcher's belief that the social world can be best understood through the participants involved. Flexibility in research methodology was important and the design unfolded as the fieldwork progressed. The theoretical approach suggested the initial focus, plans for observations and interviews and even some early questions, but the inductive nature of the enquiry made it inappropriate to produce testable hypotheses or have fixed ideas about data collection tools or population samples.

The study explores the use of systems theory as a framework for thinking about change management (Marquardt 2011; Senge 2006; Scott Morton 1991). According to Senge, *"... a systems approach provides a framework for seeing interrelationships rather than linear cause-effect chains, for seeing structures rather than events, for seeing patterns of change rather than snapshots"* (Senge 2006:68). The findings of the study contribute to the formulation of a model for implementing new teaching and learning technologies which may be applied throughout the Botswana TVET system.

1.3.1 Researching a process

The interpretive approach is particularly appropriate for the study of process. Approaching without a pre-determined hypothesis enables themes and issues to emerge from the fieldwork rather than from the hypothetical standpoint (Patton 2002:56). A process study focuses more on *how* something happens rather than on the outcome or results. “*The experience of process typically varies for different people so their experiences need to be captured in their own words*” (Patton 2002:159). Process takes place over time so it cannot effectively be studied at a single point in time and a longitudinal approach will be more revealing. The fieldwork took place over the first 30 months of the existence of the new college. The findings are presented in four time phases, delineated by critical events during the period of the fieldwork.

1.3.2 Longitudinal case study

A case study methodology was appropriate in this research context as the process being researched was a pilot activity for the Government of Botswana. The researcher carried out empirical inquiry to study a process in depth within a real-life context (Yin 2009). Case study research focuses on a single case but takes into account the influence of its social and other contexts, or systemic environment. We can see the individual case as a system. Some features of the case which are within the boundaries of the case but other important features may be outside the boundaries of the case but still within the system (Stake 2005). This case study takes the form of Merriam’s interpretive type or Yin’s explanatory type (Merriam 1988; Yin 2009). The ‘case’ in this study is Francistown College of Technical and Vocational Education.

A longitudinal study collects data contemporaneously rather than retrospectively which may improve the reliability of the data as respondents do not have to rely on their selective or false memory of occurrences. A longitudinal study enables change to be observed and recorded over time. Rebora and Turri, in a study of change management in universities, claim that “*there is widespread conviction that case studies are useful when studying change*” (Rebora & Turri, 2010:287).

1.3.3 Strengthening claims to validity

To increase the dependability of the data, a range of actions were undertaken such as respondent validation, triangulation, prolonged engagement in the field and identifying acceptable processes on conducting the enquiry so that the findings are consistent with the data. Triangulation of data collection methods is necessary in order to increase claims to validity (Lincoln & Guba 1985:108). According to Denzin (cited by Patton 2002:265) this is an omnibus field strategy in that it “*simultaneously combines document analysis, interviewing, direct participation and observation, and introspection*” (Denzin 1978:183).

As the researcher was an adviser to the college staff and a change agent in the phenomenon being studied, participant observation was selected as a suitable research method. In this interpretive study, the researcher notes the concept of the dangers of interpretation in research which is especially true across cultures. “*...what we call our data are really our own constructions of other people’s constructions of what they and their compatriots are up to*” (Geertz 1973:9). Reflexivity acknowledges that quantitative researchers are inevitably part of the social situation they are researching and unavoidably have views and interpretations of the meanings of that social situation. In qualitative research, the researcher is the research instrument (Patton 2002; Cohen, Manion & Morrison 2000). The issue of reflexivity is discussed in Chapter Five on research methods.

1.3.4 Framework for the study

The introduction of distance and elearning at FCTVE was largely guided by the team of Technical Advisers (TAs) and the framework they selected was that of the MIT 90s research group (Scott Morton 1991) as shown in Figure 1.1. This framework was considered appropriate because it links the four factors of strategy, technology, structure and skills and roles around the central management processes. Significantly, it also account for the impact of the external environment of the organisation in terms of technology and socio-economically. The researcher included an additional environmental factor of government education policy and strategy.

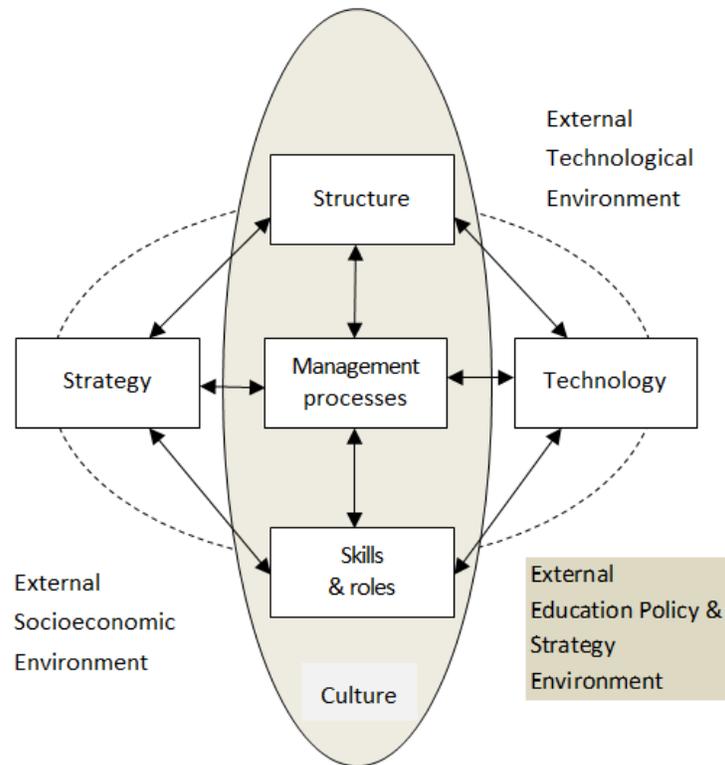


Figure 1.1: MIT 90s model of technology integration with additional policy and strategy environment

The MIT 90s model has been used by a variety of researchers and practitioners in an educational context, predominantly in Australasia (Yetton 1997; Holt & Thompson 1998; Uys 2000; Wills & Alexander 2000; Kearns 2004). The framework guided the thinking of the TA Team as they discussed with Ministry officers, college managers and lecturers how to introduce distance and elearning at FCTVE. The components of the framework formed the basis of the different activities undertaken by the participants.

1.3.5 Claims for generalisation

According to Patton (2002) it is possible to generalize case study findings, depending on the nature of the cases selected and studied. Single cases are not a strong base for generalising to a population of cases according to Stake (1995:85) but it is possible to learn from a single case. In the case study of FCTVE claims are made for generalization that the findings may equally apply in other government technical colleges in Botswana.

There is perceived to be a high degree of homogeneity in the structure and functioning of all seven technical colleges and the system culture is similarly set by DTVET. It is therefore valid to claim that the findings of the FCTVE case study would have applicability at the other colleges in the government system.

The study examines the organisational and management challenges faced by DTVET policy makers, college managers and teaching staff as they introduce distance and elearning at FCTVE. Organisational management at FCTVE developed from the existing model used in technical colleges – the model with which most staff, managers and policy makers were familiar and comfortable. This is essentially a bureaucratic, hierarchical form of organisational management, where innovation is rare and change happens through top-down approaches.

This study may be of value to other developing countries where mass-based models are being sought to expand access to education. Due to the successes of the focus on the goals for Millennium Development¹ and Education for All², most Africa countries are grappling with the question of how to increasing access to post-secondary education. New teaching and learning technologies using this flexible model may be the key to address this question where government technical colleges have a similar bureaucratic structure and top-down change processes are likely to be considered.

¹ Millennium Development Goals are the global development targets agreed in various world summits during the 1990s to promote poverty reduction, education, gender equality and health. <http://www.undp.org/mdg/>

² EFA – Education for All – an international commitment launched in Jomtien, Thailand, in 1990 to bring the benefits of education to all citizens. <http://portal.unesco.org/education>

1.4 ASSUMPTIONS

The choice of research methods was based on the assumption that understanding emerges most meaningfully from an inductive analysis of detailed descriptive data gathered through direct contact with participants. Specifically, assumptions were made that:

- conclusions could be drawn about the process of change by studying government policy documents, observing the actions of the people tasked with implementing those policies and discussing their actions with them
- meaningful information can be gained from the actors involved in the process through participant observation and semi-structured interviews
- an ‘inside-outsider’ researcher can observe and comment meaningfully on the process
- the study of a single case can be both intrinsically informative and sufficiently generalisable to similar cases in the same contextual system to inform future policy and practice in the use of new teaching and learning technologies in the Department for Technical and Vocational Education and Training.
- This last assumption is potentially very wide. There is a complex relationship between research and policy. According to Anderson and Biddle (cited in Cohen *et al* 2000:44) research does not feed directly or simplistically into policy-making.

1.5 LITERATURE REVIEW

The expansion of teaching and learning to include ICTs in more flexible approaches is a subject which has occupied the educational research community for nearly two decades. There is a plethora of research reports on different aspects of this transition. However, very little work was identified which focussed specifically on the TVET sub-sector. Naidoo and Schutte contend that “*There are some fundamental differences in the way in which educational change towards technology is approached and implemented between the more advanced countries and the developing countries*” (Naidoo & Schutte 1999:89). Almost no relevant literature sources were identified for Botswana. Therefore, this review has relied on reports of research carried out in other

educational sub-sectors and in other countries. The majority of the work comes from the higher education sub-sector in developed countries but it will be shown that the literature is relevant for review in this study.

In line with the interpretive approach, the key concepts emerged during discussions and interviews and were raised by the participants. A review of relevant literature is included in Chapter Three under the broad headings of the themes which emerged during the fieldwork. The literature is also discussed in Chapter Five which reports the findings of the empirical study. Taking this approach enabled the identification of significant concepts raised by participants rather than the researcher. A review of the literature was undertaken as these concepts became prominent. The literature review “... *plays a central part in supporting or challenging the claims to knowledge*” made by the research (Wallace & Poulson 2003:25). As the field work progressed, significant concepts and themes emerged and were then followed up by reviewing related research literature.

1.6 CONCEPT DEFINITIONS

In qualitative research it is particularly important to share definitions with the participants in the research. Definitions used in this research which were in common parlance at the college during the study, are given here. It was necessary to define some terms during interviews and informal discussions. Other definitions offered here are “*stipulative definitions*” (Wallace & Poulson 2003:10) which indicate the meaning attached to the definition by the researcher when using a particular term to aid understanding of this case study. Some definitions have been provided by the documentary sources as they give the accepted or official definition currently in Botswana.

It is imperative to be clear about the definition of each of these terms and this is problematic as there are many interpretations. This was an important issue not only for the research but also during the change process at FCTVE. The debate about the ‘correct’ definition of these key terms has raged long and hard in the distance education literature (Rumble 1989; Keegan 1996; Romiszowski 2004 Bates 2005). This research

does not attempt to present the 'correct' definitions. Rather than mine the literature for 'academic' definitions, the researcher has used here those definitions that exist within the current documentation of Botswana or those which were in use by the participants in the process. Some of these definitions were discussed and agreed at a DTVET Flexible Learning Workshop in August 2007. The definitions have been culled from various government policies and institutional working papers and training materials.

1.6.1 Change agent

The change agent is the person (usually external to the group or population) who brings expertise and tries to influence the population to adopt a product or practise. The initial definition was taken from the diffusion of innovation theory of Rogers, who states that the change agent is: *"an individual who influences clients' innovation decisions in a direction deemed desirable by a change agency"* (Rogers 2005:27). Later, this definition by Lunenburg from the management of change literature was found to be helpful, *"The individual or group that undertakes the task of initiating and managing change in an organisation"* (Lunenburg 2010:1).

1.6.2 Distance learning

Distance learning is an educational method – just as face to face is an educational method. Distance learning means that the student and the teacher are separated in time and space – for most of the time. This does not mean that learners never meet teachers, but the teaching and learning takes place through resources which may be selected from a number of media including print, audio/radio, video/TV, face to face, telephones, fax, mobile phones (mlearning) and computer based – with or without Internet access. At FCTVE the definition proposed by the South African Institute of Distance Education (SAIDE) was used: *"Distance education is a way of providing structured learning that involves the transfer to the student's location of the materials that form the main basis of study, rather than the student moving to the location of the resource. It uses a collection of methods to ensure that students are able to engage optimally with the curriculum and learn from, given their particular location, constraints and life circumstances"* (SAIDE 2003:5).

1.6.3 Diffusion of innovation

The study was interested in how change happened in the technical college – or how innovative approaches to teaching and learning diffused throughout the organisation. One of the best known researchers on the subject of diffusion of innovation is Everett Rogers. He defines diffusion as: “*A process in which an innovation is communicated through certain channels over time among the members of a social system*” (Rogers 2003:5) A more sociological definition is provided by Strang and Meyer: “*The socially mediated spread of some practice within a population*” (Strang & Meyer 1993:487).

1.6.4 eLearning

In a meta-study of elearning literature Romiszowski noted more than 20 different definitions of the term elearning (Romiszowski 2004:2). At FCTVE the definition of elearning was adopted from the National eLearning Steering Committee (NELSCOM) Feasibility Study Report to Develop a National Strategy for eLearning in Botswana “*The appropriate combination and use of information and communication technologies with other ways of learning to ensure effective learning*”

(Uys, Mead, Adam, Fouche 2004:3).

eLearning is a computer-based educational medium which can be used for both distance and conventional programmes. It is a special medium which provides increased opportunities for the educator to provide effective interactive learning experiences. eLearning requires additional infrastructure and technical support. eLearning can feature synchronous and/or asynchronous communication and may facilitate collaborative group working.

1.6.5 Flexible learning

Flexible learning is a more recent term which suggests a movement away from the vagueness of the term open learning (Keegan 1996:29). Flexible learning is an approach or a philosophy which uses different methodologies. It is an approach to educational provision which leans towards open learning with the focus on meeting

students' needs by being flexible. These needs might be for greater flexibility in assessment, application of accreditation or prior learning, programme start and end dates, decreased contact time, part-time or distance courses. Flexible learning implies that learners take greater responsibility for their learning. In the work at FCTVE, a definition used by the Australian Flexible Delivery Working Party was found useful, *"Flexible delivery is often defined as an approach to vocational education and training that allows for the adoption of a range of learning strategies in a variety of learning environments to cater for differences in learning styles, learning interests and needs, and variations in learning opportunities"* (Flexible Delivery Working Party, 1992:2).

The term flexible learning was adopted at FCTVE to encompass a range of different methods for presenting the BTEP programme. It included both distance and face-to-face provision – the latter of which followed a more 'blended' approach using different media, including elearning. The focus was on using the most appropriate technology for the subject content and the learning context.

1.6.6 Information and Communications Technology (ICT)

"ICTs consist of the hardware, software, networks and media for the collection, storage, processing, transmission and presentation of information (voice, data, text, images) as well as related services. Both traditional technologies (telephones, radio and TV) and newer technologies (computers and the internet) are usually included in the concept of ICT" European Union, Financing ICT for Development (2005:3).

1.6.7 Innovation

One definition for this key term is taken from Rogers, *"An innovation is an idea, practice or object that is perceived as new by an individual. It does not have to be new, as in, only just recently invented, the definition of innovation relies on whether the idea, practice or object is new to the individual"* Rogers (2003:12).

Perhaps a more useful definition is proposed by West and Farr (1990) cited by Stiles and York: *"...the intentional introduction and application within a role, group or*

organization of ideas, processes, products or procedures, new to the relevant unit of adoption, designed to significantly benefit the individual, the group, organization or wider society” (Stiles & York 2006:253). The aim at FCTVE was to develop a model for the introduction of an innovation in the form of new teaching and learning technologies and approaches in such a way that it would be replicable in other government TVET colleges.

1.6.8 New teaching and learning methodologies

In the context of FCTVE and this study, this phrase refers to methods of teaching and learning which are new to the staff and managers of the college and the system. It includes technologies and teaching approaches and how these are integrated. The phrase encompasses everything covered in the previous definitions of distance, flexible and elearning.

1.6.9 Technical and Vocational Education and Training (TVET)

Rumble and Moran identify that definitions are different around the world to describe “the acquisition of knowledge, skills and competencies for job performance” (Rumble & Moran 2004:3). FET – further education and training in South Africa and the UK; VET – vocational education and training in Europe. In Botswana, the accepted term in general use is ‘technical and vocational education and training’ or TVET although it is not used exclusively. The national policy statement uses the term vocational education and training (VET) (Government of Botswana 1997a).

1.6.10 Tertiary Education

In Botswana, tertiary education refers to all formal education programmes beyond senior secondary ranging from technical and occupation specific through to programmes with a strong theoretical foundation and advanced research qualifications. This definition was taken from a Tertiary Education Council presentation at the FCTVE Planning Workshop November 2006.

1.7 ORGANISATION OF THE THESIS

There are six chapters in this thesis:

Chapter One: Introduction and problem statement

This chapter introduces the study, presents the problem statement and outlines how the study was conducted. The research questions and framework for the study are given and stipulative definitions of key terms are presented.

Chapter Two: The external environment of the case study

This chapter analyses the socio-economic, technological and education policy context of vocational education and training in Botswana. The important aspect of development partner involvement in technical and vocational education in Botswana is explored. The contextual focus also looks at how distance learning has developed in Botswana and how the Government of Botswana developed policy to extend this method of teaching and learning into the TVET sector. These environmental aspects are part of the model used for understanding how and why the Government of Botswana featured distance and elearning in their policy and strategy for vocational education and training.

Chapter Three: Literature Review

As noted earlier, there is a dearth of literature relating to the introduction of distance and elearning in TVET and even less focussing on developing countries or Botswana. In the initial stages of defining the research questions, literature relating to technology innovation in teaching and learning in higher education institutions in developed countries was reviewed. The literature from Australasia was particularly rich. As concepts of organisational structure and culture and the change process arose during the fieldwork these were further researched in the literature to inform the study.

Chapter Four: Research methodology

This chapter describes the research design and methodology employed during the fieldwork to study the process of change as distance and elearning were introduced at FCTVE. This longitudinal case study took an ethnographic approach and employed a

range of qualitative methods including documentary analysis, participant observation and interviews. The chapter covers a discussion of ethical considerations and looks at the research constraints.

Chapter Five: Findings and emerging concepts

In this chapter, the findings of the fieldwork are presented and analysed. The inductive nature of this study led to the conceptual framework being developed from issues and concepts which emerged during the fieldwork. Twenty significant concepts emerged during observation fieldwork and explored in interviews with a purposive sample of participants. The focus areas for literature review were promoted by the qualitative data collected as the research progressed. The findings are presented in four chronological phases of the study.

Chapter Six: Discussion, conclusions, recommendations and further research

This chapter concludes the study by elucidating on the findings of the twenty critical issues which emerged during the fieldwork. Conclusions are then drawn about the process of introducing distance and elearning into the government TVET system in Botswana. Claims to generalization to the other colleges in the government TVET system and recommendations are made for improved implementation of distance and elearning in these colleges. Suggestions are made for further research in this field.

1.8 SUMMARY

This introductory chapter provides an overview of the need to study the change process involved in the introduction of distance and elearning into the government technical and vocational education and training system in Botswana. A qualitative, longitudinal case study carried out over 30 months at the Francistown College of Technical and Vocational Education in Botswana has been introduced. The aims of the study and research questions were described and key concepts defined.

In Chapter Two, the external environment of the college is considered and documentary evidence relating to socio-economic, technological and educational policy evidence which impacts on the case study.

CHAPTER TWO

THE EXTERNAL ENVIRONMENT OF THE CASE STUDY

2.1 INTRODUCTION

The establishment of Francistown College of Technical and Vocational Education (FCTVE) and the introduction of distance and elearning into the government TVET system was a response to national development strategy and policy objectives of increasing access to vocational education and training in support of socio-economic development. Before presenting the case study of the change process at FCTVE it is important to consider the external environment of the college. Daft contends that the external environment comprises the “...elements that exist outside the boundary of the organization and have the potential to affect all or part of the organisation” (Daft 1989:45). The chapter presents six different aspects of the external environment which impact on the phenomenon being studied:

- national socio-economic context
- general education context and secondary access challenge
- historical development of vocational education and training
- national education and ICT policy context
- government ICT strategy and implementation initiatives
- government skills strategy and implementation initiatives

2.1.1 Documentary sources

The information presented in this documentary analysis of the external environment of FCTVE has been gleaned from a wide range of sources. Where possible, primary sources have been identified and analysed. However, in some cases, it was only possible to quote from secondary sources and access could not be gained to the original documents. These sources include:

1. Government policy documents
2. Government development documents and websites
3. Government agency publications and websites

4. Government savingrams³
5. Reports from independent research agencies
6. National media
7. Development partner and government-funded consultancy reports
8. Speeches made by government officials and Ministers
9. Field notes of meetings with government officials

The study used the MIT 90s model for thinking about organisational change related to ICT integration. The model is comprised of five sets of forces in dynamic equilibrium with themselves in an organisation which is subjected to influences from the external environment (Scott Morton 1991:19). The external environment comprises the technological environment and the socioeconomic environment. In the case of a government funded education institution, the researcher would contend that there is also an external policy environment and this has been added to the Scott Morton model.

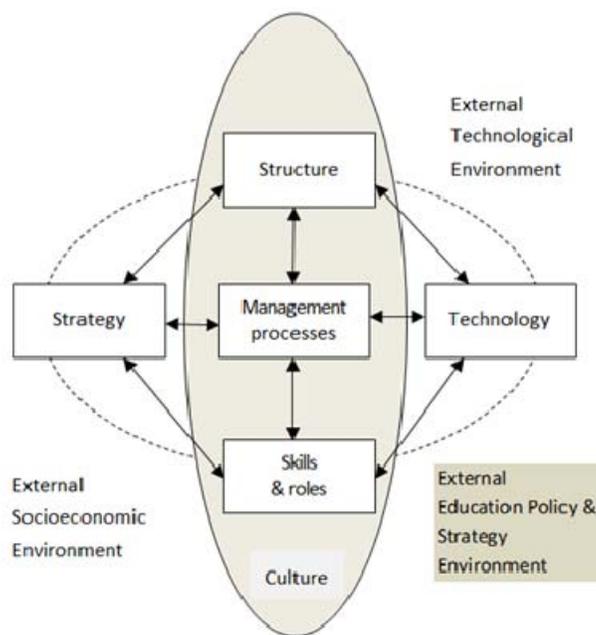


Figure 2.1: MIT 90s model (Scott Morton 1991)

³ Savingrams are GoB memoranda

This chapter provides an historical analysis of the documentary evidence of the policy and socio-economic development landscape within which FCTVE carries out its mandate. According to Cohen *et al* “...the historical study of an educational idea or institution can do much to help us understand how our present educational system has come about” (Cohen *et al* 2000:159). The chapter will show how the mandate to introduce distance and elearning came to be given to FCTVE and how the external environment impacts on the implementation of the mandate. The chapter contains extensive quotations from the documents analysed in an attempt to represent, but not mediate, the text that is found in the policy and research environment.

The analysis of the environment in which the case study is located has been carried out through documentary evidence. According to Patton documents “constitute a particularly rich source of information about organizations and programs” (Patton 2002:293). Lincoln and Guba note that documents “...are a rich source of information, contextually relevant and grounded in the contexts they represent” (Lincoln & Guba 1985:276) A wide range of documentary evidence has been analysed from sources including government ministries and agencies, development partners, national and international researchers. Here, the economic and social development context of Botswana is identified, within the framework of government policy and development plans as they relate to technical and vocational education. Government policies and strategic planning and implementation activities are considered in terms of the extent to which they facilitate – or otherwise – the introduction of new teaching and learning technologies. The potentially problematic relationship between government policy and the reality of implementation leading to impact on both institution and individuals is considered. The chapter focuses on the historic development of TVET and looks at the recent government reform strategies of the Botswana Technical Education Programme and the National eLearning Strategy for Botswana. The contribution of the European Union – as the main development partner – is explored and the context of technical assistance in DTVET, analysed.

The relationship between the six key components in the external environment of FCTVE is illustrated in Figure 2.2. These components include: socio-economic, the historical context of vocational education and training and the national educational policy and strategy framework and the development partner context.

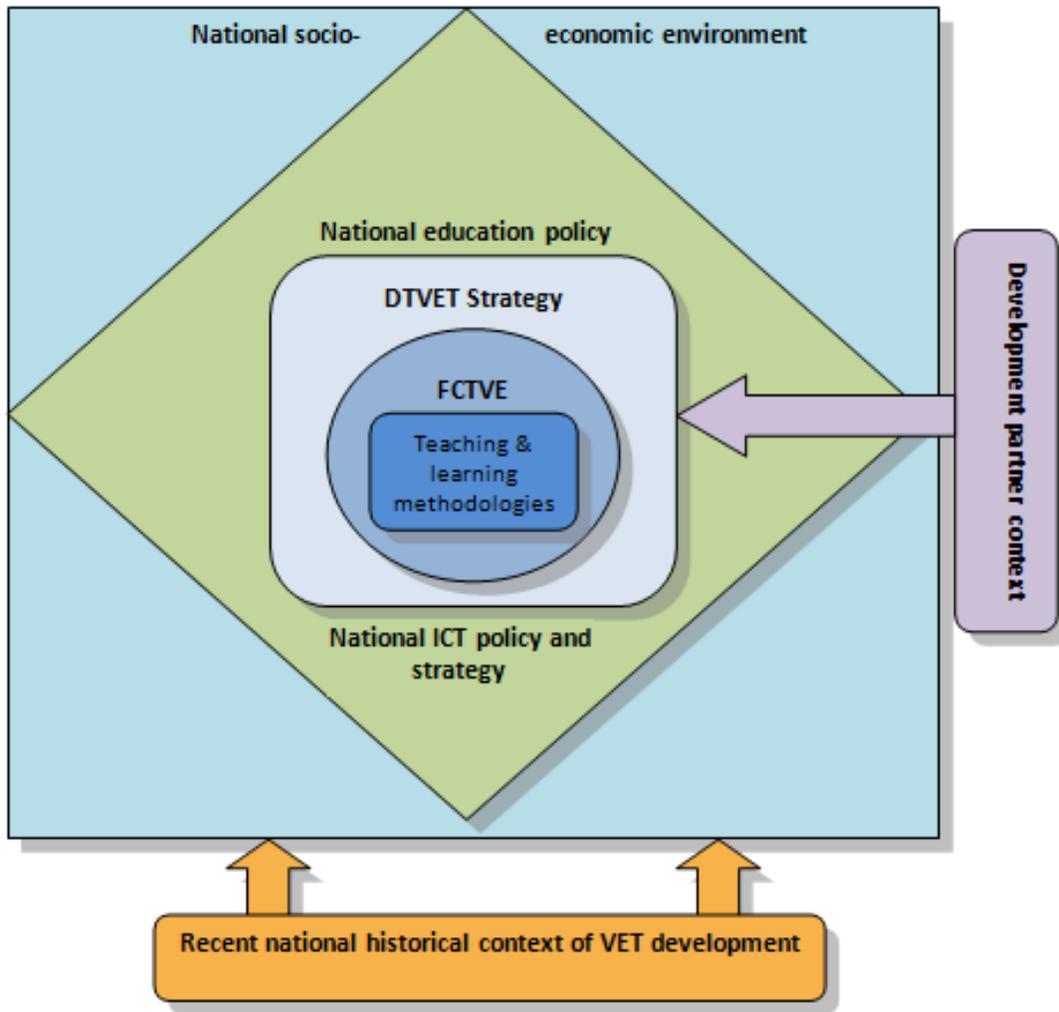


Figure 2.2: Environmental context for introduction of new teaching and learning methodologies

2.2 NATIONAL SOCIO-ECONOMIC CONTEXT

The Government of Botswana (GoB) has focused on science and technology as one of the primary drivers for economic and social development in their country. This link between development and science and technology has been most boldly illustrated by the government's response to the availability of ICTs and particularly the provision and

use of ICTs in education. ICT has been recognised by many governments and development partners as an important tool in poverty alleviation (World Bank 2006:5) This is important in this case study of new teaching and learning technologies in technical and vocational education because it is the over-arching theme of the government of Botswana's efforts to alleviate poverty in the country.

Upon independence 42 years ago, Botswana was one of the poorest of the world's least developed countries with 90% of the population living off subsistence agriculture in a country with one of the harshest and driest climates in the world. The resource base on which to build was relatively poor; a tiny population of about 500,000, mostly illiterate, rural people; about the same number of cattle; a vast expanse of semi-arid land and wildlife (United Nations 2004:14).

But Botswana is one of Africa's few success stories of economic development and is one of a small number in sub-Saharan Africa to be classified as a middle-income country (Siphambe 2000:106). *"Following Independence in 1966, the country has been transformed from one of the least developed countries, with 90% of the population subsisting in drought-prone agriculture and a per capita income of about US\$80, into a middle-income country, with 50% of the labour force employed in formal sector activities, and a per capita income estimated in 2004 at US\$ 3,451"* (Hough & Short 2007:182).

Freeman and Lindauer (1999:17) note *"The answer to the question about which economy has had the world's fastest growth rate over the period, 1965 – 1995, is not one of East Asian tigers, but ... Botswana"* This transformation has, in no small part, been made possible by the discovery of vast diamond deposits shortly after Independence which provided government with funds for development. According to Akoojee, the African Development Bank states that income from exploitation of natural resources has allowed Botswana to avoid *"the large and crippling external debt burden common to most developing countries"* (Akoojee 2005:10). But Botswana is

characterised as a country with “*an uneven social context*” (Akoojee 2005:9) with a Gini coefficient⁴ of 0.6 (UNDP 2005:17) which indicates a high degree of income inequality.

Freeman and Lindauer (1999:17) observe that the exceptional growth rate following independence was matched “*by improvements in other development indicators.*” Is this still true? Not according to the UN Human Development Index where the data for 2005 rank Botswana 124 out of 177 countries. The Human Development Index “*provides a composite measure of the three dimensions of human development; living a long and healthy life (measured by life expectancy), being educated (measured by adult literacy and enrolment at the primary, secondary and tertiary level) and having a decent standard of living (measured by purchasing power parity and income)*” (UNDP 2005).

UNDP (2005:17) notes that “*unemployment and poverty are serious problems for Botswana despite decent rates of economic growth*” The highest rate of employment growth in Botswana, between 1997 and 2004, was in the education sector (8.7% p.a.) due to increased employment of school teachers as pupil-teacher ratios have fallen. Other sectors with robust employment growth include transport (6.1% p.a.), community services (4.9% p.a.), manufacturing (4.8% p.a.), agriculture (4.8% p.a.), finance & business services (4.7% p.a.) and construction (3.9% p.a.). Over this period, central government experienced employment growth of 2.8% p.a. (Hough & Short 2007:Appendix 9.3).

But the country is still far from reaching its objective of poverty eradication by 2016. The latest UN Human Development report was published in 2005 and gives a figure of 47% of the population living below the poverty line, stating: “*Most countries with per capita GDP comparable to Botswana’s, e.g. Tunisia and Algeria, have income poverty rates of*

⁴ Gini Coefficient is commonly used to indicate income inequality in a society. Gini Coefficient is a number which has a value between zero and one. As the value of the coefficient rises, the higher the degree of income inequality in a society becomes.

less than 10%. Yet, for Botswana, nearly half the population subsists below the poverty line” (UNDP 2005:18). Siphambe notes that Vision 2016 specifies even more demanding goals, which are to reduce people in poverty to 23% by 2007 and to zero by 2016 (Siphambe 2000:75). The National Development Plan 10 (2009 – 2016) notes that by the end of the NDP 9, this rate had reduced to 23% (GoB 2009). The governments’ main strategy for fighting poverty is to promote sustainable growth and diversification of the economy, to create business opportunities and generate employment (GoB 2007a).

2.2.1 History and development of TVET in Botswana

Formal vocational education and training started just before independence with the Brigades’ movement initiated by van Rensburg in Serowe in 1963. The Brigades linked vocational training with community development to provide opportunities for unemployed school leavers. The Brigades were based on the concept of education with production, combining the supply of cheaper goods and services to the local community with opportunities for young people to learn a trade skill. *“Around Independence, a training centre was set up with the support of the Commonwealth Assistance Programme to train administrators and artisans for the civil service. The Botswana Polytechnic [now the Botswana College of Engineering and Technology under DTVET] and the current Botswana Institute for Administration and Commerce grew out of this initial project”* (Atchoarena & Delluc 2001:183). *“The first government technical colleges ... were opened in 1987”* (Akoojee 2005:17). The Brigades now number 41 and in 2007 were formally taken over by DTVET to operate as junior technical colleges. In 2008, DTVET manages 7 technical colleges with 2 more under construction.

At independence, Botswana’s *“stock of well-educated citizens was infinitesimally low – an estimated 40 university graduates and about 100 people with secondary school certificates”* Freeman and Lindauer (1999:17). To relate this to skills training, in 1967, NDP 1 stated that *“47 young men are undergoing training as carpenters, bricklayers, electricians and mechanics”* (Atchoarena & Delluc 2001:183).

2.2.2 General education context and the post-secondary access challenge

At the time of the initiation of the case study, and despite rapid transformation, Botswana still faces a huge challenge in developing a skilled population which can further contribute to national development. This is partly due to the lack of capacity of the education system to meet demand. Due to the successes of the focus on the goals for Millennium Development and Education for All, most African countries are grappling with the question of how to increase access to post-secondary education. Botswana is no different. *“There is also evidence that the economy is unable to cater for the increasing numbers that have emerged from the expansion of primary schools”* (Akoojee 2005:13). A net primary enrolment ratio of 100 was reached in 2000 (Botswana Human Development Report 2005:33). This success has consequently expanded the secondary sector and increasing numbers of secondary leavers are putting pressure on provision of post-secondary, or tertiary education. The World Bank, in its *Education at a Glance* series, reports a gross enrolment ratio (GER) for secondary education that increased from 38% in 1990 to 77% by 2009. (World Bank, July 2009).

The first choice for most secondary school leavers is university but tertiary provision has not expanded at the same pace as basic education. Nationally, there is a net enrolment rate of around 12% in post-secondary education (Working Group on the Tertiary Education Policy for Botswana 2005). In a national needs assessment for tertiary-level open and distance learning (ODL) in Botswana, Dodds, Gaskell and Mills report that *“there are already thousands of Form 5 leavers who cannot get into tertiary education each year. The University of Botswana calculates that out of about 20,000 Form 5 leavers each year, 18,000 would be traditionally eligible to apply for university. It therefore put up its minimum entry requirements which reduces those ‘qualified-to-apply’ to about 12,000. It then admits 5,000, of whom around 3,500 are school leavers, 1,000 are adult workers and 500 are moving from one qualification to another. This leaves approximately 14,500 ‘eligible’ Form 5 leavers unaccepted at the university”* (Dodds, Gaskell & Mills 2007:6). These researchers also note that the statistics they obtained on enrolments and targets were *“somewhat unclear and occasionally contradictory”* (Dodds et al 2007:5).

Where do these young people go? Increasingly they are turning to vocational education and training – traditionally through government institutions but more recently to the growing number of private institutions in the country. Of the 51 registered institutions reported by the Botswana Training Authority (BOTA) in March 2007, more than half were private providers (BOTA 2007). Akoojee (2005:29) notes that the private providers focus primarily on computing, business, and commercial subjects which do not require heavy investment in training equipment and workshops. Private providers also rely heavily on foreign courses and certification, such as Pitman and City & Guilds. An informal survey and review of prospectuses carried out in private vocational colleges in Francistown confirmed these findings.

In 2007, DTVET reported enrolment figures in technical colleges as 3,600 students⁵. In the same year, BOCODOL registered 2,380 students⁶ on vocational programmes. This totals only 5,980 places – just over one third of the annual university ‘push-outs’⁷. Approximately 7,500 are enrolled in Brigades, giving a total of just over 12,000 in government programmes. This failure to meet demand for higher education means that students who do not meet the entry criteria for university get pushed further back and have less chance of being accepted at Technical Colleges (or Colleges of Education or Institutes of Health Sciences) as these institutions select students with the highest academic grades at Botswana General Certificate of Secondary Education (BGCSE).

In terms of enrolment at Technical Colleges, development partner documents report a figure of 100 applications for every training place (Isaacs 2007). However, discussions with Technical College principals and staff and the experience at FCTVE when advertising courses reveal that the situation is much more serious than this. Departments such as ICT and Business could receive more than a thousand

⁵ Statistical Report 2007 : DTVET February 2008

⁶ Project document to develop BTEP Key Skills by distance learning : DVET/BOCODOL May 2008

⁷ University push-outs are those students who qualify for university but cannot gain a place due to space limitation

applications for just 32 places (Field Notes: discussions with FCTVE ICT and Business Heads of Department, October 2006).

2.2.3 Financial environment – government spend on education

The importance of education to the development plans of the Government of Botswana is reflected in the allocation of the national budget to the education sector. *“Analysts have identified education as an important determinant of economic growth. It is in recognition of the potential role of education that most governments in sub-Saharan Africa have allocated a large part of their budgets to the education sector”* (Siphambe 2000:105).

The Government of Botswana has two annual budgets – the recurrent and the development budget. The Recurrent Budget is provided to ministries to cover daily running costs. The Development Budget is the fund for major projects specified in the national development plans (Field Notes: conversation with FCTVE Principal, May 2007). The 2008/09 recurrent budget was P21.84 billion and of that, the largest portion of 26.8% (P5.51 billion) was allocated to the Ministry of Education (Gaolathe 2008).

The government national newspaper the Botswana Daily News, reported a 2008 development budget of P8.5 billion (*Botswana Daily News* 17 April 2008:5). This figure is split just under P8 billion from government and P574 million from donated funds from the development partners – primarily European Union. Within the Development Budget, P1,038 million (12.2%) was allocated to education to be spent on both projects and infrastructure. The major projects were listed as infrastructure for secondary schools and Colleges of Education.

It is interesting to note that in the section on education in the 2008 budget speech, the focus was almost entirely on developments in higher education. Technical and vocational education was mentioned only in terms of the target improved transition rate from secondary schools to technical colleges and Brigades of 83% by the end of NDP 9. Hough and Short (2007) report in the Education Fiscal Policy Review 2007 Appendix

19, that the projected number of secondary leavers (both junior and secondary) in 2008 would be 164,400. 83% of this is just over 136,000 – a number far in excess of the capacity of the TVET system in both public and private institutions. Enrolments in 2003 were reported at approximately 26,000 in both public and private TVET institutions (GoB/EC 2005:13). This points to TVET as an educational sub-sector which is being placed under growing pressure to expand to meet increasing demand. An analysis of the historical context of national education policy can assist in illustrating the relevance of this.

2.3 NATIONAL EDUCATIONAL POLICY CONTEXT

Researchers have commented that the main strength of the TVET sector in Botswana is the breadth of the policy framework which directs its activities. (Atchoarena & Delluc 2001:181; Weekes 2002:6; Raleru & Modungwa 2003:3; Siphambe 2000:106) The highest level of government strategic thinking in Botswana is the plan for the country 50 years after independence. Called Vision 2016, it promotes an image of a prosperous, productive and innovative society with a diversified economy and full employment. Formulated in 1997, it aims for an educated and informed society, in which citizens have the opportunity of continued, lifelong education. It is sometimes called the guiding spirit of national development. Vision 2016 calls for much more rapid rates of growth in employment which necessitates increases in the provision of technical and vocational education, to provide a skilled workforce. Section 2.7 will show that the Government of Botswana strategy to increase employment opportunities included the establishment of new technical colleges, of which FCTVE was the first. The strategy intended the new colleges to pioneer the use of ICTs in programme delivery in new teaching and learning methodologies to increase access to TVET. Other strategies to respond to the impact of globalisation issues such as increased Foreign Direct Investment and pervasion of ICTs into the workplace include the establishment of an Innovation Technology Hub in Gaborone. This is explained further in Section 2.4 on ICT strategy and implementation initiatives in the external technology environment.

Vision 2016 notes that the people of Botswana will need to adapt to the challenges of a global society (Vision 2016:4) and draws attention to the increasingly intrusive global culture (ibid. page 5). The need for Botswana to be globally competitive is highlighted and the importance of economic diversification is offered as a route towards this. The need to retain national cultures and ethical standards in this development are stressed (ibid. page 48).

2.3.1 National Commission on Education (NCE) 1993

The second National Commission on Education in 1993 outlined the need to provide skilled workers for local business and industry; for trainees to be multi-skilled, flexible, and hard-working; to ensure equity and increased access to vocational education; to improve the reputation of vocational training; create an integrated national training system; provide for lifelong training opportunities; prepare students for self-employment; focus on modern methods of teaching and learning; and make linkages with business and industry. Students would be given the chance to undertake vocational or technical training at post-secondary level as an alternative to academic study. But it would not be possible for the government to build sufficient new colleges to provide full-time residential places for all the young people who wanted them. Therefore, the strategy was selected to pilot ICT-enhanced distance and elearning.

2.3.2 National Development Plans

Educational development, like all other sub-sectors in Botswana, takes place within the context of six-year rolling National Development Plans (NDPs) (Weekes 2002). *“The process of preparing National Development Plans is extensive and follows a bottom-up approach, which involves widespread consultations with stakeholders, including the communities in general and public structures, such as the Village Development Committees, Community Based Organisations, and the Local Authorities”* (Gaolathe 2008). This consultative characteristic of Botswana culture will be further explored in Chapter Five on findings.

“National Development Plans are essentially plans for public spending and human resource use, and annual budgets are used as instruments for converting a development plan into a programme for action” (Hough & Short 2007: Appendix 1:2). Through successive development plans since NDP 7, the development of Botswana’s human resource capacity has been a priority. Land noted the importance of the national development plans for donor coordination *“The successive five- and six-year national development plans that have been implemented since independence have offered a framework for matching policy, plans and budgets. Their establishment was seen as a way not only to allocate scarce resources in the period immediately after independence, but also as a mechanism for attracting foreign assistance”* (Land 2002:2).

The Development Plan under which this research was carried out was NDP 9 which started in 2003 and ended in 2009. Economic diversification, employment creation and poverty alleviation are identified as key challenges in NDP 9. The need for distance education and elearning is emphasised in NDP 9: *“A major strategy during NDP 9 will be to reach out to the out-of-school youth and people in employment using distance education and elearning. The BTE [Botswana Technical Education] programme being fully modularised lends itself well to this development”* (GoB 2002 15.120)

Relative to VET, new delivery methods were specified in NDP 9, in particular, in relation to flexible learning, NDP 9 states that DVET should:

1. Increase training opportunities for out-of-school youth and people in employment through the development of distance education and e-learning packages in partnership with BOCODOL as well as through the construction of learning resource centres.
2. Enhance access to ICT and use of state-of-the-art technology to improve both quality and delivery of technical education programmes through improved networks, internet access and elearning solutions.
3. Improve effective utilization of facilities by extending hours (every facility should be used throughout the day, evening and part of the weekends).
4. Provide learning modules as distance education and e-learning packages.

5. Establish e-learning resource centres linked to technical colleges.

(GoB 2002 15.114)

NDP 9 focuses on the need to make provision for lifelong education and training through a variety of strategies including sharing of resources, access to part-time courses, the implementation of various modes of learning such as open, distance and elearning (GoB 15.46/47).

2.3.3 Revised National Policy on Education 1994

The foundation policy in education which shapes Vision 2016 is the Revised National Policy on Education (RNPE) of 1994. In it, GoB has acknowledged that *“An efficient and effective training system is crucial in a country’s economic development and therefore it is necessary to focus attention on the training system distinct from general education and to give it more priority. “Currently, there is no unified policy for vocational and technical education and training is fragmented and of uneven quality”* (GoB 1994: 8.1). Akoojee (2005:19) comments that *“The RNPE provides the context for VET. For the first time, government policy recognised TVET as something that should be distinct from general education and training”*. The policy notes that access to VET is more restricted than other types of education. It indicates that *“Government will expand vocational and technical training and create the necessary structures for effective co-ordination”* (GoB 1994: 8.3). RNPE also notes that Government should take responsibility for developing a more comprehensive system of vocational qualifications in consultation with employers (RNPE 8.3).

This recognition was defined by the Government of Botswana in the National Policy for Vocational Education & Training (NPVET) 1997 which identified the need to expand access to vocational education and training and lead to curriculum reform for TVET, the expansion of the technical colleges and the focus on flexible methods such as distance learning. This policy context is important for the findings presented in Chapter Five where evidence will be presented for the disconnect between government policy and the reality of implementation of the strategy to introduce distance and elearning. This

reform raised issues of performativity, the changing role of teachers and their response to new measures of their skills and performance.

2.3.4 National Information & Communication Technology (ICT) Policy and Strategy

The development of new teaching and learning technologies is closely linked to the development of ICT policy and implementation in a country (Hough & Short 2007:80; GoB National ICT Policy 2007b; Stevens 2001:46).

The National ICT Policy – *Maitlamo* – is a vital supporting policy to the introduction of new teaching and learning technologies. It was approved in 2007 and provided “*a clear and compelling road map for Botswana to drive social, economic, cultural and political transformation, towards national development through the effective use of ICT*” (GoB National ICT Policy 2007b:3). The policy focused on access to ICT and how connectivity would be provided. Full connectivity to homes, communities and establishments is seen as a priority with a plan for delivering health, education, public services and eCommerce solutions to everyone in Botswana. The provision of electricity and internet access for all remote and rural communities is seen as an important effort in ensuring equity and universal access.

The education section of *Maitlamo* is called Thuto Net and is given special emphasis in the policy as it noted that “sustainable ICT-driven transformation and national growth will only be achieved through the development of local skills and expertise” (GoB 2007b:6.4.1) There was an initiative to connect all schools with a minimum connection of 128 kbps through a central education network which built on the Government Data Network (GDN) already in place. A refurbishing unit for government and private sector donated computers to be refurbished and sent to schools was planned. A professional development programme for school managers, administrators and teachers was envisaged. But access was not only targeted at schools and children. Community access points – called Kitsong Centres were to be established with a focus on skills development for adults.

In terms of access to ICT in education, Maitlamo has this to say:

“PC penetration is very low in schools and homes across the country. This is particularly true in remote areas, especially where limited access to electricity compounds the problem (only 8% of households in rural areas have electricity for lighting). Inadequate electricity supply for schools in rural areas is a serious constraint. The cost of Internet accounts is high and is a further limitation on use” (GoB 2007b:C5). The TVET sector is mentioned only in that BTEP includes a programme of training in ICT (GoB 2007b:C8). Focus was given to increasing access to ICT in the basic education sector. *“December 2010 is the target date for having all schools and libraries with computers and internet connectivity, for all teachers to have received ICT training, for ICT content to be available at all levels and for achieving a 1:7 PC-to-learner ratio”* (Isaacs 2007:6).

2.4 ICT STRATEGY AND IMPLEMENTATION INITIATIVES – TECHNOLOGY ENVIRONMENT

Policy reform raises issues of resourcing requirements to implement the planned strategy. Resourcing is required at both the macro (system-wide) and micro (institutional) levels. In Botswana the provision of technical infrastructure for ICT has been relatively well addressed. The use of ICT in education can only follow after the government has created an enabling telecommunications environment. Educational advances rely on developments in government policy on the provision of widespread national energy and telecommunications infrastructure. During NDP 9, the government has focused on several important ICT initiatives to support the development of elearning in the country. This was noted in the development of the national elearning strategy by Uys and his team: *“The Ministry of Education has a substantial ICT Infrastructure with approximately forty remote regional offices of all its departments now connected to Headquarters via the Government Data Network (GDN). These include remote administration offices, Colleges of Education, Education Centres and Technical Training Colleges. The GDN was primarily designed to cater for administration and it is currently being expanded to support educational communication and elearning needs”* (Uys et al 2004:7). The Education Data Network will provide all educational institutions with access to internet and elearning throughout the country. Currently some pilot secondary

schools have Internet access but through Botswana Television Corporation transponders (Isaacs 2007:10).

The Nteletsa project provides ICT connectivity to rural areas of Botswana. This government-funded project was set up to provide telecommunications services to 197 rural villages without telecoms connections. In 2002, the Ministry of Science, Communications and Technology (MCST) signed an agreement with the parastatal Botswana Telecommunications Corporation (BTC) to connect 62 villages in the north east of the country and in 2008 with MASCOM (a private mobile phone operator) to connect a further 41 villages in the east and south east. The difficulty for government is that phone operators want to connect densely populated areas but not the rural villages with very small market base. The project also includes Public Communications Centres (PUCCs) in villages which will be operated by the communities in partnership with MASCOM. The PUCCs will allow people to use telephones, computers and access the Internet at common places. (Mmegi 24 September 2008 Vol.25 No.14). The rationale guiding this activity is that there is a need to strengthen access to technology alongside content development and the provision of learning opportunities.

The Botswana Innovation Hub is designed to “*act as a catalyst to enhance Botswana’s ability to compete globally in the ICT arena*” (Gaolathe 2008:79). The project started in 2008 and is expected to be completed in 2010. The Botswana Innovation Hub is linked to the completion of the Trans Kalahari fibre optic project which completed in September 2008 and provides more than 2000kms of reliable fibre-optic backbone connecting all the major cities in Botswana. (Deputy Prime Minister speech at the opening ceremony 29 September 2008). The Coordinator of the Innovation Hub explained that “*the BIH will provide an enabling environment where technology driven and knowledge intensive industry, researchers, higher education and the public sector work together to foster innovation and new business*” (personal communication 4th September 2008). She also revealed that the companies applying to establish themselves in the Innovation Park will be required to demonstrate their commitment to staff development through elearning (Interview with BIH Coordinator May 2008). The

Nteletsa project, fibre-optic back-bone and Botswana Innovation Hub are important developments for the provision of access to ICT and proliferation of elearning in Botswana.

2.4.1 Government Skills Strategy and Implementation Initiatives

Clearly then, there is a strong national policy framework which guides the development of both ICT infrastructure and technical and vocational education in Botswana and it has been shown how this identifies the introduction of flexible modes of delivery and the use of new teaching and learning technologies as an important strategic development. What strategies then, did the Government of Botswana implement in order to make the policy statements a reality? Three key reform initiatives have been identified, which include:

1. Establishment of regulatory bodies - the Botswana Training Authority (BOTA) and the Tertiary Education Council (TEC)
2. Partnership for technology access
3. eLearning strategy development and creation of National elearning Steering Committee (NELSCOM)

2.4.2 Establishment of Regulatory Bodies

Botswana Training Authority

The 1998 Vocational Training Act provided for the establishment of the Botswana Training Authority, known as BOTA, which started operations in 2000. BOTA originally came under the responsibility of the Ministry of Labour and Home Affairs. In 2010, BOTA was reassigned to the Ministry of Education and Skills Development under the Tertiary Education Council. The main objectives of BOTA are to co-ordinate vocational training activities to achieve better integration and harmonisation of the vocational training system; to monitor and evaluate the performance of the vocational training system and to advise on policy related issues of vocational training. BOTA registers and accredits vocational training institutions and individual instructors.

Akoojee notes that “*The Vocational Training Act, No. 22 of 1998 (Republic of Botswana 1998) was designed specifically to establish the Botswana Training Authority as the*

statutory body 'to coordinate and promote vocational training in Botswana'. This terminology implicitly excludes vocational education and training, suggesting that the BOTA does not cover areas of Department of Vocational Education and Training (DVET) responsibility, an issue that continues to be contentious" (Akoojee 2005:20). However, the BOTA website (www.bota.org.bw) explicitly states it is mandated under the Vocational Training Act – 1998 and its overall task is to monitor and regulate Vocational Education and Training (VET) within Botswana.

BOTA is engaged in developing the Botswana National Vocational Qualifications Framework (BNVQF) system for which it has developed a set of unit standards at three levels in a range of vocational areas. There is some question about how the new VET curriculum developed by the Department of Technical & Vocational Education and Training in the MoE will articulate with these qualifications once they are established which indicates potentially overlapping strategies from different bodies who are implementing national policy.

Tertiary Education Council (TEC)

"The Tertiary Education Council (TEC) was established by an Act of Parliament as a parastatal in 1999 to be responsible for policy co-ordination, planning and development, funding and quality assurance of tertiary education in Botswana"(GoB 2009:12.1). The Tertiary Education Policy was promulgated in 2008 and notes distance learning as a possible solution to the policy challenge of access to tertiary education. The policy makes provision for the establishment of one national open university and since then, the Botswana College of Open & Distance Learning has been engaged in the process of upgrading to university charter status. The Public Enterprises Evaluation & Privatisation Agency (PEEPA) report – Strategy for the Rationalisation of Certain Parastatals and Public Entities (PEEPA 2006) recommended that BOTA & TEC should be merged, and this was done in 2010.

The mandate of the TEC is important for FCTVE because it was planned that during NDP 10 (2009 – 2015) some of the tertiary educational institutions which are currently

managed by government would become semi-autonomous under TEC. This includes the Colleges of Education, Health Science Institutes and Technical Colleges offering advanced programmes. This was reported in a TEC workshop at FCTVE in February 2008 to prepare for the TEC submission to NDP 10. Semi-autonomy for FCTVE will make it budget-holding and a cost-centre with attendant requirements on the senior management. Flexible programme delivery will become more important for the college as a potential way of increasing student numbers in a more cost-efficient way than conventional delivery.

2.4.3 Development of a national elearning strategy

In 2003 GoB formed a National eLearning Steering Committee (NELSCOM) and commissioned an expert team⁸ of local and international consultants to consult with stakeholders and prepare a national elearning strategy with an overall purpose of ensuring “*effective use of elearning in human resource development to increase competitiveness and reduce unemployment*” (Uys et al 2004:3).

The team proposed, and NELSCOM subsequently ratified a four-year project (April 2005 – March 2009) with 4 anticipated results:

- Result 1: An adequate policy framework to guide elearning activities
- Result 2: Appropriate infrastructure to support elearning
- Result 3: Effective content acquisition and delivery of elearning in targeted areas
- Result 4: Trained staff that are ready to use elearning effectively

The expert review was funded through the Education Development Fund (EDF) 8 at the European Union and the proposed implementation project was to be funded through EDF 9 (BWP 63 million) and GoB (BWP 54 million). The research project was one of five research activities managed by The British Council. This was an example of the regular use made by the Government of Botswana of foreign technical assistance to

⁸ The researcher was a member of the expert team

contribute substantively to national strategy. This feature of the Government landscape is discussed in the next section in this chapter.

The reporting complexities of this development partner-funded research and the fact that it was only one study in a group of five educational reform research activities, led to difficulties and delays in the adoption of the proposed national elearning strategy. The other four research teams met with resistance to their methods and findings from the prospective steering committees and in some cases the research reports were rejected or activities ended before reporting was completed. Contract negotiations between the development partners, the managing agency and the government of Botswana resulted in delays in the eLearning Strategy being ratified even though the report and proposed strategy was accepted by NELSCOM. This indicates the delicate balancing act between hiring in external expertise and responding to local expectations, requirements, norms and cultures.

During her time at FCTVE, the researcher was co-opted as a member of NELSCOM from January 2007 to December 2008. Attendance at NELSOM meetings revealed that although it was understood that the proposed strategy had been accepted, the strategy was not implemented as planned. Apart from ICT infrastructure development, the only activity to be picked up by NELSCOM was 4.1 the establishment of a Botswana Institute for Educational Technology & ODL. Specific funds were sought and granted from the Ministry of Education for an eLearning Institute. The proposed timescale was October 2007 to March 2011, but by December 2009, no progress had been made. NELSCOM planned to recruit a Technical Adviser on a consultancy contract as a Director despite concerns about sustainability. This aspect of the elearning support environment highlights some of the problems identified in Botswana of implementing projects. This is sometimes articulated as a perception of inaction. *“The problem is that we, in Botswana, are very good at planning objectives and activities but we are not very good at implementing them” (DTVET Officer, Field Notes February 2009).*

This leads to analysis of the development partner environment as the national elearning strategy was to be co-funded by EU.

2.5 DEVELOPMENT PARTNER ENVIRONMENT

Development cooperation in TVET has been important in Africa since increasing numbers of countries started gaining independence in the 1950s and 1960s. The demands of modernisation created the need for workers with a range of industrial and productive skills which were not provided through general education. During the 1960s and 70s, the World Bank allocated more than half its funds for education systems in developing countries to TVET. During the latter half of the century, development partner expenditure on TVET reduced considerably. McGrath notes that the EFA agenda, delineated in the Dakar Framework for Action in 2000, 'caused VET to fall from grace' (McGrath 2002). King and Palmer (2011) note that globally, official development assistance from donors to vocational training increased threefold between 2002 and 2009. Therefore it is not surprising that the development partners play an important role in TVET in Botswana in the period leading up to this study. The development partner environment is important to this study because not only was the national elearning strategy to be donor funded but the establishment of the new technical college in Francistown and the technical assistance to operationalise it and to introduce distance and elearning were also partly donor funded. Only the relationship between the European Union and the Government of Botswana will be analysed in any detail as this is the relevant development partner to the study. The Government of Botswana noted in their Joint Annual Report of cooperation with the European Union:

“The Francistown College of Technical and Vocational Education (FCTVE) programme is a continuation of the programme funded under EDF7 aiming to respond to the severe shortage of technical and vocational teachers and to improve the skills of existing staff and to service the staffing needs of the Vocational Education expansion programme and address the severe shortage of vocational education and

training college places for school leavers, unskilled people and the unemployed.”

GoB/EC Joint Annual Report 2006:14

The Technical Assistance Team noted in their Inception Report:

“The Francistown TA-component is part of a 31.2 million Euro project (co-financed by the European Development Fund (EDF) – 15M € and the Government of Botswana (GoB) – 16.2M €) with the overall objective to improve the standard of living for school leavers and unemployed (poverty alleviation).”

Christensen 2006:3

The Ministry of Finance and Development Planning is charged with the responsibility of coordinating all international donor assistance as part of annual budget preparation and integration with national development planning. Aid flows have declined in line with the increasing relative wealth of Botswana. Financial aid as a percentage of public capital expenditure has decreased from nearly 100% in the 1960s to 15% in 1992, 5% in 1993 and represented about 0.5% of GDP and 1.2% of the total government revenues in 2004/2005 (Hough & Short 2007 Appendix 10).

Because of its middle-income country status, many international donors no longer work in Botswana, but there is still a significant relationship with the European Union (EU). The EU is an important provider of expatriate technical assistance to the Government of Botswana which provides for the skills gap amongst citizens. The EU funding focus is on poverty alleviation and it is this theme which enables them to continue their support to Botswana. Botswana is known for its strong management of technical cooperation projects and the strength of the integration of external resources into the country's national planning system.

Land (2002:2) notes that technical assistance has been the most significant component of aid to Botswana. This was because although the country has a sound financial base,

there is a critical shortage of skilled personnel. To mitigate these ‘significant capacity gaps’ Botswana contracts substantial numbers of international experts as technical assistants. This aspect of the development partners’ environment is important because the introduction of new teaching and learning technologies at FCTVE was Technical Assistant-led and the first lecturers to take up these methodologies were expatriate contract teachers. The use of technical assistants is specified as a directive to DTVET in NDP 9 – recommendation 15.120. *“DTVET should seek technical assistance to address these new areas of development [distance and elearning delivery]”*.

In the World Bank study of the use of distance education for VET in Africa, Stevens notes: *“The judicious use of technical experts to assist local policy makers and educators in the planning and implementation phases can greatly assist in transferring essential knowledge relating to distance learning into the region”* (Stevens 2001:68). The emphasis here is on the word *can*. Knowledge and skills transfer requires a conducive environment which includes the local counterpart taking responsibility for both their own learning and for the implementation of distance and elearning methodologies. Unfortunately counterparts for the Technical Assistants were not made available in the case of the activity at FCTVE.

2.6 REFORM OF THE GOVERNMENT VET SYSTEM

During the 1990s, it became clear that the government TVET system of apprenticeships and National Craft Certificates was not meeting the needs of the nation. The Department of Vocational Education and Training, with the financial support of the European Union set about reforming the curriculum in partnership with the Scottish Qualifications Authority (SQA). The new programme, called the Botswana Technical Education Programme or BTEP, was designed to be outcomes based and unitised to enable flexible access. Programmes were initially developed in 8 vocational areas at Foundation and certificate level through consultation with industry in Programme Advisory Committees. A separate unit for quality assurance and accreditation (QAA) was established and an assessment bank established. The system included programme approval procedures and internal and external validation mechanisms to uphold

compliance and assure quality. Qualifications are jointly accredited by the Department of Vocational Education and Training and the Scottish Qualifications Authority (DTVET 2005). BTEP was launched in 2001. Plans to reform delivery methods were also made in response to government TVET policy as outlined in Section 2.3.3. As noted in that section that education reforms bring about questions of performativity as a method of regulation based on rewards and sanctions. Ball maintains that policy reform structures are changing from previous issues of professionalism and bureaucracy to new policy 'technologies' of the market, managerialism and performativity (Ball 2003:215)

2.7 THE ESTABLISHMENT OF FRANCISTOWN COLLEGE OF TECHNICAL AND VOCATIONAL EDUCATION

The Government of Botswana strategy to expand access to TVET was the establishment of a new college of technical and vocational education with enhanced ICT infrastructure. It was intended that the new college would employ staff with higher qualifications and offer the newly developed higher levels of BTEP. This was carried out in a project partnership with the European Union and included the provision of expatriate expertise. The specific objective of the project was increased effectiveness and capacity of the TVET system in Francistown and outreach centres. Access was to be increased by the provision of additional physical facilities at the new college (classrooms, workshops, boarding etc.) but also by the introduction of more flexible and open access through outreach centres and resourced based learning. (Stephens 2001:59; Atchoarena & Delluc 2001).

In 2006, the Director of DTVET, made a presentation at the 1st eLearning Africa Conference in Addis Ababa on the establishment of a national elearning centre at FCTVE. He described four critical success factors:

1. Policy, Vision and Commitment from both Government of Botswana and EU
2. Consensus building
3. Project components for establishing the CTVE and a National eLearning Centre and other supporting Infrastructure
4. Human Resource Development

The Director explained that the policies were in place and were being implemented through financial commitments from both the Government of Botswana and the European Union. Consensus building would take place through the national elearning strategy being implemented by the National eLearning Strategy Committee. It was envisaged that the new elearning centre would contribute to poverty alleviation in Botswana by improving the employability of young people through the acquisition of vocational skills and improved access to ICT for people living in rural areas (Kewagamang, 2006).

2.8 THE INFLUENCE OF GLOBALISATION ON TVET IN BOTSWANA

There are a range of definitions of globalisation mostly encompassing notions of changing economics, ideology, culture and technology. Laxler identified four changes which take place in the globalisation process. *“(1) Economic changes that include the internationalization of production, the harmonization of tastes and standards and the greatly increased mobility of capital and of transnational corporations. (2) Ideological changes that emphasize investment and trade Liberalization, deregulation and private enterprise. (3) New information and communication technologies that shrink the globe and signal a shift from goods to services. (4) Finally, cultural changes that involve trends toward a universal world culture and the erosion of the nation-state”* (Laxler 1998:287).

There is evidence that higher education is being changed irretrievably under the pressure of globalisation (Marginson & Condidine 2000; Readings 1996), but TVET is also vulnerable, particularly in relation to rapid technological changes and the proliferation of private providers, in particular cross-border providers. Carnevale goes so far as to say that the most important influence is the emergence of flexible, information-based technologies (Carnevale 1991). Education and training policies are seen by some researchers as a way to respond to issues of globalisation (Held et. al. 1999; King & McGrath 2002). There is not much evidence that considerations of globalisation have influenced the development of the Botswana VET policy which states clearly that it employment and self-employment opportunities in both the formal and informal sectors

of the Botswana economy. There is one reference to international standards under the main issues underpinning the policy: *“Training standards should be expressed in terms of a nationally agreed framework and internationally accepted learning outcomes and competencies”* NPVET 1997:11.

One of the widely held assumptions about TVET is that it supports economic globalisation by producing people with transportable skills which contributes to a mobile labour force. (Oketch 2000:221). Distance and elearning delivery approaches obviously contribute to the availability of cross-border TVET. But it works both ways in that citizens of Botswana can access TVET from international providers through distance learning but local institutions can also start to attract students from the SADC region and beyond through these same delivery approaches.

Hobart (1999) draws attention to the changing societal needs brought about by global influences. These include demands on government to provide lifelong learning opportunities and affordable access to post-secondary education. TVET curriculum is also affected as the need to develop people for effective performance in the global world of work as mobility increases. The notion of employability skills has increased in importance with the impetus of globalisation. This was addressed by the Government of Botswana through the Botswana Technical Education Programme curriculum reform which introduced key skills such as problem solving, communication, numeracy, interpersonal skills and ICT skills. All BTEP programmes at all levels include key skills.

2.9 CONCLUSION

In 2005, Akoojee described Botswana as having *“a young, evolving TVET system in the process of serious reflection and reform”* (2005:29) and this is a true reflection of the situation in the Department of Technical and Vocational Education & Training in the Ministry and therefore in the Technical Colleges. The reform brings the potential to make very positive changes in the government vocational education and training system.

Despite the strong policy context and relatively robust technological environment, the government rationale for the introduction of distance and elearning to increase access to TVET was not immediately clear to the Technical Advisory Team. Early discussions took place as to why this step had been taken in a country with a small population (1.8 million), and fairly strong physical presence with 7 technical colleges and over 40 Brigades. Following the substantive curriculum reform leading to the introduction of BTEP, there were concerns that the TVET system was not sufficiently matured to provide the conditions for the successful implementation of new teaching and learning methodologies – requiring in itself a substantive system change.

The documentary evidence discussed in this chapter provides a rich description of the external environment in which FCTVE operates. It traces the government focus on poverty alleviation through an analysis of the national socio-economic context evidenced by policy documents, reported in the local media and as seen by independent researchers and development partner consultants. It is important to note that all development partner consultant reports would have to be approved by the relevant Ministry official before publication. The documents selected show that there is some conflict in evidence of improvement towards poverty alleviation presented by independent researchers and government policy documents. What seems to be agreed upon, however, is that unemployment and poverty are still serious concerns in Botswana and economic growth is not as fast as government predications or targets. The policy documents identify the expansion and reform of technical and vocational education as a major government strategy to contribute to poverty alleviation.

A brief history of the development of vocational education and training in Botswana has been outlined showing that provision has expanded, developed, reformed and improved dramatically since Independence. However, provision is still falling far short of meeting the demand for post-secondary training in vocational and technical subjects. National education policy and planning documents show the clear intention of the Government of Botswana to utilise distance and elearning to expand access to educational provision, and in particular to technical and vocational training.

The policy context has been elucidated including the broad national development plan in operation during the time of this study (NDP 9), and the relevant education (RNPE 1994) and TVET policies (NPVET 1997). The documentary evidence provided by these policies points to the conclusion that right from the early 2000s, when NDP 9 was crafted, the Government of Botswana had a clearly articulated policy of introducing distance and elearning with the objective of increasing access to TVET for both school leavers and working people. This is directly linked in the same development plan to a directive to DTVET to seek technical assistance to implement new approaches to programme delivery. The contracting of technical advisers has been shown, in this chapter, to be a regular strategy for reform in the Government of Botswana and in particular in DTVET. However, this approach does not address issues of advocacy and obtaining buy-in from the people involved in the process – primarily institutional managers and teachers. It will be shown in the findings in Chapter 5 that the main stakeholders, FCTVE teachers and staff, were aware of the strong policy context and demonstrated that it was an important starting point for them. However, other factors came in to play which prevented them from implementing the policy mandate. It could be said that the policy is 'blind' to issues of capacity and available resource.

The next chapter will describe the review of the literature carried out during the study which focusses on the emerging issues from the fieldwork. The literature looks at models and theories of change in technology integration in education and in other organisational contexts. Factors which support or resist change are identified and reviewed under different organisational contexts.

CHAPTER THREE

ORGANISATIONAL CHANGE FOR INTRODUCING NEW TEACHING AND LEARNING METHODOLOGIES

3.1 INTRODUCTION

This chapter presents a review of the relevant literature pertaining to the problem outlined in Chapter One in order to theoretically contextualise the process under investigation. The literature on organisational change was reviewed to explore a range of theoretical positions to provide a framework for the unfolding dynamics of the FCTVE case study. The aim was a review of the literature that would point the way for further explorations of the process with the study participants at FCTVE. The notion of bureaucracy was critical in the unfolding FCTVE case study and the review was directed at focusing on literature relating to change from bureaucracies to more entrepreneurial organisations.

As noted in Chapter One, there has been little attention paid by the research community to the introduction of new teaching and learning methodologies and the associated organisational change processes in technical and vocational education in general and none in the context of Botswana. The researcher has previously noted "*the increasing use of ICT in schools and higher education has largely passed the TVET sector*" (Mead Richardson 2011:11). As the phenomenon under study was the first initiative of its kind in Botswana, the lack of relevant research literature is not surprising. Consequently the researcher had to rely on research literature relating to the introduction of new teaching and learning methodologies in more developed countries and in different educational sub-sectors. It was also important to note that much of the research literature relating to technology integration in higher education relates to institutions which are many years into the process and not at the introductory phase as in the case study of FCTVE. Given the dearth of literature on the use of elearning in the context of developing countries, it is hoped that this study will contribute to the research literature base regarding the

process of introducing elearning generally and in TVET in developing countries in particular.

The literature relating more generally to the TVET sector in Botswana has been discussed in Chapter Two which described and analysed the external environment of the Francistown College of Technical and Vocational Education. In this chapter, research literature on the broad issues of organisational change and models of technology integration have been identified and considered.

A range of literature was reviewed from the initial stages of defining the research questions throughout the fieldwork. As noted in Chapter One, this was a real-world situation which required a multi-disciplinary study, drawing on research literature and findings from sociology, education and management. As advocated by Yin, the reading of the literature was useful to develop “*sharper and more insightful*” questions about the topic before starting the fieldwork (Yin 2009:14). The research questions guiding the study were, in the context of a technical and vocational college in Botswana:

1. What organisational structures and change processes are necessary for successful implementation of distance and elearning in the context of the Botswana government TVET system?
2. How are these structures and processes best managed in this context?

In considering these questions, the review of the literature focused on the broad themes of the relevant literature for the study. They included the nature of organisational change in education and models of technology integration. Thereafter theories of change are investigated as a framework for the change process at FCTVE. The factors influencing technology adoption and organisational change are considered, along with the concept of diffusion of innovation. Organisational culture and the bureaucratic nature of the TVET college are also explored.

3.1.1 Research in new teaching and learning technologies

The introduction of new teaching and learning technologies in tertiary education has been a popular research topic in both developed and developing nation contexts for more than 40 years. Conole notes that in the United Kingdom, “*a considerable body of research has been carried out on the development and use of learning technologies*”. She also notes that research on technology quickly becomes outdated but the literature on organisational and pedagogical issues remains pertinent (Conole 2002:6). In a meta-study of literature on success and failure in elearning projects Romiszowski (2004) reported a knowledge base of over one hundred articles.

Research in distance education has long been criticised as having a weak research agenda and has been accused of being atheoretical and overwhelmingly descriptive (Minnis 1985:90; Perraton 2000:1; Berge & Mrozowski 2001:1). Börje Holmberg, writing in 1986, carried out a meta-research of 300 studies on distance education and found it to be benefitting from knowledge and theory developed in other disciplines such as sociology, psychology, philosophy, history and economics. Holmberg then described distance education as an emerging discipline and refers to Popper as describing the task of scholarship as being both theoretical, to bring about explanation, and practical, to provide for application (Holmberg 1986:36). Later meta-studies suggest distance education research is generally simply descriptive and biased towards pedagogy and fails to study aspects of organisation, management of change, innovation and technology (Perraton 2000; Zawacki-Richter *et al* 2009). The literature which focuses on organisation, management of change, innovation and technology is most relevant to this study.

Research into new technologies is characterised by large gaps – particularly at the institutional and system-wide level where more rigorous research is required (Guri-Rosenblit & Gros 2011). Trucano notes that there is a lack of research focus on the impact of new technologies in support of national development goals which can inform policymakers (Trucano 2005). The literature overwhelmingly focusses on the integration of distance learning and technology into higher education and most frequently in the

context of developed countries. Datnow concurs that more strong theory is needed in educational change preferably theory combined with data (Datnow 2006:1).

3.2 ORGANISATIONAL CHANGE IN EDUCATION

Much of the literature reviewed referred to change as a non-linear or cyclical, complex and sometimes slightly chaotic nature of the change process. This was reflected in the literature as many authors refer to organisational change as a chaotic, complex process (Quinn 1985; Peters 1987; Fullan 1993, 1999, 2003; Conole, Smith & White 2007; Fink 2003; Schwering 2003; Scott 2003; Kearns 2004; Senge 2006; Stiles & Yorke 2006). Fullan, in particular, states *“the change process is uncontrollably complex and unknowable”* (Fullan 1993:19) and refers to his three books on educational change as the ‘chaos theory trilogy’ (Fullan 2003). Weber, also comments in his treatise on sociological method, that the social scientist has to make sense of a chaos of events and perceptions. *“Order is brought into this chaos only on the condition that in every case only a part of concrete reality is interesting and significant to us, because only it is related to the cultural values with which we approach reality”* (Weber 1949:78).

In his case study of a similar process of change towards more flexible teaching and learning approaches in an Australian University of Technology, Scott also notes the cyclical characteristic of change *“Change is not an event but is a complex learning and unlearning process for all concerned”* (Scott 2003:73). Although Scott’s work relates to higher education institutions in Australia, the concept of change as a complex process was found by the researcher to be reflected in the phenomenon under study in TVET in Botswana. Future practitioners in educational technology in TVET institutions would do well to note that the process is not necessarily clear and logical but each stage requires reflection and adjustment according to the responses of the participants involved.

Later in this chapter (Section 3.3.1) Lewin’s field theory (1951) will be discussed as the dominant theory of change adopted in the FCTVE case study. Burnes notes that *“parallels have been drawn between Lewin’s work and the work of complexity theorists”* and argued that *“the formulation and behaviour of complex systems as described by*

Chaos and Catastrophe theorists bear striking similarities to Lewin's conceptualization of Field Theory" (Burnes 2004:982). This is noted in order to highlight the relevance of this concept for both the guiding theory and the empirical work in this study.

3.3 MODELS OF TECHNOLOGY INTEGRATION

To attempt to cover this complex and potentially chaotic change process and effectively introduce new technology-integrated teaching and learning approaches at FCTVE, the Technical Advisers (TA) Team sought a model to guide the strategy and implementation. Different models were considered by the TA Team and college managers. There are many documented strategies for introducing new teaching and learning technologies in higher education and which take account of the chaotic dimensions of change. In the subsequent discussion, the main strategies that emerged from the literature are elucidated.

3.3.1 Khan – 8 Dimensions

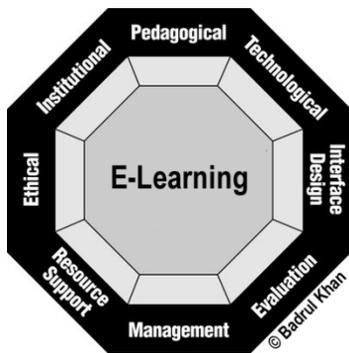


Figure 3.1: Khan eLearning Model

Khan proposed an elearning framework comprising 8 dimensions of the blended learning environment: institutional, management, technological, pedagogical, ethical, interface design, resource support and evaluation (Khan 2005). Khan noted that elearning represents a paradigm shift for the whole institution. This framework provided a useful checklist of areas to consider but did not adequately cover some of the important cultural aspects which were in play in the work at FCTVE.

3.3.2 Collis and Moonen 4E model

Collis and Moonen (2001) propose the 4E model which nests 4 components implying dependency although they claim the model proposes support to both top-down and bottom-up approaches. The components are institution, implementation, pedagogy and technology.

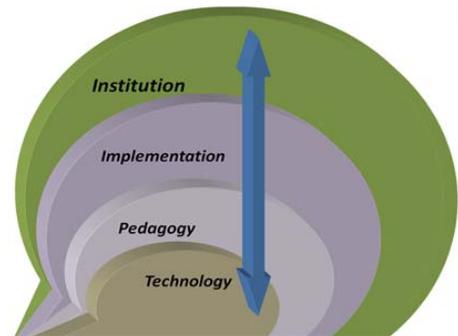


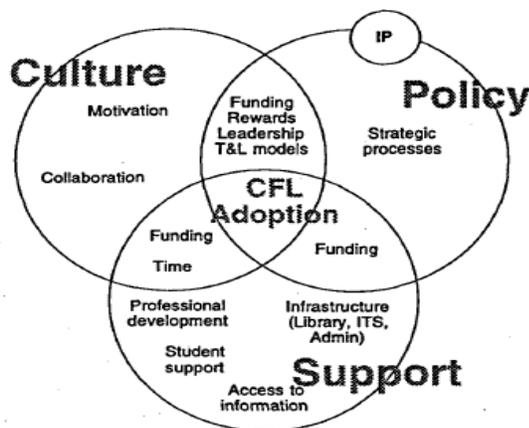
Figure 3.2: Collis and Moonen 4E

and technology. The 4Es stress the importance of ease of use, environment, personal engagement and educational effectiveness. Collis and Moonen have been researching technology integration in education since the early 1990s and they suggest that across all educational sub-sectors, a teachers' likelihood of using new technologies can be expressed in terms of these four factors.

3.3.3 Jones – PESTER

The PESTER model proposed by Jones at the University of Wollongong focuses on 6 elements; planning and promotion, education, support, training, encouragement and recognition and reward (Jones 2008). Although designed for a university environment, Jones notes that the PESTER plan could be used in any teaching and learning context. An analogy of a wheel is used where all the components are vital to keep the wheel in motion. The part of the wheel at the bottom keeps the vehicle grounded. But if one section stays at the bottom for too long (is given more weighting) then the vehicle will grind to a halt (Jones 2008:458). The issue of recognition and reward of teachers' new working practice arose in the FCTVE fieldwork and in that context was cited as a strong restraining force.

3.3.4 McNaught and Kennedy



Another model from the Australian university system links three major themes – policy, culture and support – for introducing what the authors call computer facilitated learning or CFL. The authors state that there needs to be congruence of these three factors if significant adoption of CFL strategies is to occur (McNaught & Kennedy 2000:3).

Figure 3.3: Culture – policy – support model

This model was also considered to be useful but in the case of FCTVE which is at the start of the process and is a national pilot activity, this model was found lacking in the influence of the external environment.

Cummings, Phillips, Tilbrook and Lowe (2005), in their 'middle-out' introduction of new teaching and learning technologies at Murdoch University in Australia, used this model in conjunction with the content – context – process model developed by Pettigrew and Whipp (1991). For this team, culture in the model represents the bottom-up approach, policy is identified with the top-down approach and support comprises a range of infrastructure and processes designed to facilitate the change process.

3.3.5 Stiles and York

In the UK higher education context, Stiles and Yorke note that there are three institutional approaches for the introduction of technology supported learning; (1) providing funding for projects by innovators, (2) top-down change driven by directive central strategy and (3) bottom up approaches making the technology available and promoting take up (Stiles & Yorke 2006:252). The bottom-up, top-down dichotomy is a recurring theme in the literature and the FCTVE case study and is discussed later in this chapter.

3.3.6 Scott Morton – MIT 90s model

The model was not designed for education contexts but was the product of an early investigation into the impact of information technology on organisational transformation (Scott Morton 1991). The MIT 90s model has been used by a variety of researchers and practitioners in an educational context (Yetton 1997; Holt & Thompson 1998; Uys 2000; Wills & Alexander 2000; Kearns 2004). Uys, in his study of the virtual classroom in New Zealand, pointed to the usefulness of the MIT 90s schema for considering the introduction of technology into tertiary education institutions. This model links the four factors of strategy, technology, structure and skills and roles around the central management processes (Uys 2000). Yetton used the MIT 90s schema to frame field research and analysis of 12 Australian universities' management of IT. The work of the

MIT 90s research group attempted to measure the impact of new ICTs on organisations with the goal of determining how organisations need to change to be effective. The MIT 90s work still has relevance for organisational transformation through ICT more than 20 years later.

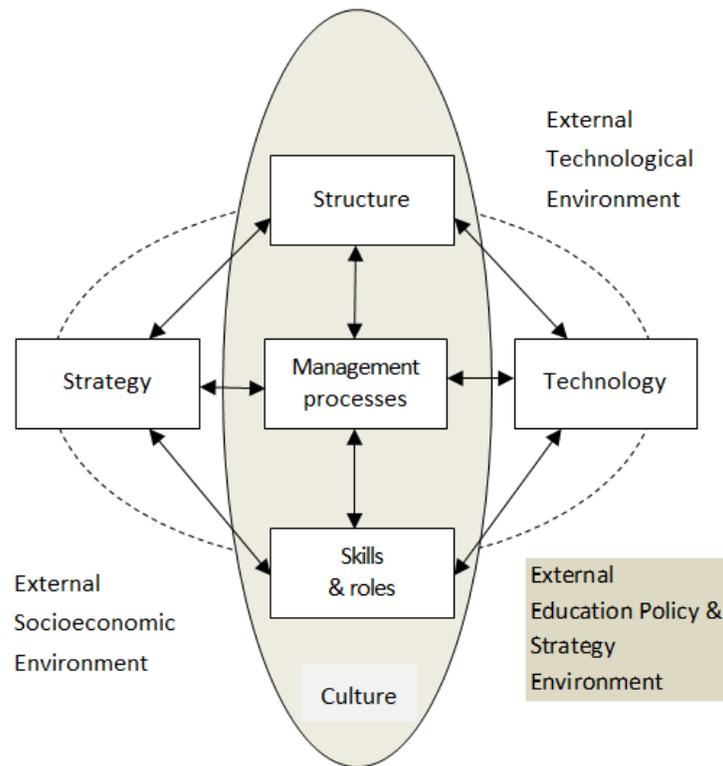


Figure 3.4: MIT 90s model of technology integration with additional policy and strategy environment

These models were considered relevant for analysing the approach to change in the FCTVE case study. The strategy adopted was most closely related to the MIT 90s model which puts management processes at the centre of a complex organisational system involving structure, strategy, technological infrastructure and the skills and roles of individuals – all within the context of the culture of the organisation. This model highlights the importance of the external socioeconomic and technological environments. Consideration of this aspect led to the identification by the researcher of a deficiency in the MIT 90s model as it did not provide for the external policy and strategy environment. In the case of FCTVE the external educational policy and strategy

environment was considered to be an important driver for change so the model was adapted to include this important element. The external environment elements of the FCTVE case, including the relevant educational policy and strategy were discussed in Chapter Two. Another critique of the MIT 90s model is that it does not adequately provide for processes which take place within the system. Kearns points to the drivers and pressures for change such as productivity and efficiency, innovation and growth, and how these are balanced against drivers for stability such as human resource development and a notion she calls preservation (Kerns 2004).

The element of organisational culture is not well developed in the MIT90s model and this will be shown to be a defining factor in the change process at FCTVE. In this case, both organisational and national culture brought restraining forces into the tension balance for equilibrium. This will be discussed in Section 3.8 of this Chapter and illustrated in Chapter 5 where the findings are presented.

The MIT 90s researchers concluded that there are six major impacts on organisations caused by the integration of technology that are considered relevant for the case study at FCTVE: technology leads to a shrinkage of time and distance; training in the use of new technology tools is paramount and the boundaries between job categories and tasks will be increasingly blurred; new organisational structures become possible and ad hoc teams will become a more attractive way to get jobs done; new methods of planning and control will be required for the management of interdependence; the constant flow of innovation and improvement requires a new strategic vision and highly defined implementation skills; finally, understanding the organisational culture and knowing what it means to have an innovative culture is a critical first step. The Concluding Chapter Six will elucidate how closely the FCTVE case study matched the findings of the MIT 90s researchers in these important dimensions.

The MIT 90s model represents the complexity of the change process when introducing ICTs as the five forces have to work in dynamic equilibrium and stability. As soon as there is substantial movement in any of the organisational elements a complex chain of

events may cause expected and also unexpected outcomes in other elements of the organisation. This is where the need for a dedicated management of the change process is indicated in order for the change effort to be fulfilled. The MIT 90s model was useful because the TA Team and the FCTVE managers focussed on the main elements depicted in the boxes – the management processes, skills and roles of staff, the organisational structure, new technology and a strategy for achieving the mandate of the new college. In addition, the concept of the five forces working in equilibrium dovetailed with the main change theory selected to guide the process – Lewin’s theory of force field analysis.

3.4 CHANGE THEORIES

3.4.1 Kurt Lewin – Field Theory, Group Dynamics and the 3-Step Change Model

Theories of change were considered in terms of how they would fit with the MIT 90s model for change. Kurt Lewin’s work on field theory, group dynamics and the 3-step change model (Lewin 1951) was considered to be the most persuasive. In field theory, it is necessary to identify the driving forces for change which act against the forces which resist change under the assumption that a system works to maintain equilibrium. Schwering notes that the goal of force field analysis is to help leaders and other stakeholders to identify and understand those forces likely to impact on the change process so that they can act on them. *“A force refers to any influence acting on an organization such that the organization’s state is change by the presence of that factor”* (Schwering 2003:361). For Lewin, *“...individual behaviour is a function of the group environment or ‘field’ as he termed it”* (Burnes 2004:981). His theory is that if the fields can be identified and measured the it is possible to understand not only why individuals and organisations act as they do but also what forces would need to be reduced or increased to bring about change. Schein, a long-time advocate of Lewin’s work notes that in this model, *“the stability of human behaviour was based on ‘quasi-stationary equilibria’ supported by a large force field of driving and restraining forces. For change to occur, this force field had to be altered”* (Schein 1995:2). Lewin himself notes, *“...group life is never without change, merely differences in the amount and type of change exist”* (Lewin 1951:199).

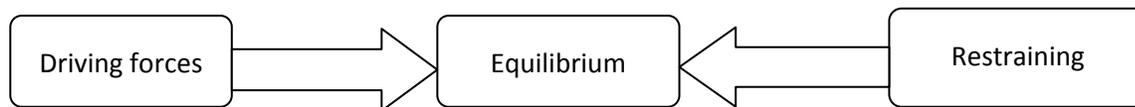


Figure 3.5 : Lewin's Force Fields of Change (Lewin 1951)

The extent to which this model applies to the FCTVE case is explained in Chapter Five, Section 5.5.1. Scott Morton in the MIT 90s research indicates that they found the Lewin three-step model to be useful for successful organizational transformation (Scott Morton 1991:21). Lewin has been criticised for being overly simplistic (Kanter, Stein & Jick 1992), particularly by the Culture-Excellence School led by Peters and Waterman (1982). Other researchers claim that Lewin's 3 step change process is found in diverse and unrelated disciplines including the transition process associated with death as well as being a dominant model in organisational change (Elrod & Tippett 2002). Lewin's work has been identified by researchers as offering an appropriate theoretical approach to technology innovation in educational institutions (Earle 2002; Schwering 2003; Kearns 2004; Lunenburg 2010; Campbell Gibson & Gibson 2011). Burnes maintains that *"his contribution to our understanding of individual and group behaviour and the role these play in organizations and society was enormous and is still relevant"* (Burnes 2004:978). Burnes concludes that criticisms of Lewin's theory of organizational change are based on a narrow interpretation of his work and notes the increasing evidence of applications of his approach to change.

Burnes notes that the Culture-Excellence theorists looking at Western commercial organisations in the 1980s considered them to be, *".... losing their competitive edge because they were too bureaucratic, inflexible and slow to change. Instead of the traditional top-down, command and control style of management ... stressed the integrated nature of organisations, both internally and within their environments"* (Burnes 2004:988). The researcher concurs with Burnes and found this example from organisational management to be useful in guiding thinking about the change process at FCTVE.

Earle, in his paper on the integration of instructional technology into public education in the USA, suggests that to bring about change the driving forces need to be increased because we have more control of these than we do the restraining forces, but this tends to be less effective as this generally results in an increase in tension with a quick return to the status quo (Earle 2002:8). Lewin also points to the likelihood of increased tension and conflict in the organisation if driving forces are increased without restraining forces decreasing (Lewin 1951). As Lunenburg says “...when we push people, they are likely to push back” Lunenburg 2010:6).

3.4.2 Fullan – Change Forces

The TA project was also guided by the seminal work on educational change by Fullan. Fullan’s treatise on educational change is based on his work in schools in Canada and the UK. However, the 8 basic lessons of the new paradigm of change (Fullan 1993:21) provide a set of generic rules which relate to educational change in all contexts. These lessons include the following key issues which were found to be pertinent in the FCTVE case study:

- You can’t mandate what matters
- Both top-down and bottom-up strategies are necessary
- Change is too important to leave to the experts
- Vision and strategic planning come later

These themes are considered in relation to the FCTVE case study later in this chapter in the relevant sections.

3.4.3 de Freitas and Oliver

Looking again at the implementation of elearning in higher education in England, de Freitas and Oliver (2006) proposed 5 possible models, or theoretical perspectives, for how change can be understood in this context. Their research question was ‘does elearning policy drive change in higher education?’ and they explored this question in relation to a university case study through the five perspectives of Fordism, evolutionary, ecological, community of practice and discourse-oriented. These

theoretical perspectives were considered not to be appropriate for the study at FCTVE as the organisation had not yet embedded the change sufficiently to facilitate this level of analysis.

3.5 FACTORS AFFECTING ORGANISATIONAL CHANGE

There appears to be a tacit understanding that generally, change in an educational context will be resisted (Anderson, Varnhagen & Campbell 1998; Janas 1998; Berge 1998; Jones 2004; Kearns 2004; de Freitas & Oliver 2006; Dudink & Berge 2006; Wrigley 2008; Lunenburg 2010, Campbell Gibson & Gibson 2011). Lewin's theory of change shows us that there are powerful forces at play which resist change in an organisation. Lewin is clear that we need to study and understand resistance in order to understand change processes. "*The practical task of social management, as well as the scientific task of understanding the dynamics of group life, requires insight into the desire for and resistance to, specific change*" (Lewin 1951:200). This was certainly the experience in the FCTVE case study and the literature provides an insight into the factors that facilitate and those that promote change. If the Lewin force-field theory of change management is accepted then resistance is a natural part of maintaining organisational equilibrium. This also suggests that a systems view of organisational change is needed as different parts of the system impact on the process.

The researcher agrees with Earle (2002:9) that there is a fine line between the barriers to, and facilitating factors in, organisational change related to educational technology integration. Through a literature review of research reports on technology integration, Earle identified six factors which could be both barriers to, and facilitators of, change. These factors are: access to hardware and software and funding, time for planning and skill development, technical and administrative support and resources, training and expertise, school cultures and traditions of teaching, vision and leadership. Most of Earle's factors emerged as critical issues in the FCTVE case study and are elucidated in the Findings chapter. This is an important note for management of change. The factors maintain their relevance – it is how they are handled that makes the difference between barriers and facilitation. Berge carried out a survey of online teachers in higher

education and categorised barriers to faculty uptake of online teaching and learning as “*situational, epistemological, philosophical, psychological, pedagogical, technical, social, and/or cultural*” (Berge 1998) and notes that the salience of the different factors is determined by the maturity of the activity. It is the contention of the researcher that in situations where this change is being introduced then the barriers are focussed on the psychological (mental models), pedagogical and cultural.

In the FCTVE case study the factors influencing organisational change emerged as:

- Role of vision and mission statements
- Leaders commitment to change
- Concepts of teacher utilisation
- Capacity building
- Time factors

3.5.1 Role of vision and mission statements

Researchers and practitioners are divided on the issue of a guiding vision and mission. The prevailing view is that the vision and mission should be devised at the outset of the change process (Scott Morton 1991; Earle 2002; Moore & Tait 2002; Dudink & Berge 2006). The importance of mission statements is described by Scott Morton in his introduction to the seminal MIT 90s research ‘The Corporation of the 1990s’. “*A clear mission visible to, and understood by, the organisation is a well-known pre-requisite for any major organisational change. However, when the issue at hand is organisational transformation, enabled by technology, it appears particularly important to invest a large amount of time and effort in getting the organisation to understand where it is going and why*” (Scott Morton 1991:20).

The importance of starting with the vision and mission statement is reiterated by Moore and Tait, “*It is the mission of a distance learning system that defines its role within the context of national policy. The mission may be directed towards particular purposes, target groups, regions, sectors or levels of education and training, and driven by particular values and philosophies of learning and education. The mission statement of*

a public institution will be part of a national policy" (Moore & Tait 2002:26). Dudink and Berge in their paper on change management in distance training, also confirm the importance of involving all stakeholders of the organisation from the early stages of the conception and formulation of the vision (Dudink & Berge 2006).

Vision statements should come later, suggests Fullan, "...because under conditions of dynamic complexity one needs a good deal of reflective experience before one can come up with a plausible vision" (Fullan 1993:28). Shared vision – which is crucial for success – evolves through organisational members working together. Senge describes the danger of imposing one person's or one group's vision on an organisation. This, he says, at best only leads to compliance and not to commitment (Senge 2006:206).

Wrigley in his analysis of school improvement is concerned about the positive connotation of the use of concepts like vision, mission and values and questions the validity of having to establish consensus amongst participants to bring about sustainable change (Wrigley 2008:130). The fact that there were many stakeholders sharing in the flexible learning mission without having an understanding of what flexible learning entailed added to the complexity facing this change intervention.

The view of the researcher is more aligned to Fullan in the belief that practice should inform policy and therefore vision statements should come later when participants have a better understanding of what is possible and relevant. However, in this government context in Botswana where policy statements are requested before any action takes place it seemed prudent to follow the MIT 90s model which states the importance of an organisationally accepted vision statement as a necessity for any major organisational change (Scott Morton 1991). In their paper on policy issues for distance learning in the American Community College system, Gellman-Danley and Fetzner note that when distance learning is introduced, there is intense focus on the technology but policy development and planning often receive little attention. They advocate giving greater prominence to questions of policy "*Asking the tough policy questions in advance can mitigate future bureaucratic problems and roadblocks*" (Gellman-Danley & Fetzner

1998:1). This was considered to be good advice as it was written at a time when American universities were grappling with the introduction of elearning to their distance learning systems and indeed proved prophetic for the FCTVE case.

3.5.2 Leaders' commitment to change

Writers on organisational change and new technologies emphasise the importance of commitment to change from the leaders of the institution. (McKersie & Walton 1991; McNickle & Cameron 2003; Kearns 2004; Mackenzie-Robb 2004; Luckin *et al* 2006; Davis & Fill 2007). In her case study of four UK organisations introducing elearning, Mackenzie-Robb notes that elearning projects often get only a top level management sanction rather than full-scale involvement and commitment and this can be a restraining factor on successful implementation.

The prevailing concept of how change is brought about at FCTVE was that it should be driven by the top management of the organisation. Senge calls this view "*a profound and tragic confusion*" stating that this traditional view of leadership is based on assumptions of peoples' powerlessness, their lack of personal vision and ability to master the forces of change. Senge notes that these deficits can be remedied only by a few great leaders (Senge 2006:319-321). It would be unrealistic to expect to find such high level leadership qualities amongst the management of FCTVE.

The researcher frequently heard comments from FCTVE lecturers and managers which indicate that the officials at DTVET were not very comfortable with the concepts and requirements of DFL. Wright, Dhanarajan and Reju (2009) point out that this is not unusual in developing countries when Ministry officials are trying to introduce elearning. "*Government and institutional personnel in developing countries often decide to employ elearning or online learning without fully realizing what it means for their students and their institutions*" (Wright *et al* 2009:2). But government has an extremely important role to play in supporting the development of elearning in post-secondary education and training (Bates 2001:31). Trood and Gale note this challenge in the development of flexible learning in Australia; "*Policy makers need to construct policy in such a way that*

they give adequate signals to those it affects about what is intended and to demonstrate some understanding of what these intentions might entail (Trood & Gale 2001:167). They say greater attention is needed to successful dissemination of the new policy. Implementing change regarding new technologies is a complex issue and according to Naidoo and Schutte, *“The problem is sometimes further compounded by a lack of vision, knowledge and appreciation of ICT in top government structures”* (Naidoo & Schutte 1999:89).

In her study of six of New Zealand's eight universities, Gunn (2011:71) quotes Duke, Jordan, and Powell (2008:2), who observe that *“generally there are significant shortcomings in the capability of senior management teams in [higher-education institutions] to identify and exploit the full strategic potential of technology.”*

Luckin et al note *“...to bring about changes that will impact on the availability of elearning resources, both human and technical, key individuals who control financial and administrative priorities need to believe in the enterprise”* (Luckin et al 2006:330). Luckin et al identified that a major obstacle to introducing elearning in their higher education institution in the UK was *“disinterest bordering on hostility from some of the senior management team”* (Luckin et al 2006). They attributed this to a problem caused by a divergent assessment of the need for change and low tolerance for change. Their response was to have their change agents operate in ‘stealth mode’ until sufficient managerial support could be generated and a senior management champion appointed.

3.5.3 Capacity building

Building the capacity of teachers and managers to cope with the new approaches was an important feature of the TA project which was, essentially, a capacity building project. This was based on the premise that teachers could not be expected to change their working practice unless they had the new competencies needed to integrate technology into their teaching. Many writers on technology integration in teaching identify the need to build technical capacity as a critical factor and cite teachers' difficulty in learning to use the new technologies as an important barrier to change

(Berge 1998; Earle 2002; O'Quinn & Corry 2002; McNickle & Cameron 2003; Stiles & York 2006; Zhou & Xu 2007; Jones 2008;). *“Professional development plays an important role in the diffusion of any innovation”* (Zhou & Xu 2007:524).

Fullan comments *“It has long been known that skill and know-how are central to successful change, so it is surprising how little attention we pay to it beyond one-shot workshops and disconnected training”* (Fullan 1993:16). In this respect, the change process at FCTVE was well founded within an integrated capacity building and staff development programme over a relatively long period of time. The TA Team attempted to integrate learning with doing but were some way off instilling any concepts of ‘personal mastery’ as advocated by Fullan (1993) and Senge (2006). The lack of success in bringing about change despite a comprehensive and well attended staff development programme and evidence that teachers had developed the skills, also demonstrated another important difference between the TAs and the teachers at FCTVE (see homogeneity and change agents later in this chapter). Senge describes this distinction well; *“People with a high level of personal mastery live in a continual learning mode ...personal mastery is not something you possess. It is a process. ... People with a high level of personal mastery are acutely aware of their ignorance, their incompetence, their growth areas”* (Senge 2006:132). The researcher observed this distinction between the teachers at FCTVE and herself and the other members of the TA Team.

3.5.4 Time factors

Teachers’ lack of time to develop new skillsets and create new learning resources is often cited as a barrier to technology adoption (Anderson *et al* 1998; Berge 1998; McNaught & Kennedy 2000; Butler & Sellbom 2002; Naidu 2004; Jones 2008; Zhou & Xu 2007;). Teachers need to spend time in training to develop new competencies in integrating technologies and it takes additional time to develop new learning materials to support changed teaching approaches. In particular, McNaught & Kennedy in their case study of a technological university in Australia note, *“Careful work planning to ensure*

that staff have time to learn new skills and manage new processes is essential' (McNaught & Kennedy 2000:9).

In a 2004 meta analysis of research into uptake of ICT by school teachers for BECTA, the British Educational Communications and Technology Agency, Jones reviewed more than 40 research papers from 26 different countries. The literature appeared to be exclusively from developed countries and only included studies where teachers had been surveyed. Jones reports that resistance can be seen in terms of teachers' unwillingness to change their teaching practices, and also in terms of institutions finding it difficult to re-organise to facilitate innovative practices involving ICT. The main determinant of teachers' level of engagement with ICT was their level of confidence in using the technology. Lack of time to develop personal skills and develop new learning materials is also a recurring theme. (Jones 2004). There were two critical time factors in the FCTVE case study; the first was teachers' time to develop new teaching and learning materials and the second was the *timing* of the reform as explored in Chapter Five on the findings of the study.

3.5.5 Teachers' rewards and recognition

Researchers raise the issue of reward and recognition of teachers who make the desired change in their teaching practice (McNickle & Cameron 2003; Naidu 2004; Palmieri 2004; Cummings *et al* 2005; Zhou & Xu 2007; Jones 2008; Campbell Gibson & Gibson 2011; Gunn 2011).

In studies of more developed education systems using distance and elearning, it is common for teachers to respond that their distance and elearning efforts are not recognised nor rewarded. Most frequently, and specifically in universities, it is reported that research publications count for promotion purposes and little credit is given for innovation in teaching and learning (Naidu 2004; Cummings *et al* 2005; Zhou & Xu 2007; Jones 2008; Campbell Gibson & Gibson 2011; Gunn 2011). Naidu notes that change is needed in both reward and support systems to promote change. "*In most*

instances, the longstanding existing reward and infrastructure support systems governing academic life and work will not suffice” (Naidu 2004).

Teachers’ existing contracts and concepts of teacher utilisation are also reported as a restraining force. In her paper on the move to flexible learning in vocational colleges in Australia in the 1990s, Palmieri quotes from a report of the Australian National Training Authority (ANTA) Flexible Delivery Working Party (1992:21) *“Current input-oriented key performance indicators based on student contact hours and the utilisation of teachers and facilities are inappropriate for flexible delivery. They are significant barrier to innovation and change”* (Palmieri 2004:92). Also in Australia, McNickle and Cameron carried out a study of technical and vocational (TAFE) institutions which were involved in flexible learning. They found that flexible delivery required teachers and managers to work in new ways that were outside the normal working practices and this was problematic, *“Managers considered that existing workplace agreements were far too inflexible to keep pace with the changes that were demanded by the multiple teaching and learning strategies that were being used in this new environment”* (McNickle & Cameron 2003:24). The FCTVE case study also found this issue to be a significant barrier to change and this is discussed in Chapter Five, Section 5.5.7 on barriers to change.

Ball relates educational reform to changes in the way teachers perform and are measured, or the concept of performativity. For Ball, *“Performativity is a technology, a culture and a mode of regulation that employs judgements, comparisons and displays as means of incentive, control, attrition and change – based on rewards and sanctions”* (Ball 2003:216). He indicates that education reform is not only system reform but a way to reform teachers as they are required to review their own working practice in the light of the reform. This was a useful lens through which to view the changes taking place at FCTVE when the teachers were required to re-think their mental models and resultant teaching practice through the introduction of new teaching and learning methodologies. *“What it means to teach and what it means to be a teacher are subtly but decisively changed in the process of reform”* (Ball 2003:218). Ball contends that policy reform

requires teachers to take on new roles as educational entrepreneurs and are increasingly subjected to regular appraisal and review. This will be shown to be an apposite description of the situation at FCTVE during the case study period.

3.6 DIFFUSION OF INNOVATION

The study of how technology use diffuses within an educational context has gained increasing attention (Rogers 1999; Uys 2000; Collis & Moonen 2001; Luckin et al 2006; Stiles & York, 2006; Jones, 2008). *“Diffusion is an important concept in sociology as enquiry seeks to explain the processes by which social practices flow amongst actors within a social system”* (Strang & Meyer 1993:487). The most renowned theory of diffusion of innovation was proffered by Everett Rogers first in 1962 and more recently in 2003.

3.6.1 Characteristics of innovation

Rogers’ theory seeks to explain the factors involved in the rate of innovation adoption in certain contexts. He contends that the characteristics of the innovation, as perceived by the people involved, impact on the rate of adoption. The characteristics are defined in terms of relative advantage, compatibility, complexity, trialability and observability. Rogers’ theory contends that if the people targeted by the innovation perceive it to be to their advantage, it is compatible with their existing values, it’s considered easy to use or understand, they can try it out without high risk and their adoption is more visible to their peers – then people are more likely or more quickly going to take up the innovation and change their behaviour (Rogers 2003:15). In the FCTVE study, it was found that very few of the lecturers considered the proposed new teaching approaches to be to their advantage and this was a strong resistive force against general adoption. This is linked to the lack of recognition or reward for demonstrating changed working practice. Rogers’ theory draws attention to the concept that change is about people adopting a new value system rather than the change per se. The issue of mind set, or teachers’ ‘mental models’ in Senge’s terms, came up regularly. Rogers reminds us that *“adoption of an innovation often requires the prior adoption of a new value system which is a relatively slow process”* Rogers (2005:15).

3.6.2 Categories of adopters

Rogers proposes that the adoption of innovation is somewhat inevitable but there are differences in the rate of adoption by different individuals in the system. Leaving aside the question of inevitability of adoption for the moment, it is well known that Rogers distinguishes five groups – innovators, early adopters, early majority, later majority and laggards (Rogers 2003:280). The change process at FCTVE, although not reaching an advanced stage, showed signs of possible identification of the participants according to Rogers classification. The first two teachers to adopt new teaching approaches became known as the innovators and a small number of teachers who started to make changes towards the end of the TA project could be recognised as the start of the early majority group. But there was not really enough take-up amongst the whole community to analyse the pattern of take-up against Rogers' proposed normal distribution bell curve. To return to the question of the inevitability of adoption, the FCTVE study proved that diffusion of innovation is not a foregone conclusion even when there are persuasive drivers for change – at least not during the period under study.

3.6.3 The concept of 'chasm' between early adopters and the early majority

Drawing on the diffusion of innovations theory of Rogers' (1962 & 2003) and Moore's (1991) contribution of the notion of a 'chasm' between the early adopters and the early majority, the researcher has previously noted the issue of a chasm between the innovators and early adopters at FCTVE (Mead Richardson 2009:9).

Geoghegan (1994) made the strongest case for the significance of this 'chasm' in the adoption of instructional technology. *"This gap is so significant in the case of instructional technology that it has so far stymied almost all efforts to bridge it. It has left us in a situation in which the early market seems to have approached saturation in its use of instructional technology; but in which mainstream adoptions are relatively few and far between"* (Geoghegan 1994:9). The experience at FCTVE would certainly support the widely accepted theory of the chasm in innovation adoption between early adopters and the early majority. Geoghegan suggests that lack of adoption is more to

do with an aversion to risk, inadequate support and the lack of a compelling reason to accept a relatively disruptive way of teaching rather than any aversion to technology (Geoghegan 1994). The observation of the researcher was that the lack of a compelling reason to change was the dominant factor for most teachers at FCTVE.

Although commenting on a very different development context, Palmieri (2004) notes the difficulties of reaching past the 'early adopters' of new teaching and learning technologies in education institutions in Australia, despite the considerable national government focus and funding to facilitate this adoption.

3.6.4 Paradigm shift

Teachers and Heads of Department spoke of the need for a paradigm shift in teaching approaches at FCTVE. The terms paradigm and (arguably) paradigm shift were brought into popular discourse by Kuhn in 1962 in *The Structure of Scientific Revolutions*. In calling for a paradigm shift in school improvement approaches, Wrigley summarises Kuhn's concept of paradigms as involving; "*key concepts, relationships and causes, models, problems and solutions and methods and instruments*" (Wrigley 2008: 131). Strong points out that a paradigm shift occurs when the dominant technology is replaced by something new and the thinking of the whole community shifts to accommodate the new infrastructure and ways of doing (Strong 2007:49). In the case of FCTVE and flexible learning, there was a need to support teachers to move away from the dominance of the face-to-face teaching model to the new paradigm of resource-based learning at a distance with students taking responsibility for their own learning. This was a major paradigm shift in the way the participants thought about teaching and learning. Earle concurs that "*Teaching with technology causes teachers to confront their established beliefs about instruction and their traditional roles as classroom teachers*" (Earle 2002:8). In describing the integration of instructional technology into American schools, Earle identified three stages or categories that teachers move through on their way to adopting pedagogic change – confidence, competence and creativity. However, this model did not offer much for the study at FCTVE as the change process did not become sufficiently embedded for any such stages to be identified.

3.6.5 Teachers' mental models

The concepts of mental models and personal mastery (Senge 2006) and 'personal vision-building' (Fullan 1993) became an important consideration. According to Senge, mental models are defined as "...*deeply ingrained assumptions, generalizations or even pictures of images that influence how we understand the world and how we take action*" (Senge 2006:163). Senge goes further and maintains that one of the strongest influences on lack of organisational change is the conflict between new approaches and the deeply held views of the participants about how the world works. This proved to be demonstrated at FCTVE as despite participation in a range of capacity building activities, the majority of teachers chose not to change their teaching approaches.

For Fullan, personal vision-building is a starting point for any organisational change. It is teachers' views of the future that brings about change. Fullan points out that "*people must behave their way into new ideas and skills, not just think their way into them*" (Fullan 1994:15). Trood and Gale in their analysis of the introduction of flexible delivery into the Australian VET system noted that while there was a well-articulated government policy and definition of flexible delivery, "*For those engaged in directing the activities of the VET classroom, it requires a major conceptual leap to take such a definition and relate it to practice, to what is actually done*" (Trood & Gale 2001:166).

3.6.6 Change agents

The role of change agents was an important aspect of the change process at FCTVE and it is discussed in many theories and studies, particularly in relation to technology change in higher education (McKersie & Walton 1991; McNaught & Kennedy 2000; Rogers 2003; Luckin *et al* 2006; Lunenburg 2010; Campbell Gibson & Gibson 2011). Lunenburg, in a paper on organisational change in education provides this definition: "*The individual or group that undertakes the task of initiating and managing change in an organisation*" (Lunenburg 2010:1). Luckin *et al* describe the importance of the role of the change agents as technical experts in a UK higher education institution (Luckin *et al* 2006). Rogers defines the change agent as "*an individual who influences clients*'

innovation decisions in a direction deem desirable by a change agency" (Rogers 2003:27). He describes the main role of the change agent being to facilitate the flow of innovations from a change agency to an audience of clients. In the case of FCTVE the change agency was DTVET and the clients were the teachers and managers in the college. Change agents would not be needed, according to Rogers, if there were no technical and social chasms between the change agency and the clients (Rogers 2003:368). The Findings of the FCTVE case study showed that although the change agency (DTVET) wanted the change there were problems associated with their own lack of understanding of the process of change.

The strategy of internal change agents for technology integration is well developed in Australia and had proven to be a powerful force for change. McNaught & Kennedy describe how Learning Technology Mentors were appointed throughout each department in their university and in some central support areas like the library. These 'champions' were released from teaching duties for one day a week to develop online materials and support their colleagues' learning in online teaching (McNaught & Kennedy 2000:16). The national policy initiative, *Australian Flexible Learning Framework for the National Vocational Education and Training System*, was designed to encourage accelerated adoption of flexible learning. The change agents in this initiative were the Flexible Learning Fellows, who were carefully selected senior and mid-level staff who were given special training and expected to cascade that training and mentor other staff in flexible learning (Palmieri 2004).

Luckin *et al* point to the importance of the credibility of the change agents in their study of the introduction of elearning into what they call (referring again to Rogers' diffusion terminology) a 'late majority' higher education institution in England (Luckin *et al* 2006). In this case, the change agents had credibility by being involved with national higher education and learning technology organisations in the UK. McKersie and Walton talk of the importance of champions in the process of ICT integration, "*Top management vision and the presence of a 'product' champion are crucial in this change process*". (McKersie & Walton 1991:244). Cummings *et al* (2005) note that in top-down approaches to

change the champions are usually senior management. In the 'middle-out' approach advocated by Cummings and his colleagues it is the middle managers who take on the champion role.

Again, we see that Fullan holds a different position. The eighth lesson of Fullan's New Paradigm for Change states that change is too important to be left to the experts and everyone in the organisation must be a change agent (Fullan 1993:39). Cummings *et al* support Fullan's premise stating that in bottom-up approaches to change, "*individual staff members champion their own area of change, harnessing whatever resources they can garner individually and often using their own time to manage the change process*" (Cummings *et al* 2005). At FCTVE, nearly all the participants expressed the need for the TA Team to support the introduction of new teaching and learning methods, although they only used the term change agent when it was introduced by the researcher.

3.6.7 Importance of communication

In a focus on staff development for change in education institutions, Janas stresses the importance of the impact of staff resistance and highlights the need for discussion and consultation in bringing about change (Janas 1998). Communication is also cited as a method to overcome resistance by Kearns (2004) and Luneburg (2010). Kearns reminds us that resistance is driven by fear of the unknown and communication can help to overcome the fear. The establishment of a new organisational structure called the Flexible Learning Strategy Working Group at FCTVE was an attempt to increase communication and dialogue about the change process within the college and encourage the innovators and early adopters to share their experiences. This development was also guided by Lewin who claimed that change aimed at individuals was likely to fail because the individual in isolation is constrained by pressures to conform and the focus of change should be at the group level, concentrating on group norms, roles and interactions (Lewin 1951).

Rogers raises an important issue when he notes that the technical expertise of the change agents is often a barrier to direct communication with the clients. In terms of

diffusion of innovation, Rogers describes diffusion communication as either homophilous (between individuals who are similar) or heterophilous (between individuals who are different). Homophilous communication is more likely to take place and to succeed in convincing people to change, as the individuals involved share many of the same views, social background etc. Rogers states that change agents tend to be substantially different from the people they are trying to persuade to change in terms of “*language differences, socio-economic status and beliefs and attitudes*” (Rogers 2003:368). This was true in the FCTVE case study where the three Technical Advisers charged with implementing the change of teaching approaches were all European with vastly different cultural and educational backgrounds from the participants.

The most wide scale use of flexible delivery in TVET is found in the Australian TAFE system. Trood and Gale argue that despite a strong policy framework, staff development initiatives and funding mechanisms, the successful implementation of flexible learning in Australia was more dependent on the personal networks of practitioners than on the government initiatives. They claim that communication and collaboration between practitioners was central to the diffusion of flexible delivery practice (Trood & Gale 2001).

3.7 APPROACHES TO CHANGE

The opposing approaches of top-down and bottom-up occurred frequently in the literature regarding technology infusion in higher education institutions (Fullan 1994; Berge & Kearsley 2003; Stiles & York 2006; Wrigley 2008) and particularly in Australasia (Uys 2000; Cummings *et al* 2005; Scott 2003; Gunn 2011). Stiles and York, in their study of technology supported learning at Staffordshire University in England, contend that there are three approaches to technology integration; funding for bottom-up approaches by innovators, top-down change driven by directive central strategy and funding for technology with initiatives to promote take-up (Stiles & York 2006). In a study of elearning integration in over 30 organisations in the USA, Berge and Kearsley found that bottom up approaches were most common. They note that their expectation, that they would find most examples of change driven by senior management, was not

met (Berge & Kearsley 2003). It should be noted that the organisations in this study were in more advanced stages of maturity in terms of elearning integration than FCTVE.

In the higher education sector in England there are many studies of organisational change through elearning integration (de Freitas & Oliver 2006; Grimshaw & Wilson 2006; Stiles & York 2006). Stiles and Yorke describe the process of introducing technology supported learning at their university as starting with funding for innovation projects driven by a central strategy and then later reinforcement with policy and institutional level procedures. The Staffordshire experience indicates that bottom-up approaches can founder or stall when policy and procedures are implemented at a later stage. This suggests that it is more effective to have combined top down and bottom up approaches with draft policy and procedures in place (Stiles & York 2006). Grimshaw and Wilson, on the other hand, propose that bottom-up approaches are more effective in universities because with good communication and collaboration the cultural barriers to change can be overcome (Grimshaw & Wilson 2006). De Freitas and Oliver note “*Both approaches have significant flaws; the one is not consultative and inclusive enough, and the other creates pockets of excellence and areas of inactivity*” (de Freitas and Oliver 2006:86).

3.7.1 Need for middle-out approaches

The situation is not as simple as a choice between top-down or bottom-up. Fullan is clear on this issue, “*Neither top-down nor bottom-up strategies for educational reform work. What is required is a more sophisticated blend of the two*” (Fullan 1994:1). In a case study of an Australian university, Cummings et al (2005) advocate a ‘middle-out’ model which is led by middle managers responding to the demands of innovative members of teaching staff but operating in the absence of strong leadership from either college executive or policy makers. Hannan (2005) found that even when innovation starts at the bottom, it has the best chance of success when the innovator has encouragement had support from the Head of Department or other person in authority. Researchers also note that longer term change strategies often start with one approach and evolve into the other (McNay 1995).

In a study of 6 of New Zealand's 8 universities implementing flexible learning, Gunn asks – ‘what is the missing link between policy and practice?’ and concludes “*The cultural norm of devising strategy at the top of an organisation and driving it downwards is useful in many respects, but where it often falls short in the context of flexible learning, is in its failure to foster grassroots involvement from the outset*” (Gunn 2011:70).

These different approaches are reflected at FCTVE by the evidence that on the whole, lecturers felt that bottom-up approaches are most acceptable but managers and Ministry officials were insistent on top-down approaches. Whichever the preference, the prevailing view was that in this context, only top-down approaches would be used and be successful.

The concept of top-down or bottom-up approaches to change as found in the literature, was discussed with various participants in the FCTVE change case study to better understand the most appropriate approach to change in that context. Referring again to the MIT 90s model, the TA Team considered the possibility of new organisational structures to support the change process and it was this that led to the establishment of a special working group of middle managers to lead the change process. This is discussed in Chapter Five, 5.6.1 – Establishing an organisation structure and strategy for change. The main organisational structure established to progress the change process at FCTVE was the Flexible Learning Strategy Working Group. This is explained in Chapter Five, Section 5.6.1 on organisational structures for change. The composition of this group was important – the middle managers of the college – as McKersie and Walton point out “*Middle management is at the crossroads of the forces for change: the drive and leadership that come from the top of the organisation and the involvement and initiative that must come from the bottom*” (McKersie & Walton 1991:263).

3.8 ORGANISATIONAL CULTURE AND BUREAUCRACY

The culture of an organisation is a powerful force for both promoting and resisting change. It was noted in Section 3.3.6 that although the MIT90s model provides for the influence of culture on change processes when integrating ICT into organisations, it is depicted as being outside the organisational boundary and is not given much attention. For Scott Morton (1991), culture is included in the 'grey ellipse' representing 'people issues' which are identified as being critical to the transformation process. McKersie and Walton (1991) note that "*an enabling culture and an adaptive organization appear to characterize successful implementations*" but they do not elucidate an enabling culture (McKersie & Walton 1991:244). The definition of organisational culture suggested by Schein was found to be useful when considering the organisational culture at FCTVE: "*the deeper level of basic assumptions and beliefs that are shared by members of an organisation, that operate unconsciously, and that define in a basic taken-for-granted fashion an organisation's view of itself and its environment*" (Schein 1985:6).

3.8.1 Organisational culture and change

Wrigley quotes the school improvement work of Louise Scholl in England who, "*...expresses culture in terms of positive feelings among staff: (1) shared goals – 'we know where we are going'; (2) responsibility for success – 'we must succeed'; (3) collegiality – 'we're working on this together,'*" Wrigley notes that this approach does not acknowledge that "*...some innovations might be ill-conceived, that professionals have a right and a duty to evaluate them critically, or that some changes should be resisted*" (Wrigley 2008:138). In the FCTVE case, the innovation was presented as a positive move towards improvement but the prevailing culture of the organisation caused the majority of participants to resist the change. In Chapter Five, there is evidence presented of the participants' views that the culture of the organisation did not support the desired change.

Fullan also states the importance of the effect of organisational culture on technology integration in schools. In a paper written with Smith entitled *Technology and the*

Problem of Change, he describes the dominant force of organisational culture over individual teachers' efforts to introduce technology. Fullan and Smith introduce the term 'reculturing' to describe the process needed to bring about organisational culture change along with the introduction of technology. They note "... *the combination of teacher learning through assisted professional development, organisational learning through the development of collaborative cultures and program coherence are essential*" (Fullan & Smith 1999:10). For Fullan, the most appropriate organisational culture is that of the 'learning organisation'. Other writers also note the importance of this concept (Marquardt 2011; Stiles & York 2006). The best definition of the learning organisation comes from Senge "...*organisations 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 how to learn together*" (Senge 2006:3). Stiles and York note that failure to integrate new teaching and learning technologies in higher education institutions is often associated with the failure of the organisation to learn from the experience (Stiles & York 2006).

It is this aspect which, in hindsight, can be said to have been missing from the work of the TA Team at FCTVE. There was focus on staff development but none on organisational culture change. However, it can be observed that a team of external consultants are unlikely to have any lasting impact on organisational change which can likely only be brought about by the deliberate actions of the college leadership.

In his paper on the impact of culture on the improvement of organisational effectiveness in a university library in Nigeria, Adeyoyin notes, "*Corporate culture can work for an organization by creating an environment that is conducive to performance improvement and the management of change. It can work against an organization by erecting barriers that prevent the attainment of goals*" (Adeyoyin 2006:1). Either way, the potential effect of organisational culture is very powerful. From a practical point of view, in her study of American universities in advanced stages of elearning development, Zellweger notes that "*Cultural conditions such as support traditions or organizational cultures are difficult*

to influence in the short term" (Zellweger 2005:12). This was considered a pertinent observation regarding the time factor and organisational culture change.

3.8.2 Bureaucratic culture and structure

The prevailing organisational culture of FCTVE is linked to the prevailing organisational structure which is bureaucratic. This issue was raised by a number of participants, particularly Heads of Department and Principal Technical Education Officers at DTVET. Bureaucracy emerged as a defining concept and led to further investigation of Weber's work on ideal types and the relationship of bureaucracies to change. Weber says bureaucracies are characterised by a division of labour with official sanctioned authority and responsibility clearly defined for each role; the roles or positions are organised into a hierarchy of authority with a chain of command; employees are appointed (not elected) on the basis of merit and qualifications and are paid a salary; and the organisation is governed by strict rules and controls in relation to official duties (Weber 1978:225). The TVET colleges in Botswana operate as government bureaucracies and, as seen in the FCTVE case study, display all the characteristics of the Weberian ideal type. It was clear that the teachers and managers see the institution as a bureaucracy and are comfortable with the structure and organisation.

Anderson notes that "*For Weber, bureaucracies are an end-point of the evolution of social organization from more traditional to more rationalistic bases of social order. Bureaucracy and the bureaucratic order are inevitable*" (Anderson 2004:6). Weber describes bureaucracy as permanent or even indestructible (Weber 1978:987). But he also notes that this is not necessarily a positive development and that bureaucracy may "*stifle enterprise*" (Weber 1998:365). Anderson contends that Weber was worried that increasing rationality would strip innovation from society and considered how this momentum might be checked. He proposed that only the rise of the entrepreneur might counter the bureaucratic 'type' (Anderson 2004:8). This resonates with the view of the researcher that the technical college (and by default the managers and teachers in it) needs to become more entrepreneurial in order to sustainably integrate new teaching and learning technologies in flexible programme delivery. Suleiman points out that

Weber's critics say, *"In a world of rapid change, technological revolution, global economic competition, demassified markets and educated workforce, demanding customers and severe fiscal constraints, centralized, top-down monopolies are simply too slow, too unresponsive and too incapable of change or innovation"* (Suleiman 2003:28).

The concept of bureaucracy was taken as significant because of the resonance with observed bureaucratic processes and behaviours. Weber contends that there are four motivations for human behaviour; emotion, custom or tradition, ethical or religious values and rational, goal-oriented behaviour, which he calls *zweckrational*. This is social action in which the means to a particular goal are rationally selected. Participants were demonstrating that they understood the rational for flexible learning and freely participated in staff development and training activities – but without a specific instruction from persons above them in the hierarchy, they would not practice it. Weber saw the growth of bureaucracy in society as the basis for growth of formal rationality. *"Bureaucratic administration means fundamentally domination through knowledge. This is the feature which makes it specifically rational"* (Weber 1978 :225).

In a discussion on the dysfunctions of bureaucracy, Merton points out that *"Actions based upon training and skills which have been successfully applied in the past may result in inappropriate responses under changed conditions [author's emphasis]. An inadequate flexibility in the application of skills will, in a changing milieu, result in more or less serious maladjustments"* (Merton 1957:196) Here, Merton is referring to Veblen's concept of *"trained incapacity"* (Veblen 1914:347). This seems a good description of the case at FCTVE where teachers were applying the rules of practice which had worked in the past under changed conditions of innovation in teaching approaches. Most of the teachers and managers continued the working practice with which they were comfortable, rather than change their behaviour. Merton notes that there is goal displacement when adherence to the rules becomes an end in itself.

Harrison and Stokes (1992) conceptualised organisational culture into four types or orientations: power, role, achievement and support. Handy expanded these orientations into organisational cultural types in *Gods of Management* (1995). Bureaucratic organisations are identified as having a role culture characterised by logic and rationality. Handy's role culture reflects Weber's bureaucratic ideal type being based on a hierarchical structure which is "*co-ordinated at the top by a narrow band of senior management...*" (Handy 1993:185). Importantly, Handy notes that "*performance over and above the role prescription is not required and indeed can be disruptive at times*" (Handy 1993:185). These characteristics are clearly displayed at FCTVE and likely in any government technical college in Botswana. Handy makes it clear that role cultures are slow to see the need for change and slow to change even if the need is recognised. So the bureaucratic organisation of the college works against it when a systemic change is proposed. Indeed, it appeared as if the main actors in making the change – the lecturers – used the organisational structure as a reason for not changing. So the more effective approach would have been to use the bureaucratic hierarchy with its rational rules and authority to bring about the change. This goes directly against Fullan's first lesson of the new paradigm of change – "*you can't mandate what matters*" (Fullan 1993:21), but that is the source of another dissertation.

Handy describes a task culture which is job-oriented and is more adaptable. The task culture comprises individuals as experts, working in teams to harness the power of the group to improve efficiency. Decision making is done entirely within the group with the one goal of achieving the objective of the task. If this organisational culture could be promulgated in technical colleges, it is possible that change would happen more readily (Handy 1993:187).

Mintzberg described universities as professional bureaucracies and named resistance to change as one of their main characteristics (Mintzberg 1979:348). Reborá and Turri note that the "*... professional bureaucratic nature of universities make it impossible for top management to exercise sufficient top-down leadership to overcome resistance to change*" (Reborá & Turri 2010: 12). The researcher observed that technical colleges in

Botswana more accurately resemble Mintzberg's machine bureaucracy in one important aspect – centralized power for decision making. The ideal type of bureaucracy as defined by Weber more closely resembles the machine bureaucracy with standardized responsibilities, qualifications, communication channels and work rules as well as a clearly defined hierarchy of authority (Mintzberg 1979:315). Rogers suggests that, "*Organizations today are obviously quite different from the structures described by Max Weber*" (Rogers 2003:407) but as noted earlier, it was the experience of the researcher that FCTVE displayed all the characteristics of the Weberian ideal type and the fieldwork revealed that this contemporary bureaucracy is not so far removed from the bureaucracies described by Weber.

Perhaps a more useful concept is that of an organisational profile rather than a type. McNay (1995) describes 4 different cultures which typify higher education institutions: collegial; bureaucratic; corporate; and enterprise. He maintains that institutions have a profile across all four cultures but one type tends to dominate and they shift over time, moving (in the case of universities) from collegium towards bureaucracy and to survive in the 21st Century they must develop a culture of enterprise and corporation. In his study of higher education institutions in America, Elwell posits that changing pressures to increase productivity and efficiency, provide greater access, use technology and distance methodologies to achieve economies of scale lead to increasing bureaucratization of educational institutions (Elwell 1999).

Ritzer proposes a new name for modern bureaucracy, using the McDonalds fast-food chain as a metaphor for the increasing rationalisation of society. He notes the increasing bureaucratisation and rationality of higher education in North America referring to the 'McUniversity' and points to the role of technology in supporting this increasingly rational approach (Ritzer 1992). Hartley used this metaphor to consider the 'MacDonaldization' of the Scottish higher education system, noting "*The economic imperative is to do more with less. Whatever is to be spent must meet the priorities of government. Accordingly, a solution rooted in Weberian bureaucratic rationality has been sought*" (Hartley 1995:420). Hartley is drawing on Ritzer's thesis that there is

increasing emphasis on efficiency, calculability, predictability and control in higher education. Weber maintained that that bureaucracy was such an efficient and powerful means of control that, once established, the momentum of bureaucratization was irreversible (Weber 1978). Perhaps McDonaldization is the new face of bureaucracy.

Weber highlights the importance of legal rational authority in the bureaucratic ideal type. One of the most interesting and long standing theories of innovation and change comes from HG Barnett who contends that the level of dependence on authority is a critical element in the degree of adoption of innovative behaviour. Barnett's theory – that there is a positive correlation between individualism and innovative potential – has been in circulation for nearly 50 years and has guided the work of ethnographers such as Fetterman (2010:7). Barnett explains "*When individuals are taught to revere and fear authority as the ultimate source of the good, the true and the proper, they cannot be expected to have variant notions*" (Barnett 1953:65). Chapter Five will consider issues of individualism and acceptance of innovation.

3.9 THE ENTERPRISE CULTURE AND ORGANISATION

Building on the concept of the MacDonaldisation of higher education, there is an emerging new cultural form within higher education institutions in developed countries, particularly Australia, and this concept was explored as a possible alternative to the bureaucratic organisational structure and culture. Although higher education institutions have a different relationship with government than TVET institutions in Botswana, they may ultimately face similar external pressures. Marginson and Considine propound that universities are steeped in history and are slow to change but they are being forced to change by external pressures to become what these authors call 'enterprise universities' (Marginson & Considine 2000). Reinvention of higher education institutions in Australia has taken three forms: they have become entrepreneurial, gone international or embraced distance education. This situation may also be true of the bureaucratic structures of TVET in developing countries. External pressures are leading to the identification of five trends in governance, according to Marginson and Considine (ibid); new types of institutional managers; new organisational structures; increased flexibility

in personnel and resources; a reduction in the influence of academic disciplines in governance and higher levels of budgetary autonomy devolved to middle managers coupled with responsibility to achieve set targets. The concept of the enterprise institution and how it could relate to TVET colleges in Botswana will be discussed in Chapter Six.

3.10 CONCLUSION

The ongoing review of the literature as issues emerged from the fieldwork was informative and pointed the way for further explorations of the process with the study participants at FCTVE. The literature on diffusion of innovation, particularly those studies which applied Rogers' theory in a practical context, was especially illuminating. Unfortunately the diffusion of flexible learning at FCTVE did not reach such an advanced stage that the main elements of diffusion theory could be analysed.

The concept of bureaucratic structures in government TVET colleges was important and the literature relating to the changing nature of higher education institutions from more bureaucratic to more entrepreneurial was illuminating. It was reassuring to return to the seminal work of Weber on bureaucracy and work forward from there through the concepts of organisational culture of Handy and Harrison. The change-resistant characteristic of bureaucracies was salient. The literature points to how resistance can be both individual and institutional and has different and dynamic manifestations.

New trends in higher education institutions in developed nations, whilst operating in a very different context, have not been ignored. One of the effects of globalisation is that lines of demarcation between developed and developing nations and their post-secondary educational institutions are blurring so developments in these different context is worthy of note. Ritzer's, MacDonaldisation of universities, Ball's concept of performativity and Marginson and Considine's enterprise university are all interesting lenses through which to view the findings of the FCTVE case study.

Further references to the literature are interwoven in Chapter Five which presents the findings of the field work at FCTVE. The next chapter describes the research methodology and describes how the fieldwork, data collection and analysis was carried out.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.1 INTRODUCTION

Chapter One described the locus of this research as the new government technical and vocational college in Francistown, Botswana. It described the aim of this study as identifying the organisational structures and change processes that are necessary for successful implementation of distance and elearning and asks how these structures and processes are best managed. In Chapter Two, the FCTVE external environment was examined to establish the socio-economic, technological and education policy context of the college. Chapter Three reviewed theories, models and practitioner research that relate to the concept of organisational change and new teaching and learning methodologies.

This chapter describes the process of approaching, designing and carrying out the research. It describes the research paradigm which leads to the design of the research strategy and data collection methods. The chapter presents the methods used to collect the data which informed the conclusions made in this dissertation. An explanation is given why these methods are best suited to this study and why other methods were rejected. It covers a discussion of ethical considerations and looks at the research constraints. The important issue of reflexivity is discussed.

The research took the form of an ethnomethodological longitudinal case study of the processes of change as new teaching and learning technologies and approaches were introduced at the Francistown College of Technical and Vocational Education (FCTVE). A process study is particularly useful where a new educational approach is being tested which, if successful, may inform policy decisions and be replicated elsewhere. By understanding the dynamics of the process it may be possible to isolate critical elements which contribute to the success or failure of the innovation.

The fieldwork for this longitudinal case study took place within an interpretive paradigm over a period of 30 months. The approach was ethnographic and the data collection methods included documentary analysis and participant observation. Focussed interviews were carried out with a purposive sample of key respondents in order to further explore observations or casual conversations. Interviews also facilitated greater access to the meaning the participants gave to their actions.

4.1.1 Literature Review

In qualitative research the literature review can be done before, during or even after the field work. According to Patton, "*Reviewing the literature can present a quandary in qualitative inquiry because it may bias the researcher's thinking and reduce openness to whatever emerges in the field*" (Patton 2002:26). To facilitate the study of significant emerging concepts, the researcher elected to review the literature both before and during the fieldwork. As participants raised new concepts during the data collection, these were included in the literature review. Patton quotes Marshall and Rossman (1989:38-40) who note that reviewing the literature during fieldwork permits "*a creative interplay among the processes of data collection, literature review and researcher introspection*" (Patton 2002:226).

4.2 RESEARCH PARADIGM

Despite that in 'The Structure of Scientific Revolutions' Kuhn (1962) insisted that the concept of paradigm is inappropriate for social science, it is still useful to think of the research paradigm in social science in terms of what subject is to be studied, what kinds of questions need to be asked in relation to this subject, and how the findings should be interpreted. According to Guba and Lincoln (1994:105) the research paradigm is "*...the basic belief system or worldview that guides the investigator, not only in choices of method but in ontologically and epistemologically fundamental ways.*" Although he doesn't use the term, the concept of paradigm equates to what Senge calls *mental models* (Senge 2006:8) and this is demonstrated as an important concept in the findings of this study.

The paradigm is essentially normative, guiding the researcher in how to approach the inquiry. Patton describes how paradigms are “*deeply embedded in the socialization of practitioners*” (Patton 1990:37) which can give rise to predetermined decisions about what constitutes valid research methods. Patton warns that this may reduce methodological flexibility and adaptability.

This inquiry aimed to describe and explain the phenomenon being studied from the perspective of the individuals involved. It was important to understand how individuals in a specific situation interpreted that situation. Weber describes sociology as “*a science concerning itself with the interpretive understanding of social action and thereby with a causal explanation of its course and consequences*” (Weber: 1978:4). Individual and group meanings, motivation for action and interpretations of situations must be understood, including limitations and constraints on actions. Weber attempts to do this and develop a methodology in his interpretive social science. Even though Giddens (1993) claims that Weber’s interpretation and explanation of action is obsolete, these guiding tenets were found to be useful. Within the interpretive paradigm, researchers endeavour to understand the subjective world of individual experience. Information was sought from the experiences of the people involved in the process being studied – college managers, staff, policy makers and advisers.

4.2.1 The research questions

The study started with two initial questions relating to the introduction of new teaching and learning approaches and technologies at Francistown College of Technical and Vocational Education:

1. What organisational structures and change processes are necessary for successful implementation of distance and elearning in the context of the Botswana government TVET system?
2. How are these structures and processes best managed in this context?

The case study focused on the people involved in this change process and how they experienced it. The focus on the research subjects’ experiences are fully accounted for

in the interpretive paradigm which aims to uncover how the participants interpret the situation rather than as defined by the researcher (Cohen *et al* 2000:22). Glaser and Strauss contend that in qualitative research theory is emergent from the data generated by the research and does not precede the fieldwork but follows it. (Glaser & Strauss 1999).

4.3 SELECTING THE RESEARCH APPROACH

Traditionally, the first question researchers attend to in the design phase is whether to use qualitative or quantitative methods. Merton & Kendall are quoted in Cohen *et al* (2000: 45) as having identified this as an invalid dichotomy, extolling the researcher to identify a combination of both approaches and make use of the valuable features of each (Merton & Kendall 1946:556). As Patton reminds us, both qualitative/naturalistic inquiry and quantitative/experimental enquiry seek honest, meaningful, credible and empirically supported findings (Patton 2002:51). In this study, the fieldwork was guided by a qualitative approach. Qualitative research is naturalistic in the sense that it takes place in a real-world setting and the researcher does not attempt to manipulate the phenomenon of interest (Patton 2002:39). Qualitative researchers reflect on their own perspectives and thinking on the nature of enquiry and epistemology (Guba & Lincoln 1994).

4.3.1 Qualitative, naturalistic enquiry

The naturalistic approach focuses on a sociological process over time and attempts to minimise manipulation of the actors in the study setting. Patton suggests the useful concept of the researcher having “*empathic neutrality*” (Patton 2002:49). Empathy is about being able to understand the position, motivation, experiences and worldview of others. A credible research strategy requires the researcher to demonstrate neutrality regarding the subject being studied and provides guidelines against manipulating data to arrive at preconceived truths. The value of reporting both confirming and disconfirming evidence is emphasised. In this study however the researcher recognised that it was not possible to assume a neutral observer stance. It was recognised that the entire research intervention, from conceptualisation to interpretation of the findings was

prone to the subjective interpretation of the researcher in interaction with the research subjects. This was in keeping with the interpretative approach informing the research intervention.

This study therefore differed from the positivist approach which uses quantitative and experimental methods to test a hypothesis and was deemed inappropriate for this study of process. While qualitative research is often accused of being less scientific and less rigorous than quantitative experimental research, in this study, and following the work of Weber, this is an advantage for the social scientist over the natural scientist – the ability to understand natural phenomena. *“We can accomplish something which is never attainable in the natural sciences, namely the subjective understanding of the action of the component individuals”* (Weber 1978:15). This study aimed to find out ‘how’ and ‘why’, rather than ‘what’ and ‘how many’, so a positivist/quantitative approach requiring the testing of a predetermined theory or causal relationship was deemed inappropriate. *“Such questions deal with operational links needing to be traced over time, rather than mere frequencies or incidence”* (Yin 2009:9). It was for this reason that the study elected to use open ended, semi-structured questions, rather than standardised quantitative questions to enable the researcher to understand and capture the point-of-view of the people without predetermining those points of view through prior selection of questionnaire categories (Patton 2002: 21).

Open ended questions rather than standardized, qualitative questions were considered more appropriate as they enable the researcher to capture the respondents’ point of view without predetermining that point of view through questionnaire categorization. Furthermore the respondents themselves were able to participate in the various phases of the research – and to use the findings for improving their practices.

Having settled on qualitative research with a focus on understanding participants own experience of the phenomenon under study, an ethnographic approach was chosen. Ethnography tries to understand the culture of a group of people. Culture is a collection of behavior patterns and beliefs that constitute *“standards for deciding what is,*

standards for deciding what can be, standards for deciding how one feels about it, standards for deciding what to do about it and standards for deciding how to go about doing it" (Goodenough 1971:21-22). Culture is an important concept in organisational studies and the ethnographic approach was considered to be the most appropriate given the research context.

4.4 RESEARCH STRATEGY

In order to establish a research strategy, a researcher can consider the research questions, investigate various research approaches, articulate their own epistemological view and consider their own position in the research process. A research strategy provides a guiding framework for research design, data collection and field work and data analysis (Patton 2002). The chosen interpretive paradigm suggested a qualitative methodological strategy. Guided by the notion of *verstehen* the researcher attempted to attain an empathetic understanding which, according to Weber, emphasises the importance of comprehending the motives and feelings of people in their own socio-cultural context. Weber stresses that *verstehen* is not just intuition or sympathy but is the product of systematic and rigorous research which aims to identify meaning behind observable events (Ritzer 1992:116) *Verstehen* can be of two types: *aktuelles verstehen* is understanding from direct observation; and *erklärendes verstehen* or explanatory understanding which is a rational understanding of motivation which takes account of the wider context of meaning involving facts which cannot be derived from immediate observation (Weber 1978). "*Understanding is only possible with knowledge of the specific organisational context in which it is grounded*" (Cohen, et al 2000:20-21).

The research context defined the most appropriate methodology for undertaking the study. Because the researcher was a participant in the phenomenon under study, an ethnomethodological approach was employed to benefit from the potential of participant observation. The research took the form of an ethnomethodological longitudinal case study of the processes of change as new teaching and learning technologies and approaches were introduced at the Francistown College of Technical and Vocational Education. The time period was the first two years of the existence of the college.

4.4.1 Flexibility in research design

The introduction of new teaching and learning technologies at FCTVE was essentially a naturally-occurring experiment and according to Patton an ethnomethodological approach, is appropriate to study what people do to make sense of a situation (Patton 2002:111). In a naturally occurring experiment, people are forced into an unexpected situation and have to make sense of what is happening. This was an innovation as the Department of Technical & Vocational Education & Training, in implementing national education policy, wanted to see if distance and elearning approaches could be used beneficially in their new flagship college. When the teachers and managers arrived at the new college, they found that they were required to approach their profession – teaching – in new ways. The research was interested in how the participants made sense of their new situation which was a critical aspect of the opening of the new college.

Flexibility in research methodology was important as the design unfolded as the fieldwork progressed. “... *good research does not need to begin with theory*” (Perraton 2000:4). The approach suggested the initial focus, plans for observations and interviews and even some early questions, but the inductive nature of the enquiry made it inappropriate to produce testable hypotheses or have fixed ideas about data collection tools or population samples. “*Naturalistic research is first and foremost emergent*” (Lofland *et al* 2006:32).

4.4.2 Assumptions

Research is founded on assumptions as it is not possible to ‘know’ everything in order to understand. An assumption is a belief that something is true but it will not be tested in the research process. The choice of research methods was based on the assumption that understanding emerges most meaningfully from an inductive analysis of detailed descriptive data gathered through direct contact with participants. In this research context, assumptions were made that:

- conclusions could be drawn about the process of change by studying government policy documents, observing the actions of the people tasked with implementing those policies and discussing their actions with them
- meaningful information can be gained from the actors involved in the process through participant observation and semi-structured interviews
- an ‘insider-outsider’ researcher can observe and comment meaningfully on the process
- the study of a single case can be both intrinsically informative and sufficiently generalisable to similar cases in the same contextual system to inform future policy and practice in the use of new teaching and learning technologies in the Department for Technical and Vocational Education & Training.

This last assumption is potentially very wide. There is a complex relationship between research and policy and research does not feed directly or simplistically into policy-making (Anderson and Biddle 1991). This research is a case study of a single technical college and national policy makers will need to evaluate for themselves the claims made for generalisation. According to Wallace and Poulson (2003), researchers should guard against making broad claims for generalization when there is insufficient evidence that what is found in one specific case also applies to other cases. Research may only be used if it is politically acceptable – if it reflects the direction in which policy makers wish to move.

4.4.3 Longitudinal case study

Yin defines the scope of a case study as being “... *an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context*” (Yin 2009:18). He notes that the boundaries between the phenomenon and the context are often not clearly evident. This is a close description of the FCTVE case study conducted by the researcher. Cohen *et al* (2000:183) indicate that there are many classifications of case studies citing Stake (1995), Stenhouse (1985), Merriam (1988), Sturman (1999) and Yin (1984). The ‘case’ in this study is Francistown College of Technical & Vocational Education and is most accurately categorised as Merriam’s interpretive type or Yin’s

explanatory type (Merriam 1988; Yin 2009). The behaviour of the actors in one specific social entity (the college) was intensely observed and analysed over a prolonged period with a view to establishing generalizations about the wider system to which that college belongs. This naturally occurring experiment took place over an extended period in several distinct phases; from when the Technical Advisers were contracted and staff appointed in late 2006, before the college opened in April 2007, after the staff and Technical Advisers moved into the college to prepare for opening, to students being admitted and the end of the Technical Advisers' contract. The study took place over the period October 2006 to March 2009 – a period of 30 months. It took the form of a cohort study of the same people over an extended period. Cohort analysis is useful in sociological research to show how individuals' actions change and fit together within the whole organisational or social system (Cohen *et al* 2000:176).

A longitudinal study collects data contemporaneously rather than retrospectively which may improve the reliability of the data as respondents do not have to rely on their selective or false memory of occurrences. Exponents of the longitudinal study such as JWB Douglas stress the importance of contemporaneous data collection in maintaining accuracy (Douglas 1976:18). This provides greater opportunities for the researcher to tailor the focus of the questions developmentally and ask the right questions at the right time. A longitudinal study enables change to be observed and recorded on micro and macro levels to construct a view of the whole system. The dynamics of the change can be recorded along with the transitions between different behaviour displays. As a participant observer, findings could be discussed and further explored with participants as the field work progressed.

Research over an extended period can cause challenges in securing the participation of the respondents as it involves repeated contact. However, in this case, there was daily interaction between many of the respondents at the college and the researcher. But sample mortality was an issue when returning for second interviews with some of the key respondents due to the dynamic nature of staff posting with the DTVET.

Rebora and Turri, in a study of change management in universities, claim that “*there is widespread conviction that case studies are useful when studying change*”. To support their claim, they cite Johnson-Cramer, Cross & Yan (2003), Muratbekova-Touron (2005), Van de Van and Poole (2005). They also note that there are many potentially conflicting interpretative criteria in the analysis of empirical evidence in organisational change (Rebora & Turri 2010:287). Case study research focuses on a single case but takes cognisance of the influence of its social and other contexts, or systemic environment. We can see the individual case as a system. Some features of the case which are within the boundaries of the case but other important features may be outside the boundaries of the case but still within the system (Stake 2005).

4.5 ETHICAL CONSIDERATIONS

Careful consideration was given to ethical issues in this study⁹. Ethical considerations require researchers to balance their professional values and research objectives with the rights of their respondents to be treated fairly. The qualitative researcher faces a challenge in aiming for accuracy of reporting whilst ensuring that the self-esteem of respondents is not undermined, nor confidences betrayed. The principle of equal respect as propounded by Strike (1990) is important as it requires researchers to see respondents as ends rather than means and to regard them as free and rational. This was a guiding principle in the ethical considerations for this study.

It was noted in Chapter One that Lofland, Snow, Anderson & Lofland (2006) suggest that the researcher should first justify why the case in question should be studied and second, to consider whether the researcher is the right person to carry out the study. The justification for the study was given in Chapter One that the FCTVE was the pilot case for a wider Government of Botswana plan to introduce new teaching and learning technologies in TVET. As such, a detailed understanding of the process could be significant. Regarding the researcher’s role, this was a complex research situation as

⁹ The ethical considerations for this study were undertaken before the fieldwork commenced which was before UNISA established the current ethical protocols and Committees.

the researcher had both a professional as well as a research role within the process being studied. This meant the researcher was not neutral about the process but was bias towards the expected change being a positive development. Great care had to be taken when analysing observations and carrying out interviews to mitigate that positive bias from influencing analysis. On the positive side, the researcher had a legitimate role in the process which facilitated access to the research situation which Lofland *et al* (2006:28) note is often problematic. This raises the question of the ethics of covert as opposed to overt research.

4.5.1 Overt and Covert Research

The BERA *Ethical Guidelines for Educational Research* (BERA 2004) say nothing about covert research. The British Sociological Association is more forthcoming, acknowledging that there are issues with covert research methods in as much as they “*violate the principles of informed consent*” (British Sociological Association 2002:4). However, they extol researchers employing participant or non-participant observation in non-public spaces to employ covert research only when it is impossible to use other methods to obtain essential data. Regular reflection on ethical issues is required and a deepening understanding of ethical of the implications of educational investigation (Burgess 1989).

It was the researcher’s belief that in this situation, covert research would have been unethical and quite possibly invalid. It would be unethical because it would have involved the intentional deception of the participants by the inquirer, which is an unacceptable position for this researcher. Lofland *et al* (2006) quote many researchers with this belief, Allen (1997), Bulmer (1982), Erikson (1967), Warwick (1975). However, researchers such as JWB Douglas (1976) argue that covert research is a necessary, revealing and useful method. The standpoint of the researcher is that it is important that the rights of the individual are respected, that privacy is not invaded and that respondents are not harmed, deceived, betrayed or exploited.

As a Technical Adviser to the college community, the researcher was trusted by the people to assist and support them in their work. The researcher had worked with many of these people for several months before the study commenced. A relationship based on trust was important. A simple question was posed – if the research was carried out without the knowledge and permission of colleagues, how would they feel, if they subsequently found out? The researcher believed some people would be very upset if full disclosure was not made so covert research was dismissed as an option. The study could not have been carried out without the explicit approval of the Principal and the Director of the Department of Technical & Vocational Education & Training. To have done so would have compromised the researcher’s position as a professional Technical Adviser. Within the culture of the college it was important to be able to demonstrate that permission had been given for the research to take place.

More importantly, covert research would have compromised the research findings. The ultimate aim for these research findings is for them to be applied within the context of technical and vocational colleges in Botswana. It is more likely that this could happen if the Department of Technical & Vocational Education & Training senior management were in agreement that the research could be carried out. So a staged approach was taken, as advocated by Lofland *et al* (2006:37). A hierarchy of people was established from whom consent was needed to carry out the research.

No.	Stakeholder	Relevance	Action
1	The researcher’s employers	The researcher was employed by a private company under contract to the European Union	Permission obtained from Team Leader after discussion with the Project Manager.
2	The funders	The company were under contract to provide services to the European Union.	Permission obtained from the Project Officer at the European Union
3	The college Principal	The Principal should approve any activity taking	Approval obtained from the Principal on condition

		place in the institution	of approval from the DTVET Director
4	Department of Technical & Vocational Education & Training Director	The Ministry officer with overall responsibility for the College and for the EU project	Approval obtained from the Director on condition that a research permit was obtained from MoESD.
5	MoESD Permanent Secretary	The highest ranking administrator in the MoESD	A research permit was obtained on 31 July 2007

Figure 4.1: Hierarchy of approval for the research

The Department for Technical and Vocational Education & Training, as part of the Ministry of Education is inevitably bureaucratic and hierarchical. Festinger and Katz (1966) recommend that in such an environment it is important to obtain assent and cooperation from the very top of the organisation. This is particularly relevant where there is a strong hierarchical structure and staff members are dependent on instructions from their superiors. It will be shown later that this is a key factor in this research context. This advice was heeded and in order to comply with local procedures, the support of the researcher's Team Leader was sought and formal permission from the Principal of the College was gained. The approach to college management led to a formal request being made to the Permanent Secretary of the Ministry through the Department for Technical and Vocational Education & Training Director. It was then necessary to apply for a national research permit requiring the eventual submission of the research findings to the national archives. Without evidence of this research permission, some respondents would not have agreed to participate in interviews. One participant asked to see the research permit.

4.5.2 Anonymity, confidentiality and protection

The issue of anonymity and confidentiality was discussed with the participants – it was made clear that anonymity was difficult to maintain in practice as respondents were drawn from a very small population and in some departments there is only one lecturer or one college Principal. It can be difficult to maintain anonymity when categorization of data may uniquely identify an informant (Raffe, Bundell & Bibby 1989:22). However, confidentiality could be assured where there was more than one person in a specific category – e.g. lecturers. Confidentiality means that although the researcher knows the identity of the informant, they will not make that identify explicit in the report. It may be possible for informants to identify themselves from a quote or description of behaviour but the researcher should take steps to obscure identity where it does not affect the quality of the data.

The issue of anonymity and confidentiality was discussed with the college Principal. This was important on two levels: he was the main respondent who would be unlikely to remain anonymous in the study and also because of his role of responsibility for the college staff. On the issue of his own anonymity he was “... *quite ok with being identified by my words. I tell you what I believe and I don't mind who knows.*” It was established if anonymity was a prerequisite for participation from any of the participants before interviews took place and then all participants were requested to read the information sheet about the research and sign informed consent forms. This was for the protection of both the researcher and the respondents.

4.6 RESEARCH METHODS SELECTED

Ethnographers need to have more than one way to show how the conclusions of the research were made. To reduce misinterpretation of data and improve the accuracy of the research conclusions, triangulation is recommended (Patton 1990, 2002; Cohen *et al* 2000; Stake 2005; Neuman 2006; Yin 2009). There are many different types of triangulation – time; investigator; theoretical; methodological, but essentially it means looking at the object of study through different methods. According to Denzin, the function of triangulation is to locate and reveal the understanding of the object under

investigation from "*different aspects of empirical reality*" (Denzin 1978). For triangulation, it is expected that there will be a collection of fieldnotes, interviews and documentary evidence which enable the researcher to cross-check information from different perspectives using differed methods to support the conclusions and claims to knowledge. It was appropriate to pursue time triangulation by carrying out this study longitudinally to take into account the effects of change and process (Cohen *et al* 2000:113)

Within the interpretive paradigm, a range of qualitative data collection methods were selected. According to Patton, this is what Denzin calls an omnibus field strategy in that it "*simultaneously combines document analysis, interviewing, direct participation and observation, and introspection*" (Patton 2002:265). A phased approach to field work and data collection was employed. Throughout the fieldwork, documentary evidence was collected and participant observation took place. At strategic points and in the light of the emerging issues, interviews were requested with selected participants. Key participants such as the college Principal and some lecturers were interviewed several times over the two year period.

4.6.1 Data collection methods considered and rejected

The participatory nature of the research topic and interpretive approach initially suggested that action research, as propounded by Lewin (1946) and Whitehead and McNiff (2006) or action science (Argyris, Putnam & Smith 1985) could be suitable research methodologies. Burnes notes that the action research method was introduced by Lewin through his study of group dynamics and organisational change (Burnes 2004: 984). Action research is a powerful method for improvement and change but it relates to the improved practice of the researcher. Both action research and action science were rejected because it was the experience of all the individuals in the research context which the researcher wished to explore rather than her own experience.

The initial strategy for data collection was that some form of quantitative survey would reveal the phenomenon of the process of change at FCTVE. Early reading led to this

idea being rejected as inappropriate. This strategy may have revealed how many teachers started using distance and elearning methodologies in their teaching, or how many managers supported or did not support the change process, but it would not have led to an understanding of the experience of the people involved; of how the process unfolded.

Initial ideas on the data collection tools had to be adapted when it became clear that they were not viable. An early plan was to request key staff members to keep a journal or diary of their activities and their reflections on those activities as they learned to use the new teaching and learning technologies. However, it quickly became clear that staff were unlikely to commit to doing this in a sustained and useful way, so this method was discarded. The planned use of Internet chat systems for conducting interviews also proved to be unworkable as participants did not have the required levels of skills or confidence in the use of the technology. Piloting of this approach revealed high levels of discomfort amongst participants and the method was abandoned. This meant that the initial research design for interviews had to be re-thought in the light of the context of the participants.

4.6.2 Documentary analysis

Documentary analysis was a critical element in the data collection. A good deal can be learned about an organisation by its documented strategic plans, policies and procedures. An analysis of documentary evidence relating to the external environment of FCTVE was reported in Chapter Two as it provides important background to the historical and current context in which the FCTVE case study exists, including the decision to use elearning in vocational education and training. In addition, newspaper articles, government memoranda and reports from other consultants were identified as *external* documentary evidence for the process of change within the college. As the research progressed, it became clear that there was a wealth of documentary evidence which had not initially been identified, such as workshop flip charts, programme descriptions, outcomes of working group meetings, individual teachers' case studies and reports from Technical Advisers. These resources were labeled as *internal* (to the

college) documentary evidence, were collected as they were discovered and were analysed for evidence of changing behavior amongst the staff and managers of the college.

A careful analysis of both internal and external documents aided in identifying relevant information. Over a 30 month period the weight of potential documentary evidence was heavy and not all documents could be considered. Documents were selected when they related directly to the research questions. Some documents were included specifically because they did not relate to the research question when the fact that they did not is remarkable.

4.6.3 Participant observation

As an ethnographic researcher and an adviser to the college staff and a change agent in the phenomenon being studied, it was inevitable that participant observation would be selected as an appropriate research method. The research context defined the appropriate method. Participant observation is a “... *process in which an investigator establishes and sustains a many-sided and situationally appropriate relationship with a human association in its natural setting for the purpose of developing a social scientific understanding of that association*” (Lofland *et al* 2006:17). Participant observation was particularly suitable as the researcher was an adviser to the college staff and carried out the role of ‘expert’ in terms of distance and elearning. This meant that daily interactions were all focused on the process of introducing distance and elearning programmes into the college. It can be difficult for a complete outsider to gain access to a private place such as a college and even more difficult for that person to understand what is going on. This is the strength and value of participant observation. The researcher who is already a member of that private context has what Adler and Adler (1987) call “*complete membership*” according to Lofland *et al* (2006:41). In this case the researcher had a legitimate role within the social unit and did not need a sponsor to ‘get in’ as famously illustrated by the participant observation pioneer, William Foote Whyte’s relationship with Doc in Street Corner Society (Whyte 1943).

4.6.4 Sampling

As the fieldwork progressed significant themes emerged which were explored with selected informants according to their organisational position, stated views or displayed behaviour. *“Naturalists sample in ways that maximise the scope and range of information obtained; hence sampling is not representative but contingent and serial”* (Lincoln & Guba 1985:224) This means that some contributors were selected because they held a certain role and responsibility within the system and others because of what they were doing, or not doing, in relation to the move towards more flexible teaching methods. Therefore the study employed a purposive sample – participants were specially selected to provide information-rich responses.

During the initial exploratory fieldwork, observations were made and themes were noted. Later, specific participants were selected to provide more focused information on specific issues and an attempt was made to confirm the initial observations. Patton calls this a move from an exploratory process to confirmatory fieldwork (Patton, 2002:239). Both confirming and disconfirming participants were sought in an attempt to make sense of the emergent findings.

4.6.5 Interviews

As previously discussed, individuals were selected for interview based on a range of criteria. These criteria included: their role within the TVET system in Botswana; their role within the college; their behaviour in terms of adopting or not adopting new teaching approaches; something they said during a meeting or workshop which warranted further, in-depth study.

Interview participants were drawn from the 4 main groups of actors in the process, DTVET and other Ministry officers, college managers, lecturers and the TA Team. In total, 43 interviews were carried out. Some participants were interviewed more than once. It was considered most appropriate to interview the participants individually to facilitate discussion and probing of ideas. One focus group interview was carried out

with the BTEP Training Team as they were visiting the college to carry out staff training and had very little time to spare. There were three members of this team who were interviewed together. A list of interview participants is provided in Appendix 3.

Semi-structured interviewing was considered important to access the complexities of the situation. This form of data gathering "... *encompasses both ordinary conversation and listening as it occurs naturally during the course of social interaction and semi-structured interviewing involving the use of an interview guide consisting of a list of open-ended questions that direct conversation without forcing the interviewee (usually referred to as the informant) to select pre-established responses*" (Lofland *et al* 2006:17). Understanding can often not be gained from observed behaviour so it is necessary to ask questions to find out about why people act in certain ways. Thoughts, feelings, motivations, meanings cannot be observed.

Different types of interview were used; informal conversational, guided interview and standardized open-ended interview (Patton 1990:280). Informal conversational questions and answers took place during daily interactions between the researcher and the participants. A standardized open-ended questionnaire was used when interviewing different participants from a cogent group within the research setting in order to elicit their views and meanings on a similar set of concepts. Standardized open-ended interviews were conducted with participants who represented an individual role or perspective on the process of implementing distance and elearning into the Botswana government VET system.

In line with the ethnographic approach, the researcher considered the actors involved in the research as 'participants' rather than respondents. The term 'respondent' implies the researchers' construct; that they were *responding* to the research questions. Lofland *et al* urge the careful selection of key subjects to draw on their informed perspective and use the term "*informant*". (Lofland *et al* 2006:17). The researcher differs with Lofland *et al* with regard to this term. During initial discussions with participants it was important to provide participants with sufficient information to help them feel comfortable but not to

overwhelm them with academic jargon. Inevitably the researcher and the respondents will understand the research differently but can arrive at shared constructs and shared meanings. Participants have to be convinced that the research is important and their contribution would enrich the findings.

The conclusions proposed in the final chapter of this study are grounded in the analysis of the research data, predominantly the data collected during the interviews.

4.6.6 Data Analysis

Field notes and interviews carried out in a longitudinal study will inevitably produce a vast amount of data. The question of how to analyse qualitative data frequently arises in the methodological literature (Cohen, Manion and Morrison 2000; Patton 2002; Lofland et. al. 2006). In this case, recurring themes emerged during data collection and were followed up and refined as the fieldwork progressed. Observation records and interview responses were produced digitally. The list of emerging themes was used to guide multiple processes of immersion in the data, using digital searching for key words and phrases. Four distinct phases could be identified from the critical incidents observed and identified during the study. The emerging and recurrent themes were mapped on to the four-phase framework of critical incidents which was used to structure the presentation of the data.

4.7 CONSTRAINTS ON THE RESEARCH METHODS

The qualitative research methods selected were not without their imperfections. Some of these constraints are highlighted here and others are discussed during the analysis of findings. The choice of participant observation as the main data collection method for this naturalistic study was a natural one. However there are challenges with this form of longitudinal participant observation which are centred around the differentiated status inherent in the roles of both the researcher and the other actors in the social unit. In this case, the researcher was invested with an active role in trying to bring about change and therefore was not value-neutral to the process. Without doubt this introduced some

bias into the research process. The different background and worldview of the researcher compared to the participants is noted in the next section on reflexivity.

4.7.1 Reflexivity

One of the main concerns for a naturalistic ethnographic researcher is reflexivity. Ethnographers are expected to be reflexive in their research, which means articulating how the research is potentially affected by their own background, selectivity, perception and inductive processes. Researchers are reflexive when they are aware of the multiple influences they have on research processes and on how research processes affect them. (Watt 2007; Gilgun 2010). Reflexivity acknowledges that quantitative researchers are inevitably part of the social situation they are researching and unavoidably have views and interpretations of the meanings of that social situation. In qualitative research, the researcher is the research instrument (Patton 1990, 2002; Cohen *et al* 2000). Awareness of the reflexive screen of culture, age, gender, class, social status, education, language and values is part of the process of honing the research tools. It is helpful to see reflexivity as a form of triangulation between the researcher, the participants being studied and the audience or people receiving the study. The research will benefit if the inquirer can identify the reflexive screens of everyone involved, including themselves.

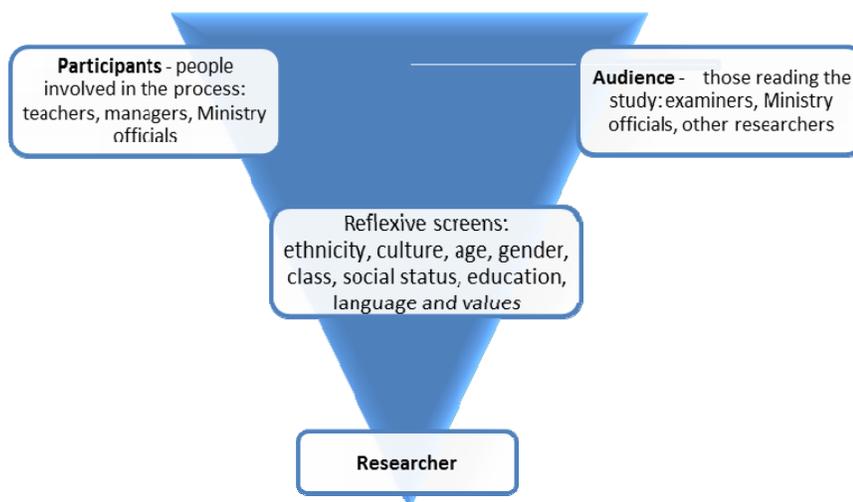


Figure 4.2: Reflexive screens in research: Adapted from Patton 2002:66

The issue of reflexivity was particularly significant in this study as the researcher was from a different cultural and educational background and held a different worldview from the participants in the study. Cohen *et al* (2000:141) note that McCormick and James (1988) advise that researchers should continually monitor their interactions with participants and question their own reactions and interpretations which might bias the research. The researcher had to be very careful to guard against imposing her own constructs on participants during interview and content analysis. It was necessary for the researcher to closely monitor interactions with participants in an effort to mitigate bias.

In diffusion of innovation theory, Rogers (2003:110) highlights the issue of theoretic bias. He calls it the pro-innovation bias and cites Downs and Mohr (1976) who note that innovation is usually seen as synonymous with improvement and is heavily laden with positive value. The research was, indeed, conducted from the researcher's position that distance and elearning are positive innovative developments in a technical college. This position was not held by all the participants. There is also the issue of the requirement upon the researcher, along with the other members of the Technical Advisory team, to achieve agreed outcomes within the conditions of the consulting contract with the European Union. This requirement made the actions of the research 'value-laden' beyond personal belief in the innovation.

4.7.2 Sample mortality

One of the clear problems of longitudinal studies is the risk of losing participants over time. Attrition of research respondents can render findings non-representative of the total population (Cohen *et al* 2000). This was especially pertinent in the specific research context of FCTVE as there was a policy of moving people between technical colleges on a fairly frequent basis.

4.7.3 Critical incidents and weight of data

The common constraint of lack of time for data collection did not apply to this study as the research was spread over a 30 month period. The issue was how to keep the

observational data collection to a useful but manageable level. It was important to design time-efficient data collection methods in order to achieve the detailed level of research required. The sheer weight of data which is collected during participant observation and the research skills needed to effectively analyse and attribute meaning to this enormous quantity of data require a large allocation of time. Detailed field notes are of critical importance for a participant observer (Lofland *et al* 2006:108). The field notes taken during a longitudinal qualitative survey amount to a vast amount of data which must be recorded and analysed.

One of the major difficulties in longitudinal participant observation is in remaining alert to critical incidents. Over a period of 30 months it was necessary nearly every working day to identify critical incidents and ask '*is this action/comment/behaviour/lack of action relevant?*' and reflect on conversations, reports and observations for their possible contribution to understanding. It is particularly difficult to stay disciplined during the more routine middle-phase of the fieldwork and continuously record detailed field notes. After a period of immersion, it is sometimes necessary for the researcher to withdraw and put some distance between themselves and the research setting (Patton 2002). There are a range of different types of materials to be included in the record alongside the descriptive account which includes the researchers' own interpretive ideas of the data, the researchers' own personal impressions and reminders to look for additional information in future observation (Lofland *et al* 2006). There is also the potential for misunderstanding. Everyday interactions are fraught with misunderstanding and so it is equally possible for the researcher to misinterpret the significance of some forms of behaviour.

There is a fear of missing some important action or behaviour. At the start of the fieldwork there were 12 teachers based in 3 offices close to the researchers' and Principal's office. Towards the end of the field work, there were more than 40 teachers spread over a large college site and it was more difficult to spend time with them as their workload increased. Therefore more specific interviews took place in the later months of the field research whereas at the beginning participant observation during

meetings, workshops and in general office interaction was more revealing and manageable. The fear of missing some critical action diminished when patterns of behaviour were recognised and critical themes emerged. Due to the sustained focus on the activities under study and the contention that social behaviour is patterned, routinized and repeated, it is unlikely that significant patterns or important behaviour will be missed (Lincoln & Guba 1985: 302).

4.7.4 Reliability & Validity

Reliability is a useful construct in quantitative research but is not easily applied to qualitative research carried out within a naturalistic/interpretive paradigm. Reliability essentially means that if the same research were to be carried out with a similar group of respondents in a similar context, then similar results would be found. But the uniqueness of naturalistic studies make such replicability unlikely (Cohen *et al* 2000:117). In this research context it is more helpful to consider issues of authenticity, accuracy and dependability rather than reliability and validity. Ethnographic data is only valid if it actually measures what it claims to measure and given the difficulties of reaching understanding of others' motivations and behaviour, validity is a critical concern. A range of actions were taken to increase the dependability of the data as proposed by Lincoln and Guba (1985:108) such as member checks or respondent validation, triangulation, prolonged engagement in the field and identifying acceptable processes on conducting the enquiry so that the findings are consistent with the data.

Several steps were taken to mitigate possible failings of internal validity. The analysis of the content of the interviews was discussed with individual participants both for ethical reasons and to test the validity of interpretations and recording mechanisms; referred to a "*member checking*" by Stake (2005:454). Typed up interviews were returned to participants for checking and to ask additional questions. Some participants made detailed additions to their words when they saw them written down. Others simply agreed that the interview reports were acceptable. It was important that participants agreed with the analysis of their interviews if understanding of their responses was to be reached. This practice enabled participants to rescind any statements which they felt

might impact negatively upon them if reported. In practice, no-one withdrew any information.

4.8 SUMMARY

This chapter described the research paradigm and approach to data collection in this longitudinal case study at FCTVE. The research strategy and data collection methods were discussed including the methods considered and rejected. Particular attention was paid to ethical considerations and an analysis of constraints on the study. The important concept of reflexivity was reviewed.

In the next chapter, the data collected is presented as the findings of the fieldwork, following this research strategy.

CHAPTER FIVE

PRESENTATION OF FINDINGS AND EMERGING CONCEPTS

5.1 INTRODUCTION

As described in Chapter One, the locus of this research was the new government technical and vocational college in Francistown (FCTVE), Botswana during a government and development partner project to establish the new college and introduce distance and elearning teaching approaches. The first chapter described the aim of this case study as identifying effective structures and change processes involved in introducing distance and elearning or flexible learning. The context was a new government technical college with a management and staff who had never been involved in flexible learning before working with a team of external technical advisers (TAs).

The study locates the intervention within a specific historical phase of national and educational development. This historical phase as discussed in Chapter Two provides the context against which the project is unfolds. Chapter Two presents a review of the literature from a historical point of view, providing an historical analysis of the documentary evidence of the policy and socio-economic development landscape within which FCTVE carries out its mandate. The national development and educational policy background is described as part of the external context of the college. The chapter showed how the mandate came to be given to FCTVE and how the policy and planning environment impacts on the implementation. The review of the theory of change management and the provision of ODL is provided as a backdrop for the findings which are elucidated in this chapter.

The Researcher describes the methodology employed, specifically the interpretive paradigm which framed the study and the ethnographic approach which guided the selection of case study methodology in Chapter Four. The case study fieldwork focussed on the process of change involved in introducing flexible learning at FCTVE

over a period of 30 months. Data was collected through participant observation, documentary analysis and semi-structured interviews with a purposive sample of participants. The conceptual framework emerged as observations were made, participants' views were gathered and important issues were identified and analysed.

Against this backdrop, the findings of the research are presented along with the emerging concepts from the fieldwork. The main review of the literature is presented in Chapter Three but interwoven throughout this chapter are references to relevant literature which were investigated as the critical concepts emerged in the fieldwork. The research findings are presented according to four phases identifying 20 critical events and issues emerging during four phases of the Technical Assistance project at FCTVE. The emerging critical issues are not entirely distinct as many are complex and inter-linked – as is the evidence which is quoted to illustrate them. The chapter provides evidence from observations, interviews or documents collected through the research procedures described in the methods chapter, and interprets these by drawing on the relevant literature reviewed in this chapter. The relevance of the findings for the discussion and recommendations that emerge is presented in the final chapter.

Although this is an interpretive study, before the data analysis and findings are presented, the Researcher returns to the concept of the dangers of interpretation in research and notes this is especially true across cultures. “...*what we call our data are really our own constructions of other people's constructions of what they and their compatriots are up to*” (Geertz 1973:9). This was a guiding tenet throughout the fieldwork and data analysis.

As the Researcher interprets the data, the findings in this chapter detail a change process which features a lack of preparation, perceived lack of management commitment by staff and poor timing in a top down approach to introducing distance and flexible learning in a government technical and vocational education and training (TVET) college. The findings show how an external group of change agents working as technical experts within clearly defined policy objectives and facilitating extensive staff

development, were an insufficient driving force for change against the restraining forces of a bureaucratic organisational culture, strong mental models of traditional teaching and perceived lack of leadership.

5.1.1 Research questions

The research questions guiding the study were:

1. What organisational structures and change processes are necessary for successful implementation of distance and elearning in the context of the Botswana government TVET system?
2. How are these structures and processes best managed in this context?

5.2 PROCESS OF INTRODUCING NEW TEACHING AND LEARNING METHODOLOGIES

The process of change was centred on introducing distance and elearning alongside the traditional face-to-face methods that the managers and staff of the college were accustomed to. However, this was part of a bigger process of establishing and operationalising a new college from the point of hand-over of the college building from the contractors. This can be seen as a complex change process because it required the participants to fulfil a dual function of establishing and operationalising the new college and at the same time to introduce new technology and approaches to teaching. Even though this was a new institution, it was not a 'clean slate'. Most of the participants came from existing colleges in the government TVET system and brought with them expectations and working practices from their former institutions. For ease of explanation, the process is presented graphically in Figure 5.1 although this was not a simple, linear process.

As noted in the literature review in Chapter Three, in his treatise on sociological method, Weber comments that the social scientist has to make sense of a chaos of events and perceptions. "*Order is brought into this chaos only on the condition that in every case only a part of concrete reality is interesting and significant to us, because only it is related to the cultural values with which we approach reality*" (Weber 1949:78).

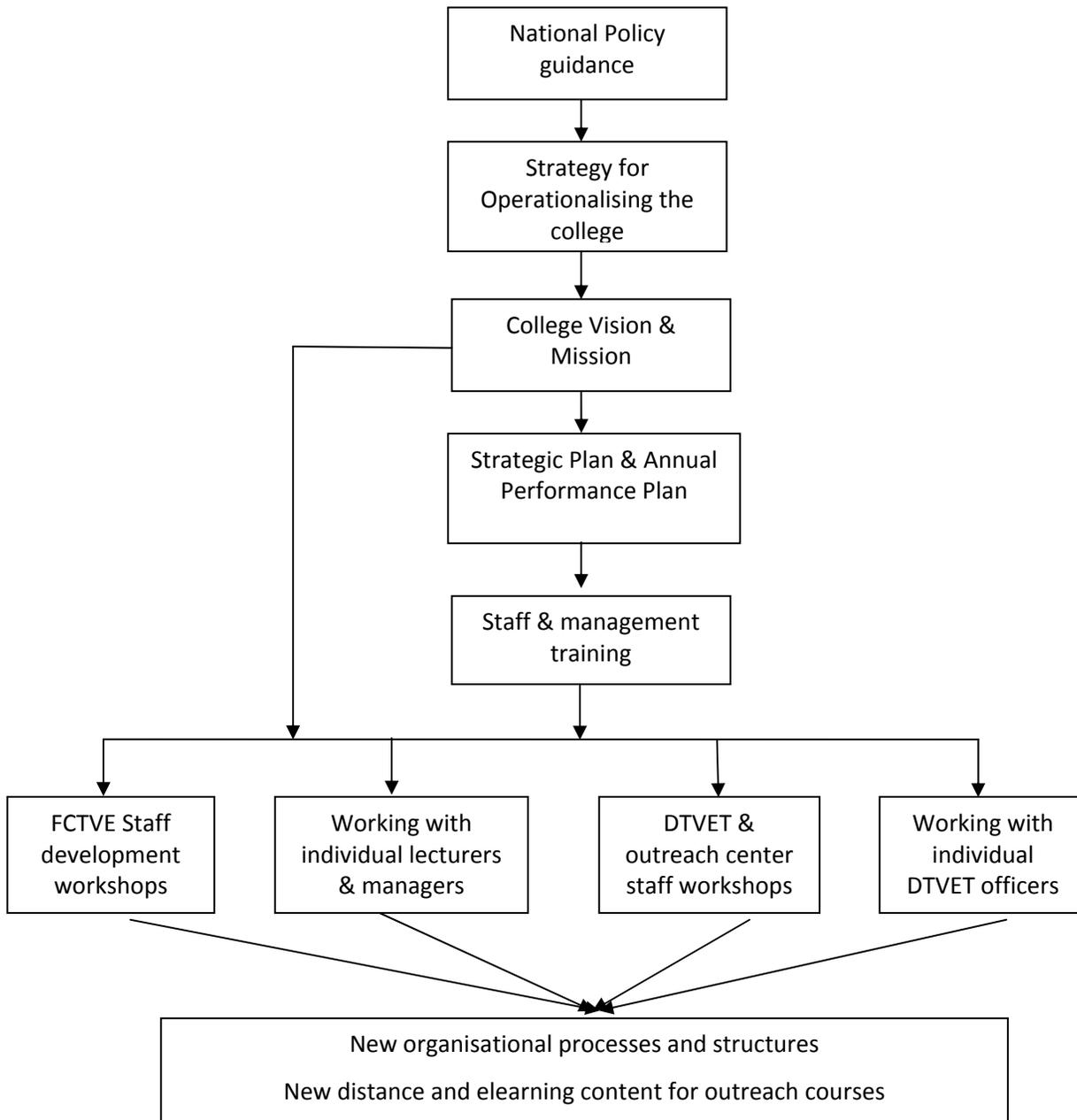


Figure 5.1: Broad process of introducing new teaching and learning methodologies

The Researcher has attempted to find order in this complex chain of events, discussions, meetings, documents, workshops, conversations and observations over 30 months of field work, selected those most interesting and significant and attempted to present them faithfully. However, note is made of the importance of the Researchers'

cultural values in this process of selection and presentation as discussed in the research methods in Chapter Four in Section 4.7.1 on Reflexivity.

The process shown in Figure 5.1 was proposed by the team of Technical Advisers (TAs) contracted by the Government of Botswana to assist in the establishment of the college and to introduce and implement distance and flexible learning. Figure 5.1 depicts the process in a linear form although it was not a linear process and proceeded in a cyclical, iterative fashion as staff joined the college at different times and staff development was a continuous part of the process. The process involved more than 40 staff at FCTVE and about 30 DTVET officers and personnel from other colleges. Some of the later phases were carried out earlier or simultaneously with other phases hence, in reality it was necessary for the Technical Advisers (TA) Team to carry out staff development workshops and work with individual lecturers and managers long before the College Strategic Plan and Annual Performance Plan were in fact developed and they continued to do so even after the process and structures were in place. Also, different teachers and managers arrived at different stages in the change process at different times and this complexity will be shown to have been compounded by a high turnover rate of teachers and middle managers as they were moved between colleges within the government TVET system. This was reflected in the literature as many authors refer to organisational change as a chaotic, complex process (Quinn 1985; Peters 1987; Fullan 1993, 1999, 2003; Kearns 2004; Senge 2006; Stiles & Yorke 2006).

5.3 NATIONAL POLICY GUIDANCE

It is necessary to provide additional vocational education and training (VET) policy context here as it is shown to be important to the participants later in this chapter. This contributes to the national education and development policy context provided in Chapter Two which presented a discussion of the broad VET context in Botswana and described this sector of education within the overarching education policies in the country – namely the National Development Plan 9 and the Revised National Policy on Education (RNPE), 1994. Akoojee (2005:19) comments that “*The RNPE 1994 provides*

the context for TVET. For the first time, government policy recognised TVET as something that should be distinct from general education and training”.

This recognition was taken up by the Government of Botswana in the National Policy for Vocational Education and Training (NPVET) 1997 which identified three issues relevant to this process and to this study: (1) the need to expand access to vocational education and training; (2) to make VET provision more inclusive and equitable; (3) to address issues of quality and cost-efficiency (GoB 1997a:2.3). The NPVET also notes the high cost of VET compared to other educational sectors and called for innovative ways of reducing costs, particularly by maximising the utilisation of physical and human resources. The NPVET outlines four specific objectives which are relevant to this study:

1. *“to provide continuing education and training for skills upgrading and re-training in the light of rapid technological change;*
2. *to establish an open and flexible training structure that will facilitate horizontal and vertical mobility within the general education and training system and contribute to a change of attitudes and stereotypes towards VET;*
3. *to achieve equity in the provision of VET;*
4. *to initiate programmes which use innovative training and delivery methods for increased participation in VET.”*

GoB 1997a:2.2

These objectives are then followed with a statement about modes of delivery which directly relate to the need for new teaching and learning methodologies:

3.17 “Traditional modes of programme delivery are widely used but their exclusive application does not always meet the requirements of a modern labour force and are not adequate for certain target groups. There is a need to diversify modes of delivery. Curricula and programmes will emphasise:

- *flexible modes of delivery that will facilitate the achievement of competencies by trainees*

- *modes of delivery that are adaptable to new technologies and responsive to technological changes*

3.18 Through pilot programmes, new modes of delivery will be explored. These include development and testing of different modes of distance education.”

GoB 1997a:3.17

The educational policies are a powerful external driver for change and point in the direction of more flexible teaching and learning methodologies with an emphasis on distance learning provision and the use of technology to address issues of increased access and equity and improved quality with cost-effectiveness. The change process was therefore required to specifically meet the challenges of a modern labour force through diversified modes of delivery.

5.4 STRATEGY FOR OPERATIONALISING THE NEW COLLEGE

Integral to the Government of Botswana’s strategy for the implementation of the VET policy was to establish a new TVET college with enhanced ICT infrastructure and a mandate to introduce distance and elearning into the Botswana Technical Education Programme. The goal was to improve quality and efficiency in BTEP delivery and to increase access to government TVET programmes. In collaboration with the European Union the college construction was started in 2004 with an original completion date of March 2006. Unfortunately the construction was not completed until April 2007 when the buildings were handed over to DTVET. This was one year after the start of the Technical Advisers (TA) contract implemented through a consortium consisting of Scottish Qualifications Authority (SQA), Aarhus Technical College (ATC) and Proman. The consortium provided a team of six Technical Advisers (TAs) to support the operationalisation of the college and introduction of distance and elearning. The project took place from February 2006 to December 2008 and the Researcher was employed as the Distance Education Specialist joining the TA Team in July 2006. Results were expected in three areas:

- Component 1:** Organisational and Management Structures of FCTVE developed and operational
- Component 2:** Learning programmes developed and operational:
Distance learning courses operational
ELearning on line media produced and operational
Instructional course materials produced
- Component 3:** IT infrastructure and network operational

Christensen 2006:11

The strategy for operationalising the new college was developed collaboratively by the TA Team and managers of FCTVE as they were appointed and joined the college. Operationalising involved establishing teaching facilities for technical and vocational subjects, installing and commissioning new state-of-the art equipment; a textile design studio; a Learning Resource Centre; a hotel school with 6 bedrooms, kitchens, restaurant and reception; beauty therapy and hairdressing salons, engineering workshops, science laboratories, a sports centre, an enhanced ICT network infrastructure, including satellite terminals and over 600 PCs; student and staff residences and administrative facilities. This in itself was a major undertaking for a small number of academic and support staff. In addition, the teaching staff was expected to prepare for teaching higher levels of the Botswana Technical Education Programme (BTEP) and fulfil stringent quality assurance regulations for their teaching facilities and programme preparation. The TA Team was put in place to establish the enhanced ICT infrastructure and build capacity with staff to introduce distance and elearning into the college programmes.

5.4.1 The main actors in the case study

The groups of participants and the nature of their relationship in the project are shown in Figure 5.2

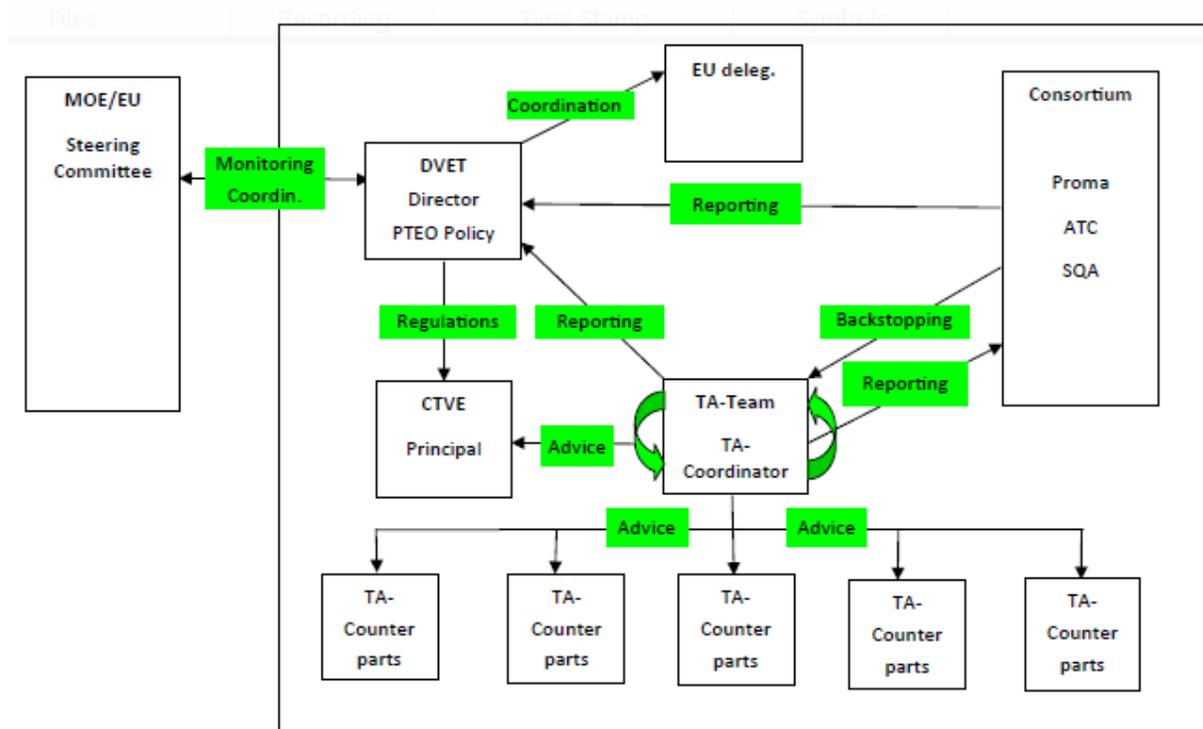


Figure 5.2: Main actors in the FCTVE technical assistance project : Project Inception Report (Christensen 2006)

As shown in Figure 5.2, the TA Team provided advice and training to the staff and managers of the college and reported to both the Consortium and the DTVET Director. The Consortium reported to the EU Delegation. The TAs worked with individual counterparts (teachers and managers) to establish new technology systems and develop new courses. A Steering Committee comprising Ministry of Education and EU Delegation officials had oversight of the whole project. The work of the project and therefore the locus of this study was focused on 3 main groups of people; FCTVE managers, FCTVE teaching staff and DTVET officers which includes Head Office Programme Development Division and Quality Assurance and Accreditation staff as well as managers and staff in the proposed outreach centres.

5.4.2 A model for introducing new teaching and learning methodologies

As described in Chapter Three, the TA Team and college managers considered a range of models to guide the introduction of new teaching and learning methodologies. The

model considered to be most useful was the MIT 90s schema. This model “...demonstrates that organisations are complex systems of people, structures, technology, culture, processes and management operating in a constantly changing environment” (Kearns 2004:4). The original model was not designed for education contexts but was the product of an early investigation into the impact of information technology on different organisations (Scott Morton 1991). Having found the model to have been identified as relevant in other change management situations in higher education (Yetton 1997; Holt & Thompson 1998; Uys 2000; Wills & Alexander 2000; Kearns 2004) the TA Team and college managers decided that the work of the MIT 90s research group still has relevance for organisational transformation through ICT more than 20 years later.

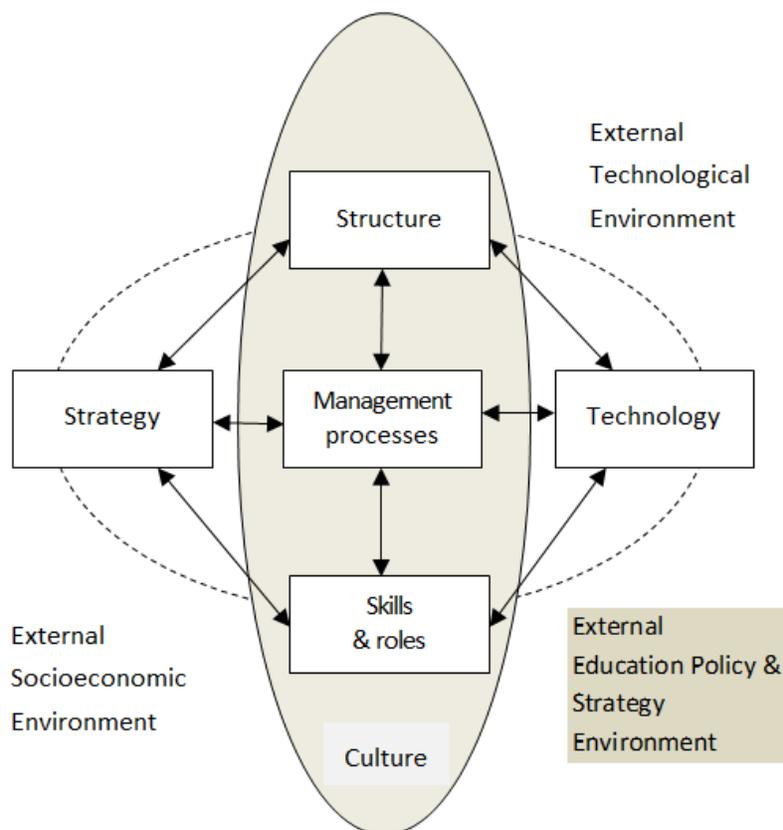


Figure 5.3: MIT 90s model of technology integration with additional policy and strategy environment

The MIT 90s model represents the complexity of the change process when introducing ICTs as the five forces have to work in dynamic equilibrium and stability. The MIT 90s

model was useful because the main elements – the management processes, skills and roles of staff, the organisational structure, new technology and a strategy for achieving the mandate of the new college were considered to be key issues by the TA Team and the FCTVE managers.

5.4.3 Phases of the Technical Assistance Project

The period of study and presentation of the findings follows the phases of the Technical Assistance project which are delineated by critical events:

Phase 1	July 2006 – March 2007	Pre-occupation of the college buildings
Phase 2	April – December 2007	Staff training and establishing new courses
Phase 3	January – June 2008	Preparation for college opening
Phase 4	July – December 2008	Technical Assistance Team exit period

The findings of the study are presented in periods of time corresponding to project activities and milestones in the operationalisation of the new college over the 30 month period.

5.5 PHASE 1: CRITICAL EVENTS AND CONCEPTS EMERGING JULY 2006 – MARCH 2007

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2006												
2007												
2008												

In the first phase there were 5 critical events and emerging concepts:

1. Communication regarding the new mandate of the college
2. Position of new mandate in relation to college opening
3. Developing vision and mission for FCTVE
4. Concern for resource availability
5. Impact of action from Ministry officials

The main critical event – or non-event– in this period was the delay in the completion of the building of the new college which caused a major disjunction between the timing of the initial project phase and the staffing of the college. The illustration of the main actors in Figure 5.2 shows that it was seen by the TA Team as critical to work with the FCTVE staff as counterparts in order that skills transfer could take place for new teaching and learning approaches which would be sustainable. However, the TA Coordinator was appointed several months before the College Principal, and staff appointments were made throughout 2006 and into 2007. The TA Team reported in February 2007:

“The terms of reference for the provision of Technical Assistance states that:

Technical assistance will build capacity in planning, coordination and management, and in the delivery of learning programmes and teacher training programmes using modern technologies.

... Consequently, the TA Team is expected to work with staff at the college. A partial hand over of the college was planned for December 2006, and staff appointed started arriving in Francistown, January 2007. However, the partial hand over was not achieved. By the end of the reporting period no hand over of college buildings had taken place, resulting in no work places for the staff. This has, of course, negatively impacted on the ability of the TA Team to work with the college staff since the temporary facilities of the TA Team at the Regional Office do not have additional work places. Capacity building with the staff has therefore been limited.”

TA Team Annual Report 1 February 2007:4

This document reveals that a number of staff members were deployed to Francistown before their accommodation was ready and long before the college buildings were available. This led to frustration and loss of impetus at the long wait for the college buildings to be ready. One of the lecturers expressed her frustration:

“When I arrived here, I was very excited. It is a new environment, with new people ... a new department to come to and a new thing that we are going to start. I felt like a pioneer. But now I am just frustrated. It’s getting quite painful to not be going to work every morning. There’s nowhere for you to go.”

Hospitality Lecturer, December 2006

5.5.1 Communication regarding the new mandate of the college

It was observed that there was a lack of communication between DTVET officers and the new staff appointed to the college. As staff arrived, the Researcher asked if they had been told about the different mandate of the new college. Some reported that they had been told that FCTVE would offer higher level BTEP qualifications (Advanced Certificate and Diploma which were not being offered in the other 6 colleges) but no-one had been told that FCTVE would have advanced ICT infrastructure and they would be expected to develop distance and elearning courses. New recruits were surprised to learn of this expectation. As one lecturer pointed out:

“I know that at Francistown [FCTVE] we will be offering Advanced Certificate and Diploma but I thought it was just in the traditional way.”

Clothing Design and Textiles Lecturer November 2006

Lecturers already working in other TVET colleges were invited to apply to the Ministry Human Relations Department for transfer to FCTVE. When the Researcher asked why they had applied to come to Francistown some reported that they did so for personal reasons to be closer to family members working or living in the north of Botswana or because they envisaged better opportunities for promotion.

“This is a chance for me to get promotion as it is a new college. I want to be Head of Department. It’s near my family in Zimbabwe ... and I can easily travel there from here.”

Hairdressing and Beauty Therapy Lecturer, November 2006

No-one chose to come to FCTVE because of the new mandate. The fact that none of the teaching and management staff were informed that FCTVE had a different mandate from other technical colleges pointed to a lack of coordination or focus of DTVET regarding this mandate. Or perhaps they did not think it was relevant. DTVET senior management were certainly aware of the mandate as they had established it, but this mandate was not communicated to staff applying for positions in the new college. It should be noted that TVET teachers are employed by the Public Service Commission who also failed to communicate the new mandate during the recruitment process. This was initially seemingly insignificant but cumulates with later findings which point to a lack of teachers' and managers understanding about the mandate of the new college as well as the understanding of Ministry officers and how this impacts on the process of change.

5.5.2 Position of new mandate in relation to college opening

The TA Team believed that leadership commitment was critical for the successful change at FCTVE and prepared a report 'Distance and Flexible Learning at FCTVE' in October 2006, which explained the management issues to be addressed in introducing Distance and Flexible Learning (DFL). During the meeting to discuss the report, the Principal explained that his teaching career had only been concerned with contact education and he was pleased that the TA Team were in place to help with distance learning. He could see how distance learning could help to make TVET more accessible in Botswana. However, right from the beginning, he was concerned that it would be too much for the college staff to take on board while they were setting up the new college.

"Will they be able to cope? I expect there will be a lot for them to learn and they will already have so much to do to get ready for the higher level programmes. They may have to do a lot of research to be ready to teach Advanced Certificate and this is very important."

FCTVE Principal, November 2006

This sentiment, expressed so early in the process turned out to be self-fulfilling. This idea that preparation for full time course delivery was more important than developing new approaches was found to permeate the whole college as time progressed. When asked about the decision to introduce distance and elearning, the Principal responded:

“If DTVET say they want it then I expect we will just have to do it. Before meeting the TA Team I didn’t favour distance education because I always felt that there was no quality in it. If you can’t learn while being taught face to face, how can you learn on your own? I felt the quality was compromised in distance learning. Now I am starting to talk to people – especially about the quality measures in place, my views are changing. Now I think that distance education makes sense.”

FCTVE Principal, June 2007

When asked his view on the decision to introduce distance and flexible learning into the Botswana Technical Education Programme (BTEP) the Principal was candid about his concerns:

“I support distance learning in BTEP from a management point of view because we will be able to increase student enrolment. Full time students take up the space at the college for longer periods so we can’t have more students enrolled. I do have concerns though because BTEP is competency based – how will we know if learners are acquiring relevant competencies. Maybe it is possible but I am still to be convinced.”

FCTVE Principal, June 2007

5.5.3 Developing vision and mission for FCTVE

In order to try to progress the preparation for the opening of the college the TA Team agreed to facilitate 3 workshops in late 2006 for the staff appointed to FCTVE even though they had not yet been deployed. The workshops focused on developing the college vision, mission and policies, action planning for the first year of operation and programme rollout plans.

In these workshops, staff asked if there were relevant statements in national policy providing the 'authority' to implement distance and elearning. They were not familiar with the national policy statements, however it was clear that they would not take distance and elearning on board unless there was specific national policy requiring them to do so. The national policy statements were considered to be powerful drivers for change and the TA Team presented these policy statements for discussion in the workshops. Efforts were made to explain to the participants that the work was to be an implementation of government policy not something brought in by the Technical Advisers and European Union.

Despite the clear policy statements, participants were reluctant to include references to distance and flexible learning into vision and mission statements. Implementation planning was totally focused on full-time, face-to-face programme delivery. A senior middle manager had this to say:

"We don't know anything about distance learning at CTVE [The teacher training college originally located in Gaborone but re-located as a Department in FCTVE]. Our programme is outcomes based and we can only deliver it face-to-face. It may be ok for the technical subjects to be offered by distance. We do have some elearning in our programme already although our technical adviser will not come with us to Francistown so I don't know if we will continue."

Head of Department Education, November 2006

At this time, the Researcher felt that this reticence on the part of the staff and management did not bode well for the proposed organisational change. The TA Team embarked on a process to bring about a co-constructed vision of the new college in the face of the staff members' lack of skills in the use of ICT in teaching and distance learning. The view of the TA Team was that it is important to have the new flexible approaches enshrined in the vision and mission statements as a guide and reminder of

the mandate. Flexible approaches had not been identified as a priority for the new management and staff who were in the mindset of traditional delivery approaches and, for them, to be a college of excellence was more important. After considerable coaching from the TA Team and a lot of suggestions which guided the participants towards the result, the following were accepted as the college vision and mission statements:

Vision

To be a college of excellence known for its innovative and flexible learning and teaching approaches in order to produce competitive skilled professionals.

Mission

To produce competent and innovative individuals by providing quality, flexible, lifelong technical and vocational education.

FCTVE Strategic Plan 2007 – 2009

Although consensus was reached between about 28 people in the workshop and the TA Team believed there was general agreement, it later became clear by lack of action demonstrating commitment to these important statements that the vision and mission were, to some extent, imposed on the organisational members. The TA Team did not intend to impose nor were they aware they had made this imposition. This was illustrated nearly a year later when the college strategic plan was developed and there was little evidence of the inclusion of the vision and mission statements in strategic objectives and activities. This is expanded in the next phase when the College Strategic plan is developed. The TA Team believed that under the prevailing organisational culture at FCTVE, it was important to start the change process with vision and mission statements but this goes against the advice of Fullan (1993) that these statements should come later. In retrospect, Senge's (2006) warning about the imposition of one group's vision proved to be prophetic.

During the 2006 workshops, the new staff and managers asked about the policy justification for the new approach. They were somewhat mollified by the explanations

given by the TA Team of the inclusion of distance and flexible learning in both the NPVET 1997. However the issue of the role of the Botswana College of Open and Distance learning (BOCODOL) was raised at this time and subsequently by a range of DTVET and college staff.

*“If we’re supposed to do distance learning – what about BOCODOL?
They are the ones who do distance learning in Botswana.”*

Head of Department Construction December 2006

This shows us that there were clear views held by staff – mental models in Senge and Fullan’s terms – that distance education should be done by BOCODOL and not by FCTVE or other institutions. This is discussed when it arises again in Phase 4.

5.5.4 Concern for resource availability

During this period, the Researcher visited all six of the existing government technical colleges to discuss distance and flexible learning with the staff and management and to evaluate their readiness to become outreach centres for the FCTVE distance learning programmes. Their suitability was evaluated against a set of criteria and a weighted scoring system devised. Two colleges, Jwaneng Technical College and Selebi Phikwe Technical College were recommended as being the most suitable.

Discussions with teachers and managers from these colleges revealed a positive but cautious response to participate. There was some concern regarding the permanence of managers and staff who stated that they are likely to be relocated to other colleges. One Principal was already informed that he was to be moved to another Technical College (in order that the current Principal could be moved to FCTVE as Deputy Principal.) The managers repeated the concern that they do not have sufficient human or financial resource to take on any more students – particularly in Key Skills where it is very difficult to attract and retain teachers. The planned pilot distance learning programme to be offered from the outreach centres was the Entrepreneurship course in the Key Skills Department.

The new Principal, upon taking up the leadership of the technical college selected as an outreach centre, was asked about potential challenges in being an outreach centre for distance learning.

“Staff shortages ... we would like to have people especially responsible for distance education but that is not possible as DTVET will not give us extra staff. Distance education is a flexible programme so learners may demand resources the college cannot manage to provide – so learning resources might be a problem. Funds are likely to be a problem – for the printing of materials.”

Technical College Principal, November 2007

It was clear from very early on in the process that the managers involved in implementing distance and flexible learning had very realistic concerns about the likelihood of adequate human and financial resource being made available from DTVET. Again we see the difficulty of enacting a policy statement when there may not be an adequate or timeous connection between implementation plans and budget availability. Towards the end of the TA Team time at FCTVE, the Principal and some Heads of Department became very concerned about the lack of human and technical resource to continue distance learning and elearning at FCTVE. This is described in the fourth phase in Section 5.7.2 on adequate human resources for distance and flexible learning.

5.5.5 Impact of action from Ministry Officials

A significant development in the adoption of the new mandate was brought about by the interest shown in distance and flexible learning by the DTVET Officer, the Principal Technical Education Officer (PTEO) for Hairdressing and Beauty Therapy (HBT). The PTEO expressed her interest in distance learning to the TA Team and through a series of discussions it was established that a distance approach could help meet some of the challenges being faced in this Department which included:

1. The difficulty of finding qualified staff as nearly all Hairdressing and Beauty Therapy staff are expatriates from Kenya or Zimbabwe.
2. To offer Diploma level, the staff need at least a Diploma and it is difficult to find practitioners qualified at this level who want to teach for a government salary. They can earn much more in private beauty salons.
3. The BTEP Certificate is a good qualification in Hairdressing and Beauty Therapy – a high percentage of graduates from Gaborone Technical College (the only college offering HBT before FCTVE) go on to get employment or self-employment.
4. Anyone who would want to continue improving their qualifications is likely to be working so full-time courses would not be appropriate.

The specific reasons for the Principal Technical Education Officer's interest were to optimise the use of salon time and space and to overcome the problem of lack of suitably qualified teaching staff. If aspects of course theory could be covered through distance learning then more time could be spent on practicals as well as more time for lecturers to develop quality material and to open access to working persons who cannot attend full time college to gain a qualification. The Principal Technical Education Officer also explained that introducing distance learning into Hairdressing and Beauty Therapy would enable her to implement the DTVET strategic plan. She provided details that under the Key Result Area of Customers/Stakeholders, there is an objective to increase access to TVET. It was agreed to hold a workshop to plan for distance delivery of Hairdressing and Beauty Therapy at FCTVE in February 2007. After this workshop the Principal Technical Education Officer was fully committed to a distance approach to widening access to her subject at FCTVE and more significantly, demonstrated her commitment by the support she gave to the single lecturer appointed to FCTVE for this subject.

“This [DFL] is something we need to take seriously to maximise efficiency by freeing up lecturers’ time and the physical resources in colleges. DTVET should make every effort to ensure that effective distance and flexible learning is introduced to BTEP. Our target group of

students are working, they're adults – flexible learning is a better use of their time – they can work at the same time as they study. And employers would benefit from employees with higher level skills especially if their learning did not impact on their hours at work.”

Principal Technical Education Officer Hairdressing and Beauty Therapy, February 2007

This quotation is significant because it shows that with the commitment of the senior subject official in DTVET, teaching and learning approaches can change in the college. The first students to be admitted to FCTVE were distance students in Beauty Therapy. The lecturer knew she had the support of the DTVET officer and they worked together (with the TAs) on the development of the new learning materials and assessment items. The Principal Technical Education Officer acted as peer reviewer throughout the process, assisted with developing the assessment instruments and supported the negotiations with Quality Assurance and Assessment for unit approval. This enabled the completion of a high quality distance learning course with ICT enhancements. It was hoped that this would act as an inspiration for the other departments in the FCTVE but this did not happen.

5.6 PHASE 2 : CRITICAL EVENTS AND CONCEPTS EMERGING APRIL 2007 – DECEMBER 2007

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2006												
2007												
2008												

The first critical event came in April 2007, when college managers, staff and the TA Team moved into the college buildings. This meant there were offices available to work from and the substantive change process could begin with the planned staff development activities. During this second phase 8 important issues emerged:

1. Teachers’ mental models and the concept of flexibility

- 2 The role of change agents
- 3 Approaches to change
- 4 The effect of bureaucracy at FCTVE
- 5 The impact of national culture on change processes
- 6 Identification of barriers to change
- 7 Commitment of Ministry officials
- 8 Development of FCTVE Strategic Plan

The TA Team established the FLU – Flexible Learning Unit – which was a computer training room from which to offer staff development courses in new technology and teaching approaches. A training needs questionnaire was administered, staff development activities developed and a monthly schedule of training courses was established. A series of workshops were offered by the TA Team to build the capacity of staff in using ICT for teaching and learning. The training needs analysis revealed that most teachers had basic ICT skills so the focus was on the application of ICT to new teaching and learning approaches. There was a high level of interest in the capacity building opportunities offered by the TA Team. The Final Report of the Technical Assistance project notes:

“More than 55 workshops on 20 different topics offered during the TA Component with about 90% of the staff in the BTEP vocational areas participating in several workshops.”

TA Team Final Report p16

TA Team records (Staff Record of Capacity Building Workshops Attended) show that 44 staff members participated in some training with half of those participating in 4 or more different training events. The Flexible Learning Unit was available every week for any staff member who wanted to ‘drop-in’ to practice new skills, try new software or work alongside a TA ‘coach’. No formal records were kept of teachers’ use of the FLU but the TA responsible reported at various meetings that demands on the FLU for support with developing new learning materials, were minimal. Efforts were made to encourage

workshop participants to subsequently develop new teaching and learning materials and come to the FLU for support – but the response was limited.

During the fieldwork the Researcher observed that lecturers were interested in learning new skills and expanding their knowledge about ICT but they demonstrated little evidence of using the new skills to change their approach to teaching. This suggests that the top down approach of edicts from DTVET seen as being implemented by an external team made little impact. Their new skills could be observed in workshops and in some of the new teaching resources they created but what was missing was the attitudinal change – the change of mind set from contact teaching to distance and elearning. Very little behavioural change was noted by the TA Team as teachers continue to develop their learning materials and complete procedures for programme approval for fully face-to-face contact courses.

Reflecting on this lack of attitudinal change, the Researcher can identify an over emphasis on capacity building in technical skills and knowledge and not enough attention to the affective domain. There may have been more take-up if the new approaches if the TAs had focussed less on technical training and spent more time in discussion. This was done with the Heads of Department and Management Team but not enough with the teachers. But at no point were teachers and managers asked if they wanted to implement this change – it was taken as given.

5.6.1 Teachers' mental models and the concept of flexibility

The TA Team focussed on building the capacity of lecturers to integrate ICTs into their teaching and for managers to understand the issues and challenges in the process. There was a growing awareness of a small number of individual lecturers of the potential of distance and flexible learning for their subject area; specifically, one lecturer in Hospitality, another in Beauty Therapy and another in ICT. These staff members were known to the TA Team as the *early adopters* as Rogers' 'Diffusion of Innovation' theory terminology crept into our parlance (Rogers 2003). According to Rogers adoption of technological innovations requires participants to create and share information with

each other through activities and practices in order to bring about change in the social system.

It was during this period that the innovators or early adopters of new teaching technologies and approaches started to emerge. The interest of this small number of lecturers was attributed to the growing appreciation on their part that the new teaching approaches involved in distance and elearning fitted into their world view. The concepts of mental models and personal mastery (Senge 2006) and personal vision-building (Fullan 1993) became an important consideration as reviewed in Chapter Three on the literature. Trood and Gale in their analysis of the introduction of flexible delivery into the Australian VET system noted that while there was a well-articulated government policy and definition of flexible delivery, *“For those engaged in directing the activities of the VET classroom, it requires a major conceptual leap to take such a definition and relate it to practice, to what is actually done”* (Trood & Gale 2001:166). It became clear that the mental models of teachers were an important influence over their behaviour. In an effort to understand their views on the new approaches, the Researcher talked to the early adopters to ask why they had started with distance and flexible learning.

“When I heard about it [distance education], it sounded interesting ...especially as there is only me in my department. If I didn’t have distance education then I wouldn’t be able to do anything. Preparing distance learning materials makes you study even more and you get a chance to do research on your subject. With face-to-face, I just prepare for tomorrow’s lesson as I go along. With distance education you are forced to do research to make sure you know your subject. The only concern I have is that I won’t know the students as well as I know them in face-to-face. I will miss the closeness with students that you get with face-to-face.”

Lecturer Hairdressing and Beauty Therapy, October 2007

“It exposes us to different teaching methods. Each student is individual. Some want traditional approaches, others want high tech. It helps you address them all as individuals. The use of modern technology helps you to be a better teacher.”

Lecturer Hospitality, October 2007

“I am happy to get the opportunity to start a distance learning unit even though our learner’s guide was not designed for that. We will have to change the approach used in order to satisfy the distance learning qualities. With IT, elearning is very relevant to my subject ... this is not the same for say, lecturers in Construction ... they don’t need to do it so they are not interested. And it is easier for IT lecturers to learn to do elearning. But the other lecturers in my department are not doing elearning.”

Lecturer ICT September 2008

There was a prevailing view, especially amongst some of the older staff, that practical skills cannot be taught other than in the conventional, face-to-face method. This issue is raised again in the third phase in the section on overt resistance. Although commenting on a very different development context, Palmieri (2004) notes the difficulties of reaching past the ‘early adopters’ of new teaching and learning technologies in Australia, despite the considerable national government focus and funding to facilitate this.

Those lecturers who did not change their teaching approaches gave systemic reasons why they had not done so. The Researcher discussed the efficacy of offering the Botswana Technical Education Programme (BTEP) through distance and elearning:

“BTEP requires attendance registers to be reviewed by EVs [External Verifier] so it won’t work unless we educate EVs and QAA [Quality Assurance and Accreditation Unit]...lecturers are more used to traditional

teaching so we sometimes just fail to change our mindset to say this can work. It may not be the right time to do distance learning in BTEP. For most vocational areas there is the problem of how to do practical and how to assess.”

Clothing Design and Textiles Lecturer, December 2008

This particular lecturer attended all the staff development activities offered by the TA Team. He had this to say about the staff development:

“I’ve attended almost all the workshops given by the TAs. I chose to sign up because as a teacher they were developing me. PowerPoint really helped me to be a better presenter or teacher. Moodle was most useful because it showed me there are other ways one can teach. I know how to give assignments on Moodle. I didn’t think some of these things were important but now I can see they are important because they cut down on time and students can check their feedback instantly.”

Clothing Design and Textiles Lecturer, December 2008

Despite considerable training, still this lecturer did not develop any distance or elearning learning materials or show any signs of changing his teaching approach. Geoghegan suggests that lack of adoption is more to do with an aversion to risk, inadequate support and the lack of a compelling reason to accept a relatively disruptive way of teaching rather than any aversion to technology (Geoghegan 1994). The observation of the Researcher was that the lack of a compelling reason to change was the dominant factor for most teachers at FCTVE.

It was noted in Chapter Three that Lewin’s work on field theory, group dynamics and the 3-step change model was found to be useful in implementing the FCTVE change process (Lewin 1951). Following Lewin’s concept of opposing forces in change, the TA Team discussed the restraining force of the prevailing mindset of the teachers and managers and what counter force could help to change it so that they would move

towards more flexible teaching approaches. The team believed that the driving forces for change should be strengthened and communicated more – the national policy imperative, the equity issue of providing for more Batswana citizens, the potential quality improvements in programme delivery and the opportunities for personal development. In tandem, the team looked at how to address the restraining forces which were predominantly a perceived lack of commitment and management imperative from both DTVET and college senior management and the strength of their existing mental models and mindsets that teaching should be done face-to-face. But Lewin points out that increasing the driving forces usually results in increasing resistance. He recommends reducing the resisting forces to reduce tension. Lunenburg propounds that *“Given a choice, most school organizations prefer stability to change because the more predictable and routine activities are, the higher the level of efficiency that can be obtained”* (Lunenburg 2010:2).

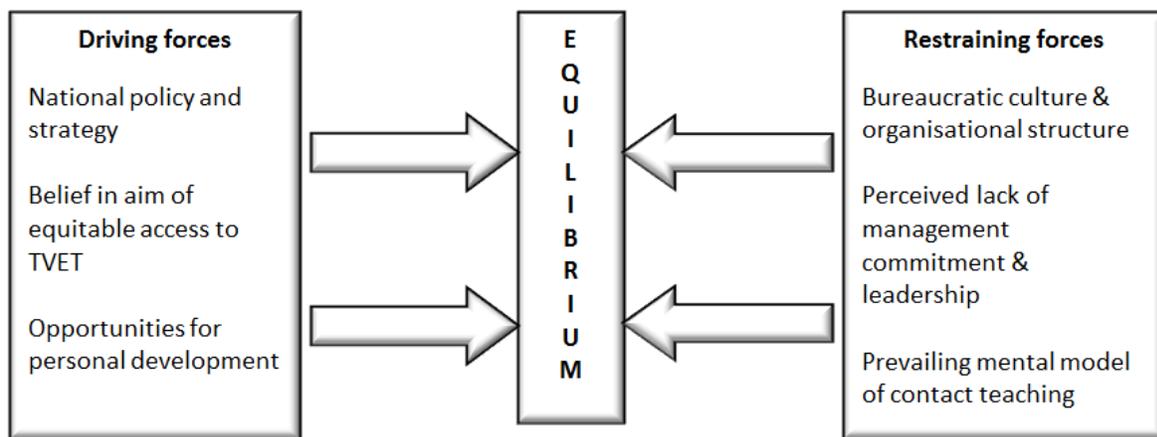


Figure 5.4: Driving and restraining forces for change at FCTVE

Lewin’s force field theory (1951) contends that people must first ‘unfreeze’ their thinking before change can take place. With the prevailing focus on national policy statements and the fact that collectively and individually most managers could articulate the reasons for introducing flexible learning at FCTVE, it was believed that the unfreezing process was under way for some teachers and managers. Unfreezing is the beginning of any successful change process as it involves developing a compelling message why things cannot remain as they are. Perhaps the FCTVE change process failed because

the teachers and managers did not develop their own compelling reasons for change. The rationale of government policy and the technical input of development partners through the TA Team was considered to be compelling enough. It was not. Developing a compelling message includes challenging the beliefs of the participants and has a tendency to put people off balance. It was recognised by the TA Team that this was an unsettling process for most people. They told us they had grown up with traditional face-to-face teaching methods and this is what they understood and were comfortable with. Now they were faced with not only moving to higher content levels with the advanced certificate and diploma, but new advanced equipment which they had not used before and then they were required by policy to locate this within the paradigm of distance and elearning.

“Lecturers need to be very interested in flexible learning ... if we’re not interested then we are not going to do it. The background of lecturers here is in traditional/conventional education. We need a paradigm shift as well to take on board the new ideas. What is hindering progress is the low comfort levels with ICT. Some people are resistant to change ... they worry that other people will laugh at their lack of skills.”

Clothing Design and Textiles Lecturer, December 2008

Perceived flexibility of BTEP

It was observed that there was a shared view amongst many staff members on the degree of flexibility possible with the BTEP:

“In theory, it [BTEP] sounds flexible but in practise it is not. There was meant to be flexibility in pacing for the students but they misused it and staff were unable to monitor it correctly. Some students would say they were not ready for assessment just because they knew they were allowed to do it. And taking on too many groups meant that the flexibility in pacing was restricted. Because we are now reducing the time frame a lot of learning has to be condensed into the time frame and so the

flexibility is compromised. BTEP is now rigid in how it is being delivered.”

Head of Department Business, January 2008

“BTEP is supposed to be learner-centred so it is very flexible. But it is not really delivered learner-centred. In our society, we were never introduced to learner centred education ... we didn’t know what it was ... there was no training.”

Clothing Design and Textiles Lecturer, January 2009

“It is not flexible – well maybe in name only. It is outcome based but delivered within very rigid structures – like we are still planning delivery on a termly basis. When we try to deliver more flexibly then other people in the college want to do it in the traditional way. There is so much more that we could do flexibly – like assessment but it is going to be difficult under the present system. The design of BTEP is good and it can be delivered flexibly – but it is not done like that. The problem is the implementation – there is a lot of rigidity.”

Head of Department ICT and Multimedia, September 2008

This manager had recognised the potential value of flexible delivery to his Department after he had completed the development of his face-to-face learning materials.

Unfortunately this change came too late for the TAs to provide substantive technical support to help him develop new programme formats. This again points to the critical issue of timing of this reform and the potentially negative effect of implementing two major reforms at the same time. Inevitably, one will take precedence over the other.

Some staff said BTEP was not at all flexible:

“I don’t see any flexibility in BTEP. I’m not sure where the problem is ... is it because we are used to the old method and cannot change? Maybe

the design is flexible but not the delivery. I don't see any student-centeredness in it – we are doing everything for the students.”

Business Lecturer, November 2008

“The design of BTEP is very flexible, but it is the implementation which seems to be rigid. Some teachers hang on to the old ways of teaching and then we don't feel the full potential of the programme.”

Head of Department, Business, January 2008

The BTEP Guide to Implementation (GoB 2004) states the underlying principles of the BTEP curriculum as a commitment to providing flexible entry and exit points, flexible access to learning and assessment and equality of access for all potential candidates. Colleges are guided to make decisions on how they will provide a BTEP candidate-centred approach to learning and flexible delivery of BTEP units. One of the Advisers to DTVET (who was not a member of the Proman TA Team) made a comment which supports the view that a change in teaching approach is hard to bring about in the context of the government TVET colleges:

“In reality, whilst the design [of BTEP] may have been flexible, many teaching staff have limited teaching skills which means the delivery has become rigid and inflexible, leaning towards didacticism with many staff unwilling to work flexibly and courses being ‘over-taught.’”

Management Technical Adviser DTVET, May 2007

These statements point to the prevailing model of didactic teaching within the government TVET system. The Management Technical Adviser's comment confirmed the view of the TA Team that the change process required to institutionalise the BTEP curriculum reform, was only slowly gaining traction after many years of implementation. Most participants noted that whether it is designed flexibly or not, BTEP is currently not delivered flexibly. The point made by one of the lecturers about teachers not having been introduced to learner centred education (presumably in pre-service or in-service

training) again points to the need for unfreezing in Lewin's terms. It was important for the TAs to remember that many of the lecturers and even some of the Heads of Department had no formal teacher training qualification and we observed that – not surprisingly – many of them stuck firmly to the strategies - or mental models – they had developed for their own teaching practice which was based on the didactic model which they were taught in school.

5.6.2 The Role of Change Agents

TA Team discussions with management were centred around what more could be done to encourage lecturers to put their new skills into practise. This led to the Researcher probing deeper into the views of participants regarding the role of the TAs in the process. College managers, lecturers and DTVET officers were asked for their view on having a technical advisers' team to help introduce the new teaching and learning technologies. Of course, this is a loaded question given that the Researcher was a member of the TA Team. Most, but not all, people were positive, citing the need for technical experts to offer guidance. Even the Principal alludes to the idea that the TA Team were not universally accepted.

“It's a brilliant idea – it brings expertise into the whole exercise. Not everyone feels that way, but personally, I feel it is a good way to do things. You get someone who is not part of the system to come and assist with the journey of change. People always prefer to remain in their comfort zone. You need someone from outside to help you see what is missing.”

FCTVE Principal, June 2007

“Their input is very valuable. Distance and flexible learning are things we have heard of but we have never done them for real. The TAs are here to guide us through in doing it the right way. Otherwise we would have to learn from reading and may make mistakes. New technologies need to be explained. We need the TAs to put up structures and

provide guidance on how to interpret the whole programme of distance and flexible learning.”

Head of Department Business, January 2008

“A lot of people don’t understand why the TAs are here – they think it is just white people getting paid a lot of money, but people are not looking to the future. The TAs should still be here in the future because we are not yet running at full load with Moodle and elearning. As long as enough of us are empowered with Moodle Administration skills then the ICT department will keep the system running.”

Multimedia Lecturer, November 2008

This was an interesting response and an issue which had not been picked up in conversations with any other lecturers. It is interesting because of the six original TAs, two were Batswana and when the TA Team was expanded in the last phase of the project, they were all local Batswana hired for their media expertise. Even more interesting is the confidence of the lecturer that his department would be able to sustain the use of elearning after the TA project has ended. His Head of Department was not so confident.

“When the TAs leave we will not have enough IT officers on the ground to support future development of elearning and distance learning. This will be a challenge for staff and college managers also.”

Head of Department ICT and Multimedia, September 2008

The same Head of Department had this to say on the TA Team as change agents:

“The TAs have not achieved all they could have done but to use them was correct, You can’t use people who have grown up in the old system – they can’t change. You need an external force ... people who can look at the situation objectively. It’s not easy for people who have been 20 years in the system to see things differently.”

This realistic assessment of the achievements of the TA Team was unfortunately never voiced in a public forum. Perhaps if staff had felt they could offer constructive criticism to the TAs then more progress could have been made.

It was noted in the literature review that change agents are a common feature of change processes involving technology integration in higher education. The TA Team was clear about their role as technical experts in the process but felt that the role of change agent had been foisted on them because of a management vacuum.

“TAs should not have been the change agents – that should have come from management. Or we could have had counterparts to work with instead of being expected to change the whole system without support from either college management or DTVET.”

Technical Adviser, December 2008

We found that the TA Team members were generally accepted as change agents because of their perceived expertise in distance and elearning. It seems that in this context, where the change involved the requirement for considerable skills development, the use of external expert change agents was an appropriate strategy. However, it could have been implemented more effectively with greater attention to teachers' mental models and attitudinal change rather than a dominant focus on technical capacity building.

5.6.3 Approaches to change

The Researcher solicited the views of different actors on the most appropriate form of change in government technical colleges. The opposing approaches of top-down and bottom-up occurred frequently in the literature regarding technology infusion in higher education institutions (Fullan 1993; McNay 1995; Berge & Kearsley 2003; Stiles & York 2006; Wrigley 2008) and particularly in Australasia (Uys 2000; Cummings *et al* 2005; Scott 2003; Gunn 2011). A review

of different top-down or bottom-up approaches to change was undertaken and the issue was discussed with various participants in the FCTVE change case study. When college managers were asked about the best approach to bring about change at FCTVE there were a range of responses. The Principal of one of the selected outreach centres said:

“It depends on the situation but change is generally more effective if the lecturers can innovate, be creative and own it. They’ll make it a success because it is their own. But this is not the normal way of change here. It’s actually quite difficult to be creative and innovative in this environment because it is not welcomed or recognized as a positive input.”

Principal, Technical College, November 2007

This manager could clearly articulate what she thought was the best change strategy but was realistic that her view did not fit the prevailing organisational culture. The Principal reiterated this concern with a cultural norm that did not seem to value innovation.

“I don’t know any other way other than having policies to guide you. But maybe there is. If people at the bottom have ideas they need to be focussed or brought together. It’s not so easy to be innovative in the hierarchy we have here, people tend to wait to be told what to do. Here, in most cases, things are imposed on employees. In most cases they are not consulted if changes are going to happen.”

FCTVE Principal, June 2007

“If it is top down then people only do it because they are required to do so. This is what happened when BTEP was introduced – people felt it was being imposed on them and they didn’t like it. I’m talking about buy-in. Some staff are just making excuses not to do it – they argue that it is

additional workload because they don't want to do it. It is difficult to initiate things from the bottom in DTVET. People at the bottom don't have power."

Head of Department Business, January 2008

Here, we see evidence that the college manager believes the best way to bring about change is by involving the teachers but the perception of the prevailing approach in the Ministry is top-down, implying that innovative behaviour is not welcomed. The FCTVE Principal relies on his experience of following policy directives whilst recognising that innovative activities from staff are unusual and following instructions is the norm. The Head of Department's response was more realistic, noting that teachers don't like change being imposed on them but that power to initiate change only resides at the top of the hierarchy.

Teachers on approach to change

Teachers, not surprisingly, when asked their views on the best approach to change, favoured bottom up approaches:

"Bottom up is better ... when teachers experiment, more is achieved. With top-down, government can have its policies in place but those can't directly influence teachers. When teachers have done research and learned for themselves they are more likely to take on distance and elearning."

Hospitality Lecturer, October 2007

"Bottom-up is best. If it comes from the top down then they are imposing on us and they will face strong objections. How we teach BTEP is supposed to be up to us. But you have to create the conditions for bottom-up initiatives – to allow people to come up with different suggestions."

Hairdressing and Beauty Therapy Lecturer, December 2007

DTVET officers on change strategies

There were conflicting responses from senior DTVET officials. The Head of QAA echoed the concern with bottom up innovation and noted the efficacy of the top-down approach under the prevailing culture.

“Top down – I’m used to that – that’s how we do things here. For people at lower levels to implement an idea – how much support do they get? You need to have supportive management to implement new ideas. For the moment we should have a top down approach for people to be told what to do. In our structure there is not really room for people to be innovative from the bottom.”

Head Quality Assurance and Assessment, February 2008

The Acting Director of DTVET had recently presided over the major curriculum reform activity for BTEP and noted the problems of top-down approaches:

“Bottom up is better because of the way we approached the introduction of BTEP. Consultants worked with Head of Departments and people were left behind. We need more cascade to make sure that everyone is on board. If the aim is to have flexible learning then it should be supported by top management. The question is, how do we do it? It is very important that the people at the top are involved so they should understand the concepts. A big thing like this involves everyone.”

Acting Director DTVET, August 2007

Although the DTVET Acting Director holds a personal view that bottom-up approaches are more appropriate, it is observed that the prevailing view of both the organisational and national culture is that the most likely way that change will happen is through top-down approaches. Particularly the middle managers indicated that bottom up approaches are likely to be more successful but there seems to be a resignation that change will only be initiated from the top and with a policy directive.

Other stakeholders views on change strategies

To place this discussion in the wider educational context external to college, the Researcher explored this issue of approach to change with the Executive Secretary of the Tertiary Education Council. The Tertiary Education Council was formed in 2003 to be the apex organisation responsible for the promotion and coordination of tertiary education and for the determination and maintenance of standards of teaching, examination and research in tertiary institutions.

“Leadership is at the centre of change. Institutional managers are going to face many changes and the success of that change is going to depend on leadership. I’m afraid that many of the current institutional managers will have to retire.”

Executive Secretary, Tertiary Education Council, September 2008

The emphasis on top-down, bureaucratic culture in government institutions is reiterated in a comment in TEC’s strategic plan which relates to its own bureaucratic structures:

“These positive characteristics were however likely to be constrained by the top-down and bureaucratic culture of decision making that some internal stakeholders pick up as an issue”.

Tertiary Education Council, Strategic Plan 2012 – 2016:11

People have different views but the themes emerging are that most people think bottom up approaches are best because of the culture of consultation and discussion in Botswana. But the reality of the situation is that in government bureaucracies, change is brought about by edict, top-down, and there is a certain level of comfort in that. Researchers in the university sector, especially in developed countries stress that institutions must become less bureaucratic to allow innovation to be sustained. (McNay 1995; Scott 2003; Stiles & York 2006).

5.6.4 The effect of bureaucracy at FCTVE

During discussions and interviews the issue of bureaucracy and bureaucratic structures in DTVET was raised by college managers. The Researcher observed that the dominant culture at FCTVE was bureaucratic and this observation was supported by the comments of participants. During the interviews, bureaucracy and political will were mentioned by several college managers and senior lecturers from other colleges in discussions on the conditions for change:

“For distance and elearning to be successful you need to win the support of someone at the top – like the Minister of Education. Otherwise here in Botswana it cannot work.”

“Yes, it is better if it is a top down approach because it is that way in Botswana culture. We like to have the Chief tell us what to do.”

“There are the systems in the colleges – the bureaucracy really, which provides the way of working. Some subordinates have good ideas but they are sometimes afraid to voice them. Maybe this is because of the system, they don’t want to say what they think and stick out.”

BTEP Training Team focus group, August 2007

“The problem here is the bureaucracy – it wastes time especially with junior people who are creative. It is difficult to be creative and innovative in a bureaucracy. If we have a bottom up approach then we all start together and all learn together – and it doesn’t take authority away from those at the top. But some people at the top might not feel comfortable with that.”

Head of Department Key Skills June 2007

“Bottom up approaches work best because these are the people on the ground and who will be implementing such methods. They know the constraints that go along with implementing. The culture here is more bureaucratic, more top-down although government is sometimes

pressurised to take the views of people in policies. The current culture in DTNET and government is top down.”

FCTVE Deputy Principal January 2008

Bureaucracy emerged as a defining concept at FCTVE and led to further investigation of Weber's work on bureaucracy and the relationship of bureaucracies to change as presented in the literature review in Chapter Three. The distinction between universities as professional bureaucracies with a main characteristic of resistance to change and universities as machine bureaucracies was cogent. Rogers suggests that, “*Organizations today are obviously quite different from the structures described by Max Weber*” (Rogers 2005:407) but as noted earlier, it was the experience of the Researcher that the characteristics of the ideal type of bureaucracy as defined by Weber were found at FCTVE which more closely resembles Mintzberg's machine bureaucracy with standardized responsibilities, qualifications, communication channels and work rules as well as a clearly defined hierarchy of authority (Mintzberg 1979). Handy's role culture description pointed to the dominant structure and processes at FCTVE (Handy 1995).

One lecturer commented on the nature of management and authority in the college.

“It all depends on management ...some encourage flexibility but some are stiff and not flexible at all. Flexible learning needs flexible management so we need a change of mindset. Here, the principal is carrying too much on his shoulders – he doesn't have enough back-up. The problem is that the DPs [Deputy Principals] cannot take a decision without referring to him. It's killing him – he cannot initiate new activities under the weight of administration ...you know, initiate new ideas like flexible learning.”

Clothing Design and Textiles Lecturer, January 2009

This points to the hierarchical structure of the college and the tendency for staff and managers to delegate upwards. It was observed that staff members other than the

Principal were reticent about taking decisions and preferred to go to their line manager for decision making. These quotations show how the participants recognise the difficulties in bringing about change without the participation of the subordinates (or those on the bottom). At the same time, they refer to problems associated with change where those in authority do not feel they have control. This gives rise to a particular culture where change is thwarted – not by differing ideals – but rather by the tensions between those in authority and their subordinates. Fullan argues that for transformation to take place, it is necessary to have both the ‘top’ and the ‘bottom’ participate in the formulation of the vision and in the strategy for implementation. He describes the need for shared vision in an organisation attempting to change but he links this to personal vision-building because, “... *there must be something to share. It is not a good idea to borrow someone else’s vision*” (Fullan 1993:12). In his study of the virtual classroom in New Zealand, Uys concluded that if innovation emerges from outside senior management, to be successful, it also needs a top-down management component (Uys 2000).

5.6.5 Performance based rewards

The Government of Botswana has a well-defined Performance Based Reward System (PBRS) which was identified by the TA Team and FCTVE management as a possible drive force for bringing about the change needed to introduce new teaching approaches. However, the PBRS appears to be part of the bureaucratic structure of the government rather than a functioning tool for motivating and rewarding excellent performance amongst officers. The DTVET officer responsible for performance management introduced the subject of bureaucracy in relation to the performance based reward system (PBRS) that he was tasked with managing. He spoke at length about how the performance based reward system is not well understood in the colleges and indicated that there is a clash between introducing a performance based reward system into bureaucratic government institutions.

“There is a clash of ideals... colleges are run as a bureaucracy which is opposed to the motivational aspects of PBRS. At college level the buy-

in is not that good because it is being cascaded from the top. Until people on the ground feel it is their business then it won't work. But people think 'top-down' is the way it should be."

Principal Technical Education Officer Performance Management, January 2009

This is an example of how moves away from a bureaucratic culture and towards a more enterprise culture as described by McNay (1995), met with severe resistance throughout the TVET system. That PBRs is not well understood in colleges was confirmed by the FCTVE Principal and a range of lecturers.

"But this is not the normal way of change here. For example, PBRs was top down but it is not succeeding because the people don't own it."

Principal, Technical College, November 2007

"Nobody understands it [PBRs system] – even those who teach us – they all say different things. It was the same at GTC even [Gaborone Technical College]. There is a lot of confusion. There is nothing in my PDP [Personal Development Plan – part of PBRs] about flexible learning – it was not high on the agenda in the Department."

Clothing Design and Textiles Lecturer, January 2009

"The PDP [Personal Development Plan – part of PBRs] is a good tool but it's not being used effectively. We only think about our PDPs when it is time for our appraisal. No-one works on the activities stated in their PDP. The monitoring is not very sound and they keep changing the forms so no-one really understands them anymore."

Clothing Design and Textiles Lecturer, December 2008

"I think we are not doing it [PBRs] correctly here. There is not a good understanding generally. We are forced to adapt DTVET objectives and are not able to have our own. Most of our objectives are at too high a

level – they are not relevant to the college. Flexible learning should be part of the objectives of the college ... it should be a managerial instruction. If there are tools to monitor then people will do it. It's a government bureaucracy so they do as they are told. Flexible learning is our mandate so we must do it"

Multimedia Lecturer, November 2008

These quotations show that although most lecturers and managers recognise the potential of the PBRS it has not been implemented well enough so that people can fully understand it and integrate it effectively into personal and organisational planning procedures. PBRS was frequently used in connection with the concept of bureaucracy and was introduced by lecturers, Heads of Departments and DTVET officers as well as the BTEP training team who are themselves, a team of change agents for the new technical education programme.

5.6.6 The impact of national culture on change processes

Several participants mentioned national culture in relation to change. It is worth noting here the published values of DTVET which are replicated in the FCTVE strategic plan and reflect national culture:

We are committed to the following values:

- | | | |
|---|----------------|--|
| 1 | BOTHO | We will be compassionate, courteous, selfless and prompt in dealing with our customers. |
| 2 | TRANSPARENCY | We will provide full information on matters of public interest. |
| 3 | CUSTOMER FOCUS | We will be responsive to the needs of the customer at all times and consult with stakeholders. |
| 4 | FLEXIBILITY | We are committed to accommodating creativity, innovation and team work. |
| 5 | THUTO | We are committed to the culture of continuous learning and the quest for excellence. |

DTVET Strategic Plan 2005 – 2009

Consultation is important in Batswana society and at community level is considered an invaluable asset for reaching and sustaining agreements. It became clear that consultation is a significant expectation of the people involved in the change process but as part of a top-down approach which is concomitant with national culture.

“If flexible learning is to drive the national interest then it is important that it comes from the top. But there must be consultation – this is the Botswana culture – consultation is very important. You have to get ideas from people and tell them what you are planning.”

Head of Department Business, January 2008

“We are better off if people are involved from the grass roots...people feel involved. Consultation helps, it’s part of our culture in Botswana – I feel we should involve as many people as possible – especially those affected and required to implement the new courses.”

Head of Department Key Skills, June 2007

“Top down is better because our society is never serious ... we don’t get fully committed to what we are doing unless something really motivates us. We don’t want to be seen by our boss as not doing what we are supposed to. It’s cultural – we listen more to those at the top than those below. This depends on our culture itself.”

Clothing Design and Textiles Lecturer, January 2009

“It [flexible learning] should be treated as compulsory for lecturers. They [managers] should be strict with it – that’s how it works with us Africans!”

Clothing Design and Textiles Lecturer, December 2008

“DTVET should talk to people first and consult before imposing things on us. That is the culture here – everyone goes to the kgotla to discuss – it is how decisions are made and things get done.”

Hairdressing and Beauty Therapy Lecturer, December 2007

The concept of the *kgotla* is interesting. It is defined as a public meeting place for consultation and discussion and is found in most large Botswana villages. It is a cultural icon standing for democracy and consultation. In the development of the national elearning strategy for Botswana, Uys *et al* created an ‘e-kgotla’ as a forum for discussing the proposed new national strategy with a variety of stakeholders. (Uys *et al* 2004). In their study of faculty adoption of teaching and learning technologies in a Canadian university, Anderson *et al* note the influence of cultural conditions and describe it as problematic in many institutions (Anderson *et al* 1998) although they fall short of identifying any aspects of national culture which are specifically problematic to the introduction of teaching and learning technologies.

5.6.7 Identification of barriers to the introduction of flexible learning

Building the capacity of the Heads of Department and other middle managers was an important part of the strategy. This is reflected in the Skills and Roles element of the MIT 90s model. *“There must be investment in new skills, in psychological ownership of the change process, and in a safety net under the employee so that there is no fear of taking prudent risks”* (Scott Morton 1991:21). Two workshops were facilitated to introduce the college management team to flexible learning and to identify the challenges, or resistive forces, likely to be encountered in the management of this proposed major change in teaching practice. Schwering contends that the characteristics of the people carrying out the force field analysis are important as the technique is highly dependent upon their *“...experience, cognitive style, personality and resulting mental models”* (Schwering 2003:362). This rider was noted by the TA team and so it was important to identify driving and restraining forces collectively with the participants. Outputs of the workshops were a flexible learning SWOT analysis, identification of implementation challenges faced and departmental action plans for

implementing learning. This was an identification of resisting forces for change and strategies to mitigate them.

The resistive forces of interest to this study are the challenges or barriers to implementing flexible learning identified by the college managers. This is a transcript of a workshop flipchart created through a brainstorming activity during the workshop:

1. Do we have policy guidelines?
2. Inflexible bureaucratic administration systems
3. Need to have flexible staff contracts – working hours v teaching hours
4. Supplies department is not flexible
5. Procurement system is not flexible
6. Need flexible recruitment process and entry requirements
7. Educators need to unlearn old methods
8. Staff resistance to change
9. Human resource – do people have the right skills set, are there enough of them?
10. Staff comfort levels with what they are supposed to do.
11. Do we have sufficient ICT resources – PCs, video cameras, LCD projectors
12. Lack of funds for materials
13. Equipment maintenance and continuing technical support, will it be available?
14. Do people understand BTEP – like employers? Should we make sure all stakeholders understand BTEP before we try something new?
15. Quality and equivalence – perception of employers and students of DE
16. BTEP – flexibility is on paper only
17. How will we maintain security of college resources?
18. Continuity – will donors come along with another new idea and BTEP be changed?

Workshop Flip Chart, 31 May 2007

This was an important activity because it gave the college managers an opportunity to discuss their concerns and shared them for collective consideration and problem

solving. They are discussed here as emerging concepts. It was observed that some of the issues raised apply equally to conventional as well as flexible learning (Challenges 4, 5, 9, 10, 12, 14, above) but this is not surprising as the participants better understand conventional delivery and these are issues they are facing in their preparation for conventional delivery.

The issue of continuity (Challenge 18, above) is interesting because it indicates that someone associates the move to flexible approaches as being donor-driven and flags the idea that once the donor funding ends the BTEP itself may change. This, and the first point, indicates that there is a lack of detailed knowledge about government policies but there is a reliance and focus on them as pre-requisites for action.

It was not surprising (given the composition of the group) that the Heads of Department were concerned about their ability to convince their staff to try the new approaches (Challenges 7, 8, 9, 10 above). In later discussions, lecturers' resistance to change was identified by several Heads of Department as an expected challenge to the introduction of new teaching and learning approaches.

“Teachers have a general perception that distance education is not as good as face-to-face. People still believe that qualifications should be gained face-to-face. It should not be like that ... we need to change those attitudes.”

Head of Department ICT and Multimedia, September 2008

“The biggest challenge the management have to face is staff resistance. People here still believe in the traditional way of learning. They rely on the old fashioned way of formal learning because it is what they know ... and they believe DE is inferior quality.”

Deputy Principal, December 2008

Integrating Flexible Learning into college systems

Observations on the flexibility – or otherwise – of the service departments of the college relate to the issue of rigid hierarchical bureaucracies as discussed earlier (Challenges 5, 6, 7). For many months there was no Supplies Officer at the college. This meant that large quantities of new equipment were being delivered but there was no-one qualified to go through the process of adding it to college inventory and making it available for use. It was also difficult to get stationery and other general supplies needed for work. The DTVET Supplies Officer would come from Gaborone periodically and stay for a week but this was far from satisfactory. Consequently, equipment such as LCD projectors were held in the departments and controlled by the Heads of Department. There was discussion in college management meetings regarding the possibility of sharing the multimedia equipment held in the ICT and Multimedia department such as video cameras. These could not go into stores and be shared with other departments because there was no Supplies Officer only a Storekeeper who was ‘industrial class’ and could not be held responsible for any equipment.

Lecturers’ conditions of service

One of the most interesting challenges raised was the need for flexible staff contracts and the tension between teaching hours and contact hours (Challenge 3 above). This was raised in many workshops and discussions as a concern especially for the lecturers. In the Botswana government system, TVET teachers were contracted not as Teachers under the Teaching Service Commission but as Public Servants by the Directorate of Public Service Management. This meant that they were contracted from 07.30 – 16.30, Monday to Friday for which they received a salary. In addition, according to their grade they were contracted for between 12 hours (HoD) and 22 hours (lecturer) per week of contact teaching time. This issue was critical because with the proposed flexible learning approach, contact teaching time could be reduced. This led to teachers’ concerns of being accused of under-utilisation if they were not in the classroom with their students for all their contracted hours. There was no provision for counting the preparation of learning materials as contact time. The concern was described by some lecturers:

“This is how it is with the class attendance register – it’s being used twice. To check which students are in the class but it is also used to check if lecturers were in class to determine the actual contact hours they did. We also need to consider workload and utilisation – the way it is measured needs to be changed to be more flexible.”

Lecturer Engineering, January 2009

“I know some teachers don’t want to do flexible learning because they are afraid of being accused of under-utilisation if they’re not in the classroom for all their hours.”

Lecturer Beauty Therapy, October 2008

One ICT lecturer who quickly picked up Moodle skills and who had developed elearning material, said:

“It’s easier for IT people to learn from a computer. With elearning I can put my notes on Moodle but the contact time is the same. There’s less standing at the front of the class but not being in the class would be a problem of under-utilisation. I’d be accused of not helping my students.”

ICT Lecturer, September 2008

The issue of teacher utilisation is critical. It was also noted by Palmieri in the context of the introduction of elearning in the Australian vocational education and training system in the 1990s as described in the literature review in Chapter Three. Along with the staff and managers the Principal was well aware of lecturers’ concerns regarding under-utilisation:

“Staff fear to be accused of under-utilisation. It is a big change for the system to see activities other than classroom teaching as being properly utilised. We will have to look at that and make sure it is

possible for staff to do the flexible learning activities that need to be done in order for it to be seen as legitimate activity.”

FCTVE Principal August 2008

In a later conversation the Principal explained to the Researcher that because TVET lecturers are employed by Public Service Commission and not Teaching Service Commission in the centralised system it will be difficult to have this change brought about. Some DTVET officers were also aware of the issue: in a discussion with the Hairdressing and Beauty Therapy Principal Technical Education Officer about the potential challenges for DTVET management:

“Policies – we have not addressed overtime and payments for lecturers. There is also the issue of how we measure teacher utilisation. Right now it is measured only in terms of classroom contact hours. This will need to be addressed if we have distance and flexible learning.”

Principal Technical Education Officer Hairdressing and Beauty Therapy, July 2007

Here, the officer is identifying her concerns with the process of policy implementation. She clearly articulates that new departmental and institutional policies need to be put in place if national policy is to be enacted. The disconnect arose when this second level of policies were not addressed.

In order to offer evening or weekend classes, external part-time staff would have to be hired. Lecturers' reported dissatisfaction with this system. They would be prepared to work outside hours to support flexible delivery but expected additional remuneration for this. Lecturers' explained that they could not be paid for additional working hours because their public service contracts would not allow for this. Conversations with some teachers revealed the attitude that they were not prepared to do what they considered as 'extra work' without additional payment. This was articulated by a Head of Department:

“There is no proper compensation regime so we cannot pay lecturers if they work out of hours, say in the evening. We should be able to remunerate lecturers for working more flexibly but there is no provision to do that.”

Head of Department ICT and Multimedia, September 2008

This recognition of the need for change to existing policies is relevant. In the MIT 90s studies, McKersie and Walton describe the importance of changing human resource policies to facilitate organisational change. They note that this can help to mitigate resistive behaviour which may be caused by staff members who are trying to maintain the status quo by over-emphasising the existing policies (Scott Morton 1991).

5.6.8 Commitment of Ministry officers to change

The Researcher frequently heard comments from FCTVE lecturers and managers which indicate that the officials at DTVET were not very comfortable with the concepts and requirements of distance and flexible learning. Interviews with DTVET officers found that some were very positive about the move to offer BTEP through distance learning at FCTVE and could articulate the benefits:

“Young people want to get a vocational education – there is massive demand. When 16 places are advertised we get applications in excess of 1000. It is just not possible to meet the demand. And the mindset is changed; VET is no longer only for those who can’t make it academically. There has even been talk of double shifting but of course teachers are not for that. So DE mode should be introduced to help meet the problem of overwhelming demand for BTEP. But the DE programme must be robust – it is important that distance delivery is as good as face to face delivery or we will lose people. DE is a societal imperative because it will improve participation for uptake of VET. So we must put structures in place to make it happen.”

Principal Technical Education Officer Key Skills, May 2008

Inaction on the part of DTVET officials was sometimes interpreted by staff and managers and the TA Team as a lack of commitment to DFL resourcing and implementation although senior DTVET staff often insisted that they were committed to distance and elearning. When discussing the role of DTVET in the process, one lecturer at FCTVE noted:

“They should have responsibility from the top. There should be a DTVET officer responsible for distance education – to start them off. At the moment they don’t know anything about it – so how can they support it? Eventually distance education should be for all PTEOs – it must get embedded in the BTEP system and this can only happen if the PTEOs really understand it. They need the training that we are getting.”

Hairdressing and Beauty Therapy Lecturer December 2007

Regarding the planned distance learning programme in Entrepreneurship, the TA team wrote in the draft 6th quarterly report:

“After several meetings with the PTEO Entrepreneurship & Head PDD, a workshop was held to plan the pilot distance education programme in entrepreneurship. This was attended by Key Skills and Business staff from SPTC & JTeC as well as FCTVE. These 2 colleges have been recommended and accepted as outreach centres for the FCTVE BTEP distance programme. The participants have asked for an official request from DVET HQ to their college Principals in order to progress with developing the materials for this pilot DE programme. The development of a distance learning course for entrepreneurship at Level 1, 2 and 3 has major resource implication (both human and physical). Without clear commitment of DVET and the colleges involved as to the availability of these resources the development of the envisaged distance learning course will be seriously affected. The TA Team is developing a report on the resource implications. The report will be made available to DVET in Q7 for further discussion.”

Comment [m2]: This implies that DVET are not committed which is not true. Please rephrase!

Figure 5.5: Excerpt from the TA Team 6th Quarterly Report

The DTVET response is shown in the tracked change on the draft and this phrase did not appear in the final report. The TA Team believed that collectively DTVET were committed to the introduction of distance learning but there was a lack of behaviour or action as evidence of that commitment. Individually, this may not have been the case: the Principal Technical Education Officer for Entrepreneurship showed no signs of supporting the development of distance learning in his subject. He was not openly

hostile to the idea, but displayed his lack of commitment through inaction and lack of support. He cited inappropriate timing.

“It is not a good idea to introduce it [distance learning] now because BTEP needs to be allowed to develop and become established – then it would be easier to introduce distance learning as a complementary measure. Distance learning could then draw on the expertise already acquired from delivering BTEP. Now it is too early.”

Principal Technical Education Entrepreneurship, August 2007

Even DTVET officers themselves stated that there is a lack of understanding about distance and flexible learning amongst themselves and their colleagues:

“Officers need to understand distance education so that they can advise and assist – at the moment there is not really anyone in DTVET who understands distance education enough to be able to provide support. There must be skills transfer to DTVET officers from the TAs – so that they can be confident about this method of teaching. Top management are not experts in distance education and elearning – that’s very clear. They need to be work shopped – but the problem is that there is so much going on at the moment with Ministry re-structuring and taking over the Brigades that distance education is not high priority. That’s the tragedy.”

Principal Technical Education Officer Key Skills, May 2008

“There will be problems if someone from management doesn’t take care of it [DFL] and allocate resources and include it [DFL] in our strategic planning. This has not happened with distance learning so far here. It’s on paper but DTVET management are not really committed. If they were we would be able to see resources being allocated and time frames being established.”

To mitigate these issues, the TA Team proposed a workshop for the Principal Technical Education Officers of the Programme Development Division. The purpose of this workshop was to discuss with key officers of DTVET to understand the management and pedagogic issues involved in introducing distance and elearning into the VET system. The aim was to make a plan to resolve the issues which might prevent the successful implementation of distance and elearning delivery at FCTVE taking into account the views and understanding of the DTVET officers. The implementation of distance and elearning raises management and policy issues which are not addressed when delivering conventional education. It was important that senior officers at DTVET should be fully apprised of these issues and that these are considered during strategic, annual and budget planning activities. Action plans were needed for ensuring DTVET put appropriate mechanisms in place to support the strategic objective of introducing distance and elearning. Thirteen members of DTVET staff were scheduled to participate but unfortunately neither the Director, nor Deputy Director attended and attendance over the one and half days of the workshop was very sporadic with many participants leaving sessions to attend to other issues.

The FCTVE Principal was requested to participate in delivering sessions with the TA Team but he delegated the task to the Deputy Principal Curriculum. In discussion with the Deputy Principal following the workshop, he expressed his frustration that senior DTVET officials did not attend. He said it was indicative of their lack of interest in distance and flexible learning at FCTVE and meant that they missed an opportunity to learn more in order to support this work.

The Researcher received several strong statements from a variety of actors that part of the problem was the lack of understanding of DTVET officers about DFL.

“I haven’t seen anything much to show that they [DTVET officers] are committed to it. Maybe they should attend our workshops and get

training and learn more about it. They never come here or encourage or show any interest.”

Hairdressing and Beauty Therapy Lecturer December 2007

“I have doubts about DTVET’s conviction and commitment to the implementation of distance and flexible learning. There is no evidence of them putting up structures to make sure it is realised. There is no unit or even an officer in DTVET for distance and flexible learning, so where is the co-ordination going to come from?”

FCTVE Principal, May 2008

Similar studies in other countries have indicated the importance of senior management buy-in and action. Luckin et al note “...to bring about changes that will impact on the availability of elearning resources, both human and technical, key individuals who control financial and administrative priorities need to believe in the enterprise” (Luckin et al 2006:330).

Systemic blockages and lack of understanding of distance and flexible learning within DTVET

As part of the quality assurance system in BTEP, new colleges (centres) have to gain registration with both BOTA (Botswana Training Authority) and QAA (the Quality Assurance and Assessment unit in the Ministry). Once this Centre Approval is obtained, each Department is required to apply for Programme Approval to offer their programmes at each different level. Programme approval is dependent on having a minimum number of qualified staff, appropriate training facilities and adequate training resources. DTVET had appointed only one lecturer to the Hairdressing and Beauty Therapy Department at FCTVE which meant that it would not be possible to gain Programme Approval as the minimum number of staff required is three. Therefore no students could be admitted to FCTVE in this department until more staff were available.

BTEP programmes are made up of Units with a clearly defined Unit Specification. The Principal Technical Education Officer and the only Beauty Therapy lecturer assigned to FCTVE worked with the TA Team to develop a single mandatory unit of the Certificate programme in Beauty Therapy to be offered by distance learning. They then applied to QAA for Unit Approval as they could not apply for full Programme Approval. This would enable 40 students to start studying a mandatory unit in the Beauty Therapy Certificate programme by distance learning.

The officers at QAA initially rejected the request for Unit approval for Hairdressing and Beauty Therapy, as they said it was against regulations and approval could only be given for full programmes. But the Principal Technical Education Officer had checked the regulations and when it was established that there was provision for single unit approval, the Head of QAA agreed to the unit being offered by distance learning. Although there was a positive outcome this process delayed the team for some time and meant that the distance education students were delayed from starting their course. They eventually started in March 2008 and were the first students to be registered at the college. The need for re-interpretation of BTEP guidelines was recognised by the Hairdressing and Beauty Therapy Principal Technical Education Officer:

“Certain documents for programme approval may need to be made more relevant to flexible learning so there are no barriers to gaining approval. This could be a challenge for management.”

Principal Technical Education Officer Hairdressing and Beauty Therapy, July 2007

The Head of QAA commented:

“Training is very important. We should have a [distance education] training team like we do for BTEP Phase Training and they go round all the colleges. It is important that everyone is trained so that no-one is left behind. Then we will need a support system for everyone who is working on distance and elearning. And for it to be successful then

people who try these new things should be appreciated. It is important that there is recognition when there is innovation and new ways of doing things.”

Head Quality Assurance and Assessment February 2008

When discussing the challenges of introducing distance and elearning the Head of Quality Assurance and Assessment said:

“I think there should be a DTVET officer responsible for that. It would be their responsibility to see that distance education is introduced effectively. If we leave it to the colleges then people at DTVET will get left behind and there will be no coordination between the colleges. In DTVET, that person would support their colleagues and make sure that distance education and elearning are properly understood and effective. It needs someone to oversee the programme – that it is run effectively.”

Head Quality Assurance and Assessment, February 2008

For BTEP programmes at Advanced Certificate and Diploma levels, college registration must be obtained from the Tertiary Education Council (TEC). In an interview the Executive Secretary of the Tertiary Education Council shared his views on distance and elearning.

“We will need to approach this at the policy level but at the moment we are still working at the structural level of change. Strategic issues like distance education and elearning have been pushed to the background for now. I must confess that the recent Tertiary Education policy was completely preoccupied with issues of quality, access and relevance and it did not address different delivery systems. But the prospects for flexible learning are huge. The learners are ahead of us – they all have cell phones, they use their computers and the internet, they know all the latest things. They want distance and elearning.”

Executive Secretary, Tertiary Education Council, September 2008

This again demonstrates the need for systemic changes to occur at the same time (or even before) institutional change. This brings the external policy and strategy environment component into play which is why it was added to the MIT 90s model by the Researcher.

5.6.9 Development of FCTVE Strategic Plan

Strategy is another integrated component of the MIT9s model and Scott Morton emphasises that successful change, particularly in technology transformation, is predicated on an alignment of the corporate strategy and organizational dimensions (Scott Morton 1991:20). At the request of the Principal, the development of the FCTVE strategic plan was led by the TA Team Coordinator and took place over a 4 day workshop. It was observed by members of the TA Team that if they had not proposed distance and elearning for the strategic plan then it is likely that these approaches would not have been included by the college managers and lecturers involved in the planning process. This was discussed with the Principal and he confirmed it to be the case, citing the focus on operationalising of the college as the primary focus of both management and staff. An analysis of the College Strategic Plan for 2007 – 2009 reveals four objectives which directly relate to new technologies and delivery modes. The Final Report of the TA Team notes:

“TA participation in the FCTVE strategic planning process in August 2007 ensured that the Strategic Plan document contained objectives to support the introduction of ODeL [open, distance and elearning] approaches. The following objectives from the FCTVE strategic plan relate specifically to flexible delivery:

- *P1. Ensure excellence in delivery of a competitive curriculum*
 - *intensify training of lecturers in appropriate technologies and instructional methods*
- *C3. Increase access to TVET*
 - *introduce flexible learning delivery modes*

- C4. Increase equity in the provision of TVET
 - promote learner participation through flexible learning modes
- F3. Improve cost effectiveness
 - implement flexible learning modes”

TA Team Project Final Report, December 2008:2

This is linked to the original vision and mission workshops held the previous year. If the TA Team had not pushed for flexible approaches to be included, it is likely that they would not have appeared in the vision and mission statements. However, in the long run, whether these statements were there or not did not make any difference as they were not enacted by the management and staff of the college. Again, we see the implication of Senge’s ‘imposed vision’ or Fullan’s ‘borrowed vision’. It was observed that the strategic planning process was not particularly robust. Perhaps this is an illustration of the futility of imposed vision. In a conversation about the degree of staff buy-in to the college strategic plan, the Principal had this to say:

“To be honest, staff are just going through the motions. We are forced to do it [create a college strategic plan] but once it’s done then it’s out of our hands. There is no reflection of the strategic plans in our daily activities. If the college was allowed to develop a strategic plan to reflect how the college is going to move forward then maybe it could be very important and prominent. But the college has to adapt what DTVET is giving them and you have to accept it even if it is not appropriate. DTVET – or the Ministry of Education – are the funders so they call the tune and you have to dance or you are out.”

FCTVE Principal, September 2008

The Principal was commenting on the process of strategic planning required by the Balanced Scorecard method (Kaplan & Norton 1996) of strategic planning whereby each technical college takes the DTVET Strategic Plan and replicates it in their own college. The Key Result Areas, Goals and Strategic Objectives are exactly the same as

those found in the DTVET Strategic Plan. There is some logic in this as it is through the technical colleges that DTVET achieves its strategic objectives. However, it removes any sense of ownership for the plan on the part of the individual college management teams and their staff. As the Principal says “*The college strategic planning process is cosmetic.*” In their paper on the links between neoliberalism and globalization Olsen & Peters (2005) assert that in higher education institutions, there is an increasing emphasis on measuring outputs which include strategic planning and the measurement of results against performance indicators. This emerging global trend can be seen in the government TVET system in Botswana although it appears yet to be fully functional.

5.7 CRITICAL EVENTS AND CONCEPTS EMERGING JANUARY – JUNE 2008

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2006												
2007												
2008												

During this period, the critical event was again something which did not happen – the college did not open. The opening date expected by DTVET was January 2008 but full-time programmes did not commence until June 2008. There were no full-time students for 14 months after the staff moved into the college buildings. However, the first students to join the college were part-time distance learners studying Beauty Therapy who started in March 2008. At the time, this department was the only one to have any plans to introduce distance learning. ELearning materials were being developed in Hospitality and ICT but these were planned for more flexible approaches for campus-based students. There were 4 emerging issues in this phase which contribute to this study of the change process:

- 1 Establishing an organisational structure and strategy for change
- 2 Integrating flexible learning into college systems
- 3 Collaboration with other distance teaching organisations
- 4 Timing of the reform

5.7.1 Establishing an organisational structure and strategy for change

Referring again to the MIT 90s model, the TA Team considered the possibility of new organisational structures to support the change process. Concerned about the lack of progress with introducing distance and flexible approaches, the TA Team approached the FCTVE management and after discussion proposed the establishment of a Flexible Learning Working Group comprising all Heads of Department, senior administrators such as the Librarian and Bursar and some of the early adopters from amongst the lecturers.

The suggestion to establish the Flexible Learning Strategy Working Group was accepted by the Principal who delegated chairmanship of the group to the Deputy Principal for Curriculum. However, the Deputy Principal managed to attend very few meetings and requested the TAs to chair the sessions. The Principal did attend the first meeting and gave his full support to the planned outcomes of the group.

The TAs guided the discussion in the group and tried to promote ownership of the change process amongst the Heads of Department. The group analysed the FCTVE Annual Performance Plan and identified which strategic objectives could be supported or achieved through distance and flexible learning. A phased strategy was developed as seen in Figure 5.8 and it was agreed that each Department would develop a realistic plan for how flexible learning would be piloted.

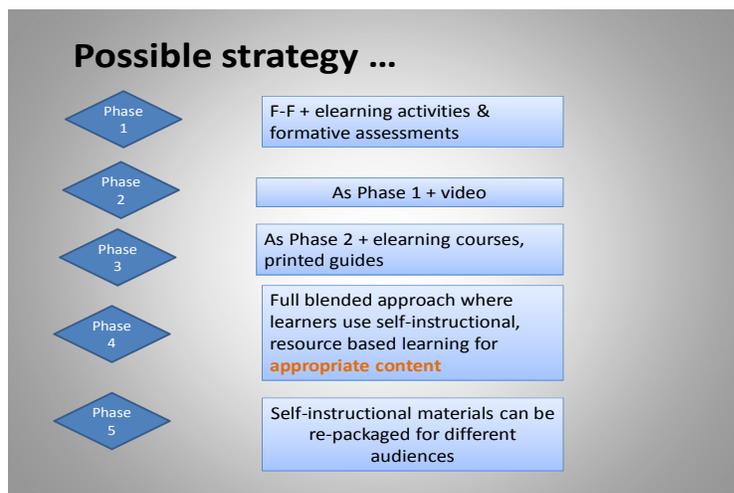


Figure 5.6: PowerPoint summary of FLSWG strategy, January 2008

The Heads of Department were particularly vocal during the meetings about their views on staffing and resources for flexible learning:

“The management of FCTVE and officers at DTVET are not serious about the implementation of distance and elearning because they are not putting any structure or resources in place. Staff are being expected to take very new approaches to delivering BTEP but without the support of management.”

Head of Department ICT Field Notes January 2008

It was interesting that the Head of Department did not count himself and the other HoDs in the group as ‘management’. This is possibly because he felt HoDs have no control or input into human and physical resourcing in the college.

“Two, looking at the manpower part – of course staff need to be trained but we also need to have enough staff to make it succeed. With the current staff numbers it is too much to ask them to be running the college and to do DE and elearning as well. HR management will have an impact on how successful it can be.”

Head of Department Business, January 2008

The Head of Department ICT was particularly concerned about the lack of technical support for the enhanced computer networking infrastructure at the college.

“I am very worried about IT Support – we will definitely need an IT Manager if the TAs cannot remain with us. IT support is going to get harder as the equipment ages – right now everything is brand new and it all works quite well. But as time goes by more and more things will need attention with the PC labs and the network and we don’t have anyone with that level of expertise.”

Head of Department ICT September 2008

5.7.2 Integrating flexible learning into college systems

The Working Group proposed that once activities associated with flexible learning are enshrined in personal objectives and linked to performance rewards, it creates an incentive to ensure the objectives are fulfilled to contribute to professional advancement. It was explained earlier (see Emerging issue on Bureaucracy (9) that the Government of Botswana has a highly defined performance management system, based on the Balanced Scorecard method of strategic planning (Kaplan & Norton 1996). This system provides for individuals to achieve specific rewards for excellent performance over and above their salary. The importance of staff development in creating the skills to integrate ICT into teaching was stressed by several Heads of Department. The Action Plan for Staff Development was created by the group and included activities with an action that all staff would create Personal Development Plans (PDPs) for 2008. Unfortunately the level of comfort with this tool – which is part of the Performance Based Reward System was overestimated. Most staff did not develop a PDP until after the Performance Contracting officer from DTVET came to train them some months later.

After the staff PDPs had been completed, the TAs asked to see copies but the Principal and some of the staff were not comfortable with that so we were not given access. Various staff and managers were asked if they had included flexible learning in their PDP and only the lecturer from Hairdressing and Beauty Therapy who was offering distance learning had done so. During interviews teachers were asked about PDPs. Most lecturers did not include new flexible teaching approaches:

“There’s nothing in my PDP about flexible learning. Were we supposed to put it there?”

Clothing Design and Textiles Lecturer, May 2008

“Our HoD is not interested in flexible learning so it never occurred to us that we should discuss it at Department meetings. I never put anything about it [flexible learning] in my PDP.”

The only exception to this is the few early adopters who have started introducing distance and elearning into their teaching.

“Flexible learning is in my PDP – I’ve put in an activity to run surveys on how to improve BTEP facilitation through technology.”

Multimedia Lecturer, November 2008

The HBT lecturer who is developing distance learning came to one of the TAs and asked for assistance with her PDP to make distance learning one of her objectives.

“I’ve put distance learning into my PDP because I am doing it. It is motivating me to want to do further studies – especially in distance learning – I want to know a lot more about it.”

Hairdressing and Beauty Therapy Lecturer, October 2008

Similarly the Principal Technical Education Officer for Hairdressing and Beauty Therapy notes:

“I have put it in my own PDP but I feel I need not to be seen spending a lot of time/attention on DE. When we have team meetings and I need money to hold workshops etcetera – that is a challenge!”

Principal Technical Education Officer Hairdressing and Beauty Therapy, July 2007

Again this indicates that there was a perception in the DTVET office that distance education is not ‘core business’ and that resources for DE development are not easily available.

But some staff certainly recognised the potential for bringing about change if the PDP was used effectively. When asked -What mechanisms are there in the college to help introduce flexible learning?

“The PBRs system could be helpful – it is a way for staff to get motivated and rewarded for achieving new things. The PDP could be used to get teachers started on flexible learning. The PDP is a good tool but it is not being used effectively. We only think about our PDPs when it is time for an appraisal. No-one works on the activities stated in their PDP. The monitoring is not very sound and they keep changing the forms so no-one really understands them anymore.”

Clothing Design and Textiles Lecturer, December 2008

At the end of the fieldwork, the Deputy Principal talked about the lost potential of including flexible learning in staff PDPs:

“We may have missed out on including flexible learning in PDPs in 2008 but it is not too late. In 2009 we need to encourage more staff to make flexible learning a strategic objective. But we cannot dictate – staff have to choose 6 objectives from the DTVET Annual Performance Plan and managers check there is a balance... there is so much for them to choose from.”

Deputy Principal, January 2009

SWOT Analysis

A SWOT analysis has been identified as a useful tool in the change management process for technology adoption. (Strong 2007). During one of the Flexible Learning Strategy Working Group meetings, the members carried out a flexible learning SWOT analysis and allocated responsibility amongst the members for addressing the internal weaknesses. Many of these weaknesses were identified a year previously as challenges during the workshops on flexible learning for the college management – see Issue 11 in the previous phase. However, in the intervening period, little had been done to address these specific challenges relating to flexible learning.

	Challenges	Responsibility
1.	Staff don't have agreed APPs and PDPs	HoDs/DP: Curriculum
2.	Staff lack training in the management of change	Staff Dev Team/HoDs
3.	Lack of TA counterparts (change agents)	Principal
4.	New staff need training in ICT skills/BTEP Phases	Staff Dev Team/BTEP Training Team
5.	Staff induction procedure not implemented	HoDs/DP: Curriculum
6.	Consumables not yet specified and ordered	HoDs
7.	Learning materials for a flexible approach not in place	Staff
8.	BTEP is flexibly designed but not flexibly implemented	HoDs
9.	Inflexible admission practice (Admissions Committee)	HoD EME
10.	Learner support system needs developing for flexible delivery	Staff Dev Team
11.	Slow pace of administrative procedures	FLSWG
12.	Internal communication needs to be strengthened (intranet)	HoD CDT
13.	Management and staff are inexperienced in flexible delivery	FLSWG
14.	Lack of programme approval for all learning areas	HoDs

Figure 5.7: List of challenges identified during a management workshop

Many of these issues would still be challenges even if there was no proposal to introduce distance and flexible learning. They are challenges of operationalising a new college – c.f. 1, 4, 5, 6, 8, 14.

This list is significant because it evidences that the Heads of Department and early adopters of flexible approaches had a good understanding of what was lacking in the college system to bring about the required change. The identification of lack of TA counterparts and the use of the term change agents was interesting (Point 3). Again, responsibility was delegated upwards as the FLSWG members allocated this action to the FCTVE Principal. The Researcher asked if the FLSWG team were not, in fact, the college champions or change agents for flexible learning and they shifted uneasily in their seats and said this is for the Principal to decide. They were looking for instruction from above and not wanting to take on responsibility or act on their own initiative.

The recognition that BTEP is flexibly designed but not flexibly implemented (Point 8) with a responsibility on all the Heads of Department to address this – was notable because most HoDs had already identified this point but spoken of it in such a way to suggest that there is nothing they can do about it.

The comments made in Flexible Learning Strategy Working Group meetings by Heads of Department seemed to indicate that whilst undertaking their management role in so far as to administer the department they felt they did not have any control over the way their staff delivered the programme. So they would attend Management meetings and pass on directives from the top, ensure procedures were followed but the Staff Development policy was mainly left to other people.

The TA Team and the members were in agreement about the challenges facing the organisation in relation to the change process. There was need to strengthen internal communication about the Flexible Learning Strategy Working Group and the new teaching approaches; very few teachers had developed flexible learning materials to be used on campus and there was only one distance learning unit available to students; college systems such as admissions needed to be reconsidered in the light of flexible delivery. One illustration of this was when the distance learning students for Hairdressing and Beauty Therapy came for their orientation at the start of the programme. Forty students came to the college on a Saturday for their orientation, to

pay their fees and collect their printed learning materials. Several meetings had been held with relevant staff before the orientation to go through the procedure and ensure everyone knew what their role was. Arrangements had been made with the Bursar to attend the orientation session as she is the only person authorised to collect funds on behalf of Government Treasury, at the college. She agreed to be in the Main Hall at the appointed time but did not arrive. Someone went to look for her and found her sitting in her office. She eventually came, having delayed the whole proceeding by about 90 minutes. After the orientation was completed we discussed the hold up with her and asked what had prevented her from arriving on time. She said that usually during student registration, the students come one-by-one to her office and she receives the fees and writes out a receipt for each one. She said the procedure was for the students to come to her office not for her to receive fees in the main hall. This process could have been followed if it had been explained during the planning phase. Unfortunately there was a communication gap.

The Bursar was simply trying to maintain the status quo in terms of her working practice. She was not openly hostile to the new methods, indeed, she gave the appearance of going along with them, but when she was asked to work differently, she simply did not do it. Most of the resistance to change encountered at FCTVE was passive. Participants could articulate the advantages of flexible delivery and they attended staff development workshops but then they did little to change their working practice. There is a human tendency to resist change according to Lunenburg and the reasons for this include fear, uncertainty, concern over personal loss, dependence, lack of trust in administration and awareness of weakness in the proposed change (Lunenburg 2010:4). Relating to the resistance at FCTVE, the Head of Department ICT commented on the lack of technical knowledge of some of the teachers:

“One challenge the staff are facing is that not all of them are technically sound, and they are not all qualified educationalists so they need support in these areas. It is difficult enough for them to teach in the

traditional way without having to extend themselves to these new methods.”

Head of Department ICT, September 2008

Overt Resistance

At FCTVE there was one Head of Department who steadfastly refused to attend the Flexible Learning Strategy Working Group meetings. The Head of Department Engineering – insisted on both public and private occasions that engineering is a practical subject which can only be delivered face-to-face. Not surprisingly, this view was reiterated by the lecturers in his department. He did not attend any staff development workshops to learn about more flexible approaches or use of elearning – even though Engineering is a subject which is known to benefit from the use of simulations and other technology supported activities. One of the TAs who has an engineering background, and is now an elearning specialist, spent time discussing the potential benefits of elearning in Engineering with the Head of Department, but to no avail. Engineering staff had no intention of introducing new methods although they attended the training workshops. The Researcher learned that the Head of Department was involved in a Master’s degree programme by distance learning and he requested some resources on distance learning for an assignment he was preparing for his Masters. In conversation he reported that he had too much to do with preparing the Engineering Department equipment and workshops, writing learning materials for the new Advanced Certificate programme and gaining programme approval for the face-to-face students. When talking to lecturers in the Engineering Department about input on flexible learning from management, one said:

“There has not been much input. If they [managers] had done more then lecturers would have produced flexible units... but it needs to be initiated from management.”

Electrical and Mechanical Engineering Lecturer, December 2008

Luckin *et al* identified that a major obstacle to introducing elearning in their higher education institution in the UK was “*disinterest bordering on hostility from some of the senior management team*” (Luckin *et al* 2006). They attributed this to a problem caused by a divergent assessment of the need for change and low tolerance for change. Their response was to have their change agents operate in ‘stealth mode’ until sufficient managerial support could be generated and a senior management champion appointed. At FCTVE we found an almost opposite case where senior management were openly supportive of the innovation but did nothing to demonstrate that support or manage the change process themselves. In our case, the change agents could not act in ‘stealth mode’ as they had an overt, publicly-known role and mandate. It was a complex situation.

Heads of Department, when asked about the challenges faced by staff, were expecting resistance:

“There will be teething problems – especially for technical and vocational training – we haven’t heard of any programme like this in VET before. There will be a lack of confidence ... people have to learn about the new technologies. That will be a change and change brings stress for people. Some people look forward to it – others condemn it. It will depend on how the change is managed.”

Head of Department Key Skills, June 2007

“Resistance to change and the problems cause by lack of staff in the departments. The first challenge will be for them to fully understand what flexible learning and elearning are all about. If they fully understand then it will be easier for them to implement the new ways of doing things. We can’t leave it to the individual to interpret; we have to make sure that all staff participate in the training activities.”

Head of Department Business, January 2008

Passive Resistance

Lewin's force field analysis theory, states that trying to bring about change by adding a driving force towards it often produces an immediate counterforce to maintain equilibrium (Lewin 1951). And so it was at FCTVE. The majority of lecturers – instead of becoming the late majority of Roger's diffusion of innovation theory, simply ignored the practice of new teaching approaches. Most attended some training workshops, participated wholeheartedly in discussions on how to introduce flexibility into teaching and learning at FCTVE and could describe the benefits of flexible approaches. But their behaviour did not change. The counterforce in this case was the argument that they had too much to do to get the college ready for opening with the new advanced programmes and did not have time to put new teaching approaches into practice.

To explore this further, the Researcher identified non-adopters and found opportunities to probe to try to find out why they didn't change their teaching practices. Responses were varied:

"If we had been told to do elearning then we would have done it. I know distance training and elearning is a way to increase access but I won't try it until I am comfortable... with the IT, I mean."

Hospitality and Tourism Lecturer, November 2008

"We haven't done elearning because we are a new college. We have BTEP and the focus was to see BTEP take off first ... and we have a lot of new staff members who have to be trained in that. Maybe we'll do elearning in the future. I've used unit planning [subject of one of the workshops] in one unit on Tour Guiding."

Hospitality and Tourism Lecturer, November 2008

"I haven't done any elearning ... I didn't know you wanted me to."

Clothing Design and Textiles Lecturer, November 2008

The response of this teacher raises two questions to the participant observer. The first is that implicitly she attributes the drive for elearning to the TAs; the second is, notwithstanding that the drivers of the change were in fact government and not the TAs, the TAs as agents of the change failed to communicate effectively with all the teachers. This indicates communications breakdowns in the change process.

“Some people are just not interested. Their minds are so much set in face-to-face that they think it is the best and the only way to teach. They are reluctant to try something new. Is it laziness? I don’t know ... maybe they are afraid that they will not manage, that they might look foolish.”

Hairdressing and Beauty Therapy Lecturer, October 2007

Here we can identify very real concerns of teachers about their comfort levels with the new technologies. Even though staff training opportunities were well utilised, there were not enough TAs to work closely with each staff member and coach them in the new approaches. So it is not really surprising that there was not more widespread take-up of the new approaches. The issue of mindset, or teachers’ ‘mental models’ came up regularly. Rogers reminds us that *“adoption of an innovation often requires the prior adoption of a new value system which is a relatively slow process”* Rogers (2005:15). Many teachers talked about the lack of time as they were fully engaged with researching new content and preparing for higher level BTEP units. Lack of time is often cited by teaching staff in higher education as a barrier to change, however, in the context of FCTVE, many of the teachers had 12 – 18 months working at the college before any students were admitted so it seems likely that they could have developed more flexible teaching approaches if they had wanted to. This points to other systemic barriers to change.

5.7.3 Collaboration with other distance teaching organisations

The National Development Plan 9 states that DTVET should “...increase training opportunities for out-of-school youth and people in employment through the

development of distance education and e-learning packages in partnership with BOCODOL as well as through the construction of learning resource centres.” In the Terms of Reference for the Researcher as Distance Education Expert in the Technical Assistance project, it states explicitly:

“The expert will ensure that innovative distance learning materials are produced and managed to deliver selected CTVE programmes in cooperation with Botswana College of Open and Distance Learning (BOCODOL).”

DE Expert Terms of Reference, May 2006

So cooperation with BOCODOL was enshrined in the TA Project. It is not clear if this was discussed with BOCODOL beforehand. We have already seen how managers, teachers and Ministry officials all mentioned that they thought distance learning is the realm of the Botswana College of Open and Distance Learning (BOCODOL).

“BOCODOL is for distance learning – I’m not sure that it is for DTVET – we don’t have a strong relationship with them. If we had done research, we could say ‘these are the needs for distance learning and this is what we must do’. But this decision to do distance learning and elearning was taken without any research. Maybe we should negotiate for BOCODOL to take over the distance learning part. Distance education adds value to what DTVET is trying to do the problem is there is very little knowledge about distance learning in DTVET.”

Head Quality Assurance and Assessment, February 2008

Linked to their acknowledgement that there is a lack of expertise on distance learning in DTVET, DTVET officers mentioned the need to work collaboratively with the Botswana College of Open and Distance Learning (BOCODOL).

“There is a question regarding the relationship between DTVET and BOCODOL. We need to establish a dialogue with them so as not to be in competition with them to work collaboratively.”

Principal Technical Education Officer Hairdressing and Beauty Therapy, July 2007

“No-one knows about DE in DTVET – that’s why we need BOCODOL – we need to take advantage of their expertise.”

Principal Technical Education Officer Hospitality, August 2007

It was difficult to convey the notion that DE is a teaching approach which can be employed by any institution in any educational sector. Through a series of meetings with the Principal and DTVET staff, including the Director, it was agreed to approach BOCODOL to establish a partnership to develop Key Skills subjects for distance delivery. The DTVET staff members were reticent as this had been attempted back in 2003 and 2004, in an effort to enact the national policy, but it had come to nothing. A DTVET officer gave the history:

“With BOCODOL the plan was for DTVET to deliver DE BTEP jointly with BOCODOL. There were 3 phases – phase 1 was discussion and research – not having any progress during this stage, all further work came to a halt. Then in phase 2, BOCODOL would develop the printed learning materials and the 3^d phase was to develop elearning materials”.

Principal Technical Education Officer Hospitality August 2007

When approached by the Researcher the BOCODOL CEO and his staff were cautious but willing to consider collaboration with DTVET again in the light of the national policy statements. The FCTVE Principal was stronger in his views about how DTVET should work with BOCODOL:

“There should have been a partnership with BOCODOL to start with because in Botswana, they are leading in that field. DTVET need to ‘court’ BOCODOL. It is in all the policy documents that we will work with them but it is not in the strategy documents.”

FCTVE Principal, May 2008

A Steering Committee comprising BOCODOL Officers and Key Skills staff from FCTVE and the Researcher was established and produced a proposal in August 2008 for collaboration on Key Skills BTEP courses. A planning workshop was held in October 2008 and a programme blueprint produced. According to the blueprint, FCTVE writers were to be appointed to develop the learning materials and BOCODOL would train them in writing for distance education. By this time there was just two months left of the TA project and as far as it is known, despite having brought them together and put all the plans in place, no writers were appointed and the collaboration stalled once again. The FCTVE group involved could rationalize the need for distance learning, had some of the skills to develop the programme and had access to expert assistance, but they did not progress the distance learning programme. Participants reported that they were waiting for college management to follow up with BOCODOL and they wanted to know about the budget to develop the materials. This project did not proceed then because of lack of leadership from college managers and a concern for resource allocation from DTVET.

5.7.4 Timing of the reform

It is clear that the management and staff of the college faced many challenges in introducing flexible learning at the same time they were trying to open the new college. Analysis of the TA Team Final Report document reveals this note:

“The Principal admits that the college staff and management were, at times, severely overloaded. They were in a position where they were required to implement several reforms at the same time:

- *operationalising a new college – setting up all departmental structures*

- *installing and commissioning new equipment and staff training*
- *centre and programme approval activities*
- *developing advanced programmes with PTEOs*
- *developing new learning materials for advanced programmes and planning delivery*
- *content upgrading to meet the demands of advanced programmes*
- *changes brought about by new cost-sharing and funding procedures in BTEP (Grant/Loan Scheme)”*

TA Team Final Report : 18

The task of preparing the new college to open and developing the new higher level BTEP courses was often cited as a reason for not taking on distance and elearning:

“We haven’t done elearning because we are a new college. We have BTEP and the focus was to see BTEP take off first ... and we have a lot of new staff members who have to be trained in that. Maybe we’ll do elearning in the future.”

Hospitality and Tourism Lecturer, November 2008

“There is too much going on for the HoDs so not much attention is being paid to flexible learning. People are too occupied with having to start new full-time programmes. When we become a budget-holding parastatal, flexible learning will come back – when funding comes with the students. ”

Business Studies Lecturer, November 2008

It was clear to the TA Team that the staff and managers were facing some serious challenges both in terms of their time but also their level of comfort with their own content knowledge for the higher level programmes. This was epitomised just after one of the Flexible Learning Strategy Working Group meetings when the Head of Department ICT came to the Researcher and said:

“I am ready now – I understand how flexible learning can work. We have to do this to be able to increase access. I have all the learning materials ready, I want to offer the whole programme to part-time students off campus. Before I was too busy getting to grips with the BTEP curriculum but now that is done I can pay attention to flexible learning and especially elearning.”

Head of Department ICT and Multimedia, April 2008

This is evidence of the importance of timing with a systemic change such as the introduction of flexible learning upon a group of newly appointed staff and managers in a new college and the difficulties for them of prioritising their work. By this stage, the TA Team were already working with some staff in this department who had included the use of Moodle in their campus-based programmes. The Head of Department had in mind to convert a full Advanced Certificate programme in ICT for distance delivery through elearning. The TAs did not have the capacity to support this development in the remaining time of the project. The story of the Head of Department ICT (who was new to Botswana, and to BTEP and had no teaching qualifications) not wanting to get involved in flexible learning until he had prepared his face-to-face curriculum is indicative that even if people recognise the value of new innovation they will not change if it is not the right time for them. The Head of Department ICT became proactive about flexible learning in his department where previously he had not wanted to get involved. Upon joining FCTVE he needed time to learn about BTEP and to set up his department. Only then could he concentrate on the value of flexible approaches and how his department could benefit. Lecturers also commented on the timing of the introduction of distance and elearning:

“You need to introduce flexible learning at the right time. It’s not the right time here for elearning. Some departments are still only running level 2 because the staff have no ICT skills.”

Tourism Lecturer, November 2008

Other lecturers talked about their heavy workload in developing learning materials for the higher levels of BTEP and also in preparing the equipment and workspaces for practical training. For the TAs this was an issue of prioritisation. If the staff had prioritised the development of the learning materials when they had experts to assist them, they would have saved on contact time later on. It was clear that the priority for most of the managers and staff was to open the college for small groups of full-time, face-to-face students and this was driven by their belief that this was what was expected of them by their line managers in DTVET.

5.8 CRITICAL EVENTS AND CONCEPTS EMERGING JULY – DECEMBER 2008

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2006												
2007												
2008												

The final six months of the TA project were dedicated to working with lecturers developing distance and elearning course materials and extensive project reporting. It was, essentially, a period of exit strategy for the TA Team. There were three emerging issues in this phase, relating to lack of progress with implementing flexible learning, the perceived lack of adequate staff to sustain flexible learning following the departure of the TA Team and evidence of the perception of top managers at FCTVE as being outside the change process.

5.8.1 Progress with implementing flexible learning

It became clear to the TA Team at this time that we had reached what Pfeffer and Sutton (1999) call the knowing-doing gap. This is a behavioural gap which people sometimes choose not to cross. They may have awareness and interest and confidence in their new skills but they do not have the motivation to try and adopt new working practice. Angehrn (2004) has shown how the gap links to the phases of adoption of change.

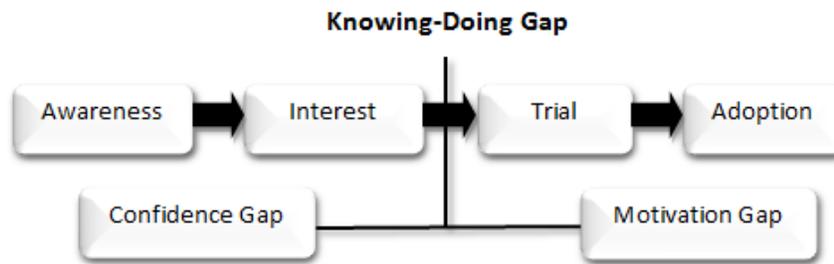


Figure 5.8: The knowing-doing gap (Angehrn 2004:3)

The FCTVE Principal alluded to this in conversation with the Researcher.

“Flexible learning is a challenge for HoDs – the new ones really don’t understand BTEP or flexible learning. Some don’t even have any experience of education and are struggling with the basic concepts of teaching.”

Teachers and managers had participated in staff development workshops and had gained new competencies. They had engaged with the issues of the new approaches and made plans to implement them. The middle managers had said they were taking responsibility for introducing the changes in their departments. They had gained confidence but they lacked motivation because there was nothing in the organisational culture which required them to make the change. This illustrates the knowing-doing gap. During this period, there was a schedule of meetings for the Flexible Learning Strategy Working Group. The Researcher went on leave for several weeks and the FLSWG sessions were supposed to continue but they did not. It was difficult to find anyone to give a good reason why the meetings had not been held and little progress against agreed activities made. A conversation with the Deputy Principal revealed this sentiment:

“Flexible learning can’t die now. It should be the Committee to overlook every endeavour – it needs to be resurrected... it is where discussions

are carried out and tactical decisions made. There is no way we can let it die.”

Deputy Principal, January 2009

By the time the TA project ended, the Flexible Learning Strategy Working Group was already comatose. According to reports from lecturers there was never another meeting after the TAs departure. When asked about his own role as the person delegated by the Principal to be the Distance and Flexible Learning Champion, he had this to say about the demise of the working group and his own role:

“Personally, I was supposed to be directing it [FLSWG] but I haven’t done a lot. I felt I could delegate some other people to drive it. We need more monitoring mechanisms to really commit people to doing flexible learning. Management issues have to be prioritised in order to achieve our strategic objectives. The problem is a lot came all at one go ... you know, Centre Approval and getting started with the programmes.”

Deputy Principal, January 2009

5.8.2 Human and physical resources for distance and elearning

The FCTVE Principal made clear his concern about adequate staff to sustain distance and elearning after the end of the TA project.

“We are mindful that whatever happens with flexible learning we are likely to run into trouble without a structure to sustain it and staff positions to devote to it. We don’t have that right now.”

FCTVE Principal, November 2008

Due to the recognition of managers that they did not have appropriate staff to sustain flexible approaches especially with a view to the end of the TA project, it was decided to hire additional TAs to establish roles in desktop publishing, graphic design, text editing

and video production and establish a support structure known as the Learning Management Unit or LMU. This was facilitated by additional European Union funding. After consultation with the Principal, TA Team Project Coordinator and Project Manager, the DTVET Director requested an extension of the TA project for a further year – but because of EU funding restrictions they could not agree to the extension in time. However funds were still available if they could be spent before December 2008 so EU agreed to contracting additional experts to provide support to the teachers for materials development.

The TA Team discussed with the Principal whether a group of existing staff could work with the TAs to take on the support role for flexible learning but he maintained there was no spare capacity. It was decided that the Principal would discuss the possibility of increasing the staff establishment for FCTVE with newly defined role positions with the DTVET Director. There was a need to provide for additional expertise in media, such as print layout, graphic design, language editing, web design and video production. DTVET could not provide the human resource needed to support distance and flexible learning activities at FCTVE so as a short term solution, EU provided additional funds to hire 5 local media specialists to assist with distance and flexible learning materials production. Everyone was aware that this was not a sustainable solution. Staffing was discussed in a meeting between the Acting Director DTVET, the TA Team and FCTVE senior managers and DTVET. Regarding staffing, the DTVET Director explained that in the 2008 – 2009 Manpower Planning Report, DTVET requested new posts but were not given any because there are too many vacancies. (700 in Brigades or Vocational Training Centres). This made it difficult for DTVET to give FCTVE the new posts we requested. Also, the posts requested do not currently exist on the establishment and it is a very long process to have new post categories added to the establishment. This was seen as a symbol of the inflexible nature of the government bureaucratic system and how the external environment can have a negative impact on the college plans for change. This explanation made it easier for the TA Team and FCTVE management to understand why DTVET was not able to provide the numbers and types of staff needed at the college.

Heads of Department were also aware of the resourcing needs and lack of provision from DTVET – although they may not have understood the broader context in which the DTVET officers were working in relation to provision of additional staff.

“The other challenge for DTVET officers is to provide technical support to FCTVE. When the TA Team leaves we will not have enough IT officers on the ground to support future development of elearning and distance learning. This will be a challenge for staff and college managers also.”

Head of Department, ICT and Multimedia, September 2008

The Principal and some of the Heads of Department started to voice their concern about the future of ICT and flexible learning after the TAs had left.

“When the TA Team leaves, Moodle is going to die because there is no-one to maintain it. Even the concept of distance education – although it is successful now – it will fall away. People will focus on their traditional jobs not distance and flexible learning.”

Head of Department ICT, September 2008

“Distance learning is in the DTVET strategic plan and I would like to see it being supported with provision of the necessary resources like human resource or whatever is necessary to see this through. The TA Team is here to assist but no-one is assigned as understudy to the TAs to make sure that when they are gone, this does not all collapse. We need a structure to say this is how distance and elearning is going to run and to make sure it continues.”

FCTVE Principal, June 2008

5.8.3 Staff turnover

Related to the lack of appropriate job positions in the college establishment there was also the issue of high turnover of staff at the college. This impacted negatively on the

introduction of new teaching approaches as staff who had received training left the college. If they were replaced (and this could take some months) the TAs had to start the training again with the new people. What was most frustrating for the TA Team was that many of the staff who left were transferred by DTVET to other technical colleges. Of the 35 staff who joined FCTVE in 2007, more than 30% had left by the time the fieldwork and TA project finished at the end of 2008. This issue was raised with DTVET management through TA Team reports but the distance and flexible learning trained lecturing staff base continued to be eroded. The TA Team Final Report noted:

“Since assuming responsibility for the college building, more than 30% of the staff have either resigned, gone on short and long-term study leave or been transferred to other colleges. In addition, DTVET continues to provide new lecturers and departments according to the HR plan for FCTVE which brings new lecturers almost every month. This has meant that staff capacity building has, in some cases, been disjointed as lecturers came and went. A good number of staff have been trained in the use of new teaching and learning technologies but have been moved to colleges which do not provide the enhanced technical facilities of FCTVE.”

TA Team Final Report December 2008:18

5.8.4 Perception of college managers within the change process

In the final days of the fieldwork, the Researcher spoke to the college senior management to ask their views on why the change had not happened in the working practice of the majority of staff and why flexible learning had failed to become institutionalised at FCTVE.

“I am satisfied to some extent but I expected people to have been working very closely with the experts. I expected the Departments to have picked some officers to have worked with the TAs... to be given a lighter load so they could ‘understudy’. I expected more frequent meetings of the staff and TAs looking at what needs to be done to come

up with the best modalities of DE. I wish we could have speeded up the process so people would take it up and continue.”

Deputy Principal 1, January 2009

“There has not been very much take up of flexible learning because it is more work for staff. Why?... because there was no specific instruction to do flexible learning. Maybe that is what is needed. Most of them, that’s how they operate. They wait to be told what to do. Here, status is associated with age and wisdom so people wait for the older and wiser people to tell them what to do.”

FCTVE Principal, November 2008

“We need a change of mindset to bring about change. We should have linked it to management of the whole college not as an isolated aspect. Management left everything entirely to the TAs so people didn’t attend meetings or trainings because they knew nothing would happen to them. The TAs have no authority. HoDs should have known from the beginning that it is their mandate from DTVET, from the top, not even from the Principal. HoDs should have been required to make monthly reports on DE and flexible learning. People from DTVET should have monitored the involvement of college staff.”

Deputy Principal 2, December 2008

Again, we see this ‘external’ concept of management which was noted in the comments of the Heads of Department in the Flexible Strategy Working Group meetings, that ‘management’ has nothing to do with them is echoed even from one of the second most senior managers in the institutional hierarchy. Quinn notes that managerial isolation, excessive bureaucracy and inappropriate incentives as common constraints on innovation in organisations (Quinn 1985). Senge has noted that the leader’s effectiveness is largely dependent on the accuracy of his/her mental map of the change environment (Senge 2006). In the case of the managers at FCTVE it appeared that the

map had been given to the Technical Advisers. It would appear that these managers were busy with other priorities which they considered to be more important which enabled them to 'absent themselves' from the change process which was complex and difficult and outside their experience.

It is clear that in the case of the change process to introduce flexible learning to FCTVE, the elements in the system were not aligned to bring about the desired organisational change. The goal was specified in the national policy and DTVET tried to achieve it through a strategy of contracting change agents to work with the college management. The senior management team at FCTVE did not take responsibility for the change process and deferred the responsibility to the TA Team but without ensuring there was both a top-down and bottom-up, or what Cummings *et al* (2005) call a 'middle-out' approach.

5.9 SUMMARY

In this chapter the findings of the fieldwork have been presented through the identification of 20 critical issues which emerged during this case study. Interwoven in this chapter are references to relevant literature which were investigated as the critical concepts emerged in the fieldwork. The MIT 90s change model formed the framework of the change strategy as it puts management processes at the centre of activities involving organisational structure and strategy, technological infrastructure and the skills and roles of individuals – all within the context of the culture of the organisation. Lewin's theory of force fields analysis and the three-step model of change was adapted to guide the implementation process.

The findings were presented in four phases as they arose during the process. In the first phase there were five critical events and emerging issues: a lack of communication with staff about the new mandate of the college gave the first indication that there may be challenges in implementation of the new mandate. The reluctance of staff to include the new mandate in planning and vision statements for the college strengthened this observation. It soon became clear that the opening of the new college for full-time

students was taking precedence over the implementation of new flexible approaches to programme delivery. This proved to be a recurring theme. The immediate concern for managers when faced with the concept of introducing distance and elearning was a concern for resource availability – both human and physical – to facilitate course development and delivery in new modes. The final critical issue started in this phase and continued throughout the field work – that an active and encouraging response from a Ministry official could make a big difference as to whether the new approaches were adopted or not.

In the second and longest phase, eight critical concepts emerged and were investigated. The first was a realization of the importance of participants' mental models and how these impacted on their willingness to change their working practice and also on their approach to change. There was a generally positive view of the position of the TAs acting in the role of experts and change agents. There was a general preference for bottom-up approaches to change coupled with a realism that in the context of FCTVE, in the government Education Ministry in Botswana, effective change needs to be driven from the top. The hierarchical, bureaucratic nature of government technical colleges was raised by several key participants and the national culture of both consultation but also top-down authority was highlighted as contributing to the forces which were restricting change.

The middle managers in the college – the Heads of Departments – were recognised as a key group of actors in the process and they identified a long list of barriers to change but with few suggestions as to how these barriers could be mitigated. A critical issue held up by both teachers and managers was the perceived lack of commitment of Ministry officials to the new mandate. This will be discussed thoroughly in the next chapter. During this phase, the collective activity of developing the strategic plan highlighted a nearly missed opportunity to create strategic objectives for the new mandate but also points to the bureaucratic structure of DTVET and the technical colleges and the tendency of college managers to abrogate responsibility for decision-making. Issues of imposed vision were clearly visible.

The third phase began at the beginning of the second year with the emergence of four critical issues. The TA Team and managers tried to establish an organisational structure to carry forward the change process by defining a strategy and implementing it. Part of the strategy proposed that flexible learning should be enshrined in personal objectives of individual staff members and linked to the government performance reward system as a way to integrate it into college systems – but the Heads of Department again deferred to senior management and failed to implement this strategy. The impact of reform as a driving force for change in notions of what teachers should do and how they will be measured is salient here. A SWOT analysis again identified the barriers to change a year after the first attempt – with very little variation.

A TA-led collaboration with the national college of open and distance learning to jointly develop a distance learning programme showed signs of progress – partly because it met participants' widely voiced view that BOCODOL should be responsible for all distance learning in the country. When the TAs relinquished leadership of the initiative, it died.

The last critical issue commented on during this period was the timing of the reform. From the very beginning this issue emerged and re-emerged throughout the fieldwork. College staff and managers were challenged by a multitude of demands upon them to operationalize the new college and prepare to offer higher level programmes than any of them had done before. Opening the new college was challenging to them but it was more comfortable than re-thinking their approach to teaching.

In the final six month period three critical issues were identified; the Principal said he did not have adequate staff capacity to achieve both the opening of the new college and the implementation of a substantial change in approach to teaching. The critical situation of the conceptual gap between having the knowledge, skills and confidence to act and the motivation to act was highlighted. Finally – and possibly the most critical issue was the evidence that the senior college managers saw themselves as outside the change

process. In the discussion in the final chapter it will be established that this is the most critical issue of them all.

Chapter Six is the final chapter of this dissertation and provides the discussion on these findings, draws some conclusions and makes recommendations based on the findings of this case study. In addition, suggestions are made for possible further research regarding the change process involved in the introduction of new technology-enhanced teaching and learning approaches in the government TVET system in Botswana.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

In this last chapter, a summary of the case study is presented which illustrates how the aims stated in Chapter One have been addressed. The 20 critical issues arising in the findings as outlined in Chapter Five are reviewed and discussed. This is followed by the conclusions that are drawn from the findings of the study which lead to the recommendations for how the Government of Botswana might proceed with progressing distance and elearning in technical and vocational colleges. Finally, the limitations of this study are noted and possible areas for further research are proposed.

In Chapter One, the research questions for this study were stated as:

1. What organisational structures and change processes are necessary for the successful implementation of distance and elearning in the context of the Botswana government VET system?
2. How are these structures and processes best managed in this context?

These questions are central to the purpose of the study which was to investigate factors which affect the process of institutionalising new teaching and learning methodologies in a new government technical college. The research studied the driving and resistive forces in play as the new teaching and learning approaches were introduced. Lewin's force field analysis and 3-step change theory provided a theoretical model by which to view the process. Organisational development and management issues were explored to identify the processes required to institutionalise the new teaching and learning technologies. The literature indicated that change processes, particularly in technology integration in tertiary education, are always complex and more often chaotic.

The model of technology integration used to guide the work was MIT 90s. The MIT 90s researchers described six major impacts on organisations caused by the integration of

technology that are considered relevant for the case study at FCTVE: technology impacts on the relationship between time and distance; training in the use of new technology tools is paramount and the boundaries between job categories and tasks will be increasingly blurred; new organisational structures become necessary and informal teams may become significant; new methods of planning and control will be required for the management of interdependence; innovation and improvement requires a new strategic vision and highly defined implementation skills; finally, an understanding of the organisational culture and know what it means to have an innovative culture is a critical first step (Scott Morton 1991). The MIT 90s model was useful for the people involved in the change process at FCTVE but the researcher modified the model to include an additional external element which has an important influence over the change process as an important driver in the education context – the policy environment.

In his Diffusion of Innovations theory, Rogers (2003) provides a cogent set of concepts by which to identify how and why diffusion occurs. These concepts include the different attributes on innovations and categories by which to identify the rate at which people adopt the innovation. Rogers implies that whilst there are differences in the rate of adoption by different individuals in the system the adoption of innovation is somewhat inevitable. The FCTVE case study did not support that idea and showed that powerful resistive forces worked to maintain equilibrium which did not involve changed working practice.

As discussed in the previous chapter, the 20 issues that emerged from the fieldwork and the observations, documents and interviews presented in the findings chapter tell a story of the implementation of a national policy objective which aimed to bring about change through a team of external change agents. It was erroneously believed that this change could happen at the same time as the operationalisation of a brand new college. The planning for the implementation of new teaching and learning methodologies did not take into account the disruptive nature of the change being proposed. This resulted in a range of barriers or resistive forces that were insurmountable. In addition, it would appear that the activities of the TAs overly focussed on the building of technical capacity

to use new teaching and learning technologies and insufficient attention was paid to affective concerns and consensus building that these changes were both desirable and possible. A reflection on what could be done differently by such a TA Team input points to the possibility of improved effectiveness of increased focus on the 'soft skills' of change processes and less on building technical competence. The recommendations presented later in this chapter suggest that external technical advisers may not be the most effective change agents in this context and suggests that people internal to the context might be more successful.

6.2 FACTORS AFFECTING IMPLEMENTATION OF NEW TEACHING AND LEARNING METHODOLOGIES

6.2.1 Input from policy officers

It was noted in the literature that it is possible to identify a set of factors which, depending on how they are managed, may drive or impede the change process. Emerging early in the study at FCTVE was teachers' and managers' belief that new teaching and learning methodologies were not well understood by their line ministry officers in DTVET. The cultural environment prevalent in DTVET was described in Chapter Two and indicated that the Government of Botswana has a strong culture of working with development partners and expatriate technical advisers have played a key role in the public service in Botswana for decades. In this case, the responsibility for introducing the new teaching and learning methodologies was devolved to a team of expatriate and local Technical Advisers. The evidence from the field work indicates that the college managers and staff perceived a lack of involvement by DTVET officers as a lack of commitment and support for the change. There is evidence that college managers delegate upwards to DTVET officers and expect them to lead the change in the college. But DTVET officers were sometimes charged with interfering in college business so they have to be careful not to micro-manage in technical colleges. The situation as observed by the researcher was that DTVET officers were committed to the introduction of the new teaching and learning methodologies – they simply delegated too much responsibility to the Technical Advisers, which is common in the culture in

DTVET. As evidenced in the Findings chapter there was some resistance to the policy directive to introduce new teaching and learning technologies by the DTVET officers, some of whom were reticent to admit that they didn't know what the process should be. This may have caused them to avoid capacity building opportunities in the implementation of new teaching and learning technologies. Activities undertaken by the TA Team, which were designed to change the working practice of DTVET officers to support approaches to flexible learning, were mainly ineffective apart from one or two individual officers. College managers, at FCTVE and at the identified outreach centers, made it clear that they perceived a lack of commitment and feared this would result in lack of resourcing for distance and elearning. This was, to some extent, an accurate assessment. Given the bureaucratic nature of the college it is possible that if the DTVET officers, alongside the college managers, had committed to learning about the new teaching and learning methodologies and had given the change process their full support, demonstrated by active involvement and resource allocation, the change process would, in the researchers' opinion, have had a better chance of success.

Guidance and leadership from officers and managers can be a driving force for change just as perceived lack of commitment to change gives rise to resistive behaviour under certain circumstances. The evidence of successful implementation of distance learning in the one Department where the DTVET officer showed not only interest but active leadership and close involvement in the development of the distance learning course, demonstrates the positive impact of the involvement of these important actors in the process. The Hairdressing and Beauty Therapy Department was the first department to admit students to FCTVE and they were distance students. This was supported by the rationalisation of the lecturer who could see that distance learning was an opportunity for her to gain Ministry approval to admit students to the department which she would not be able to gain for conventional contact teaching. Her mental model of what teaching is began to change as she expanded her knowledge and skill-set.

6.2.2 Vision and strategic planning for the reform

Evidence is given in the findings for the lack of a clear management vision at the college which included distance and elearning in new, flexible teaching approaches. This lack of vision was evident in the first college strategic planning process and the missed opportunity was compounded when senior college managers disclosed that they did not fully understand the strategic planning process. Evidence was presented that senior management believed that colleges are not required to develop a strategic plan which reflects how the college will move forward but are required to adapt the plan given to them by DTVET.

Vision statements should come later, suggests Fullan, and it should be a shared vision which is developed collectively with all members of the organisation involved (Fullan 1993.) This was not the approach at FCTVE. Due to the requirement on the TA Team to achieve planned performance indicators, it is likely that the TA Team and college managers fell into the trap, described by Senge, of imposing one group's vision on the organisation (Senge 2006). Senge indicates that such an imposition usually leads only to compliance but not commitment. In the case of FCTVE, it did not even lead to compliance.

If the future of FCTVE, and other colleges like it, lies with the Tertiary Education Council (TEC), then consideration should be given to the view of distance and elearning held by TEC senior management. The Executive Secretary of the Tertiary Education Council made clear his understanding of the potential positive impact of flexible learning on tertiary education but disclosed that in developing the new policy for the Council, policy advisors have been preoccupied with issues of access, quality and relevance. Distance and elearning approaches had not been identified as a possible solution to these issues. If flexible approaches and teaching and learning technologies had been enshrined in TEC strategy from the outset, then the strategic issues of access, quality and relevance may well have been addressed.

Despite the Executive Secretary's recognition in 2008 that flexible approaches and new technologies have potential and are in demand by learners, the latest TEC strategic plan (2010 – 2016) makes no mention of these approaches. The Executive Secretary is the senior national policy adviser in tertiary education who evidently understands the potential value of new approaches but still these approaches do not get enshrined in emerging strategic documents. For any appreciable level of institutionalisation, it is necessary that senior policy advisers for TVET, as well as college managers, are able to articulate their vision and strategy for introducing new teaching and learning technology. This is an important step in actualising national government policy.

6.2.3 Appropriate timing

Time and timing were found to be critical factors in the process of change at FCTVE. It was expected by DTVET officers and the TA Team that teachers would have adequate time to develop new learning materials as many of them had been working at the college for 18 months before any students arrived. There were no references in the higher education case studies explored in the literature which described a similar situation where teachers had no active teaching to attend to whilst preparing for new teaching methodologies. As discussed in the literature review in Chapter Three (3.4.4) there are numerous cases of teachers resisting change through lack of time to develop new learning materials due to time pressure and existing teaching load (Anderson *et al* 1998; Berge 1998; McNaught & Kennedy 2000; Butler & Sellbom 2002; Naidu 2004; Jones 2008; Zhou & Xu 2007).

Although they were not preoccupied with teaching, the findings showed that managers and staff were fully occupied with the opening of the college for full-time, residential students and priority was given to the development of higher level BTEP programmes over new teaching methodologies. For the TA Team, this appeared as a missed opportunity as they believed the higher level programmes could have been developed in a more flexible mode if the innovation had been adopted. But the concomitant reforms of BTEP higher level programmes and new teaching approaches put untenable strain

on the teachers – so it is not surprising they chose one over the other and the one they chose most closely matched their mental models.

The case of one particular teacher is indicative of the influence of timing on the adoption of new teaching and learning methodologies. The case was analysed in section 5.7.4 in the Findings chapter and articulates how teachers will consider change when the timing is right for them. This teacher's earlier non-adoption was not because he rejected the new methodologies but because, working to his own mental models, he prioritised his time differently. He focussed on familiarising himself with the BETP curriculum and developing his content knowledge for the higher qualifications until just before the students were admitted. Only then did he ask for assistance to develop his programme for elearning. Such a response is understandable. The question for change managers is how to manage this kind of individual response to reform and the answer seems to lie in a thorough understanding of teachers' mental models and the systemic constraints on them.

6.2.4 Dominant organisational structure and processes

The organisational character of FCTVE as a government bureaucracy with centralised decision-making and a strong adherence to policy and procedure, where budgets are controlled centrally, resources are restricted and a low degree of interconnectedness all point to the unlikelihood of innovation being readily accepted. It was noted in the literature review that there is a body of thought which posits that *increasing* bureaucratisation in tertiary education is inevitable due to demands for increased efficiency, greater access and the use of technology and distance learning to achieve economies of scale. These external drivers are recognisable at FCTVE in Botswana. There is an alternative bureaucratic form which Marginson and Considine (2000) call 'networked bureaucracy' which includes flatter networked structures based on collaboration between management and academic units. This institutional form was found to exist in the Technology Universities in Australia where it was shown to enable efficiency gains and support institutional reform.

It is the presence of the internal bureaucratic structures and processes which appeared to prevent change from happening in the college. From the FCTVE case study, the researcher concludes that it is *decreasing* bureaucratic structures and processes which will more positively support the desired change. It is believed that a more entrepreneurial or enterprise organisational culture in technical colleges is more appropriate to facilitate change in the future. This may come when the Tertiary Education Council takes control of the higher level TVET colleges and the funding formula changes to a more output based model. In the interim, it will be important to find a way to support and promote change in the context of a bureaucracy. Weber predicted increasing rationalisation with more emphasis on efficiency and predictability and social interaction being shaped by rules, regulations and larger social structures. Strang and Mayer emphasise that “... *diffusion itself is often described as a rational process*” (Strang & Mayer 1993:489). This eloquently links bureaucratic structure with the diffusion theory of adoption of innovation. Strang and Mayer go on to say “... *the process of diffusion can be seen as an inherently sense-making one, where actors jointly construct an understanding of the appropriateness and worth of some practice*” (Strang & Mayer 1993:489). This brings us to the mental models of both teachers and managers and the changes in these which may be brought about by the challenge of increasing performance measurement concomitant with educational reform.

The findings show that the cultural and organisational type predominating at FCTVE at the time of the case study was bureaucratic. The conclusion of the researcher is that for innovation and change to be more successful, the organisation needs to move further towards the new enterprise culture in universities (McNay 1995; Marginson and Considine, 2000). Weber noted that the predominance of the rational authority of the bureaucratic ideal type could only be challenged by a rise in the entrepreneurial personality (Weber 1978).

It is notable that writers on higher education in the USA and Great Britain describe the answer to the pressures on higher education as increasing bureaucratisation and rationality. The researcher contends that the answer to these pressures for change may

well lie in increasing entrepreneurship and innovation which, as we have seen, is rather the antithesis of bureaucratic organisation. This is important because in the case of FCTVE we can see that the bureaucratic nature of the organisation works against the display of innovative behaviour and change. Rational bureaucratic behaviours and processes do not align well with the need for innovation and complex change which is sometimes chaotic.

6.2.5 Organisational structure and culture

Most participants recognised the significance of a top down approach to change at FCTVE which at the same time allows for the national culture in Botswana of consultation and involvement of all stakeholders. It seems unlikely that the middle-out approach advocated by Cummings *et al* (2005) with the caveat of managerial direction, could have taken hold at FCTVE. In Australia, Cummings *et al* found that technology innovation could be led by middle managers in the absence of strong leadership from either college executive or policy makers. The evidence presented in the case study suggests that it is unlikely that this would work in a Botswana technical college but the researcher believes that for effective change to take place, the Heads of Department would need to fulfil the role of champions of change. This is similar to Rogers' change agent role but with one important difference; the Heads of Department are an integral part of the college and not outside agents (Rogers 2003). Merton points out that *"bureaucratic officials affectively identify themselves with their way of life. They have a pride of craft which leads them to resist change in established routines, at least, those changes which are felt to be imposed by others"* (Merton 1957:199). Any future attempt to introduce new teaching and learning technologies to the government technical colleges should focus on strengthening the capacity of the Heads of Department and college managers to lead the change, rather than bringing in external agents. There is the issue of the need for extensive capacity building but this can be solved in a range of different ways.

The creation of an organisational structure in the form of the Flexible Learning Strategy Working Group, comprising Heads of Department and early adopters, was an attempt to

both build the capacity of this important group and encourage them to take control of the change strategy. They proved themselves very capable of strategising, identifying driving and resisting forces and devising action plans; however, implementation did not follow. A self-admitted deficit from the senior manager delegated to head this group was an important factor in the failure of the group to achieve its aims. But the substantial workload on him to operationalise the new college as an approved BTEP centre with programme approvals in seven teaching departments indicate the unlikelihood of him having any spare capacity to attend to widespread conversion to new teaching and learning technologies. The literature describing similar change processes, albeit in other countries and different development contexts, indicate that resistance to change is to be expected when introducing distance and elearning (Jones 2004; Uys 2000; Stiles & York 2006). The Lewin (1951) force field and 3-step change models were employed in the FCTVE case study which foregrounds the importance of understanding resistance and reducing resistive forces in order to bring about change.

The need to become increasingly efficient and provide greater access to good quality technical and vocational education and training is a driving force for change in Botswana. This will require colleges to move from a bureaucratic structure and culture to a more entrepreneurial form of organisation. Weber noted that bureaucracy may “*stifle enterprise*” (Weber 1998:365). Recent empirical work carried out by the researcher indicates that one of the key criteria for success in introducing flexible learning into TVET institutions in African countries is the facility for colleges to charge and retain fees for new short courses (Mead Richardson 2011). Government technical colleges in Botswana may develop and offer short courses but all the fees must be remitted to Treasury. It is intended that technical colleges offering higher level programmes will come under the control of the Tertiary Education Council (TEC) and college funding will then be based on the number of successful graduates produced. Under the current system, college funding does not ‘follow the students’ with many cost elements being paid centrally and funds being allocated to colleges on the basis of annual operating budgets with no ‘per capita’ component. A study of funding in tertiary education commissioned by the Tertiary Education Council, noted that a negative

consequence of the current funding model is that institutions are not allowed to use funds created from cost savings or to generate revenue independently (Merisotis 2006).

6.2.6 Alignment of relevant policies and processes

One of the strongest restraining forces, again connected to the bureaucratic nature of the college, was the fact that the lecturers were working under public service contracts and not teaching service contracts. They were acutely aware of the 'utilisation' clause in their contracts which translated into how many hours a week contact time they were expected to have with their students. This was interpreted as 'lecturing' time and it was not possible for the elearning expert to convince the majority of teachers or managers that they could introduce elearning and still fulfil their contracts. It is unfortunate that the well-designed government Performance Based Reward System has not been fully implemented in the TVET colleges. The Personal Development Plans provide a good opportunity for staff to establish personal objectives for changing their teaching practice and having that achievement recognised. This was considered by the TA Team to be a missed opportunity at FCTVE to promote the changes desired by the Ministry. The Findings chapter presented examples of a range of current processes and procedures within the college which are rigid and do not easily adapt to more flexible programme delivery. These processes were identified as restraining forces by the Heads of Department in the Flexible Learning Strategy Working Group sessions but during the period of the fieldwork no attempt was made to change them.

6.2.7 Mental models of teachers and managers

The lack of change at FCTVE was compounded by the participants' apparent mental models (Senge 2006) about teaching which focus on traditional methods. The concept of establishing a college for traditional teaching fitted with their previously held beliefs of what teaching should be and how a college should be structured. The new behaviour required by the change to teaching with technology or at a distance did not fit their mental models. So even though most participants learned new skills in ICT and integration of technology into teaching, only a few took the next step to put these new skills into action. It was significant that the middle managers had a very strong grasp of

the external drivers for introducing distance and elearning, and could articulate the challenges and the methods for overcoming the challenges, but still they chose not to adopt the innovation. All the Heads of Department were required to teach for 12 hours a week but only one showed any interest in developing any distance or elearning materials.

The change processes involved in the both the curriculum reform of BTEP and the introduction of new teaching and learning methodologies could be seen – in Lyotard's terms – to instill '*the terror of performativity*' in the heart of the teachers (Lyotard 1984). Teachers were required to not only re-think their mental models about teaching in order to consider the introduction of new teaching methodologies, but they were being subjected to new measures of their ability and performance. This increasing performativity changes the rules about what constitutes a good teacher and these rules are set by managers and ministry officials without consultation and agreement.

There was evidence that when a teacher changed their mental model of teaching then adoption of the innovation could take place. One of the innovators for distance learning at FCTVE changed her teaching approach when it became clear that her new teaching context was not supported by her existing model. However, after the fieldwork was completed, when her teaching context became more conducive to traditional approaches, she reverted to her old model and ceased distance learning (although this was also impacted by management decisions and lack of support). This would suggest that the mental model may not have really changed but the adoption was brought about by temporary expediency.

Another strongly voiced belief was that distance education should be the exclusive domain of the Botswana College of Distance and Open Learning (BOCODOL). Several teachers, managers and ministry officials voiced the opinion that FCTVE should not get involved in distance learning as it is the prerogative of BOCODOL. Collaboration on distance learning for the Key Skills programme was a well-supported strategy but there was a lack of ownership of the work on the part of the DTVET officers and FCTVE

lecturers and managers who participated. This was another example of a group who could rationalise the need for distance learning, had some of the skills to develop the programme and had access to expert assistance, but they did not progress the distance learning programme through lack of resource allocation and leadership. Angehrn (2004) suggests that a lack of motivation is a serious impediment to innovation adoption. The strength of these mental models as resistive forces against change suggests that, with the alignment of the other contributory factors, they could be converted to driving forces for change.

6.2.8 Leadership and management

Finally, we turn to the issue of the senior managers at FCTVE and the prioritisation of the establishment of the new college physical facilities, centre and programme approvals over the adoption of new teaching technologies and approaches. The lack of vision for distance and elearning in the strategic planning process was apparent in the case study. The concept of the senior managers 'absenting themselves' from the process of change was reported in the findings in Chapter Five where one of the Deputies is quoted as saying that he could have done more but wanted to believe that others were taking on the leadership of this change. This brings us back to the reasons why the senior college managers might have behaved like this. The researcher observed that the senior managers assigned responsibility for bringing about the change to the TA Team and were fully occupied with opening the new college which, in itself, was a complex process. This also relates to the mental models of the managers which, although not specifically explored in this research, may be similar to those of the teachers. The Principal noted very early on in the process that his entire teaching career had been concerned with contact teaching and he had no experience of distance learning. eLearning was new to almost everyone involved.

In addition, it appeared that there was a strong sense of centralised control over college activities from DTVET. So if change was going to happen it would have to be actively led by DTVET officers. It was noted in the literature review and in the findings that the process of change is complex and can sometimes be chaotic. Future practitioners in

educational technology in TVET institutions would do well to note that the process is not necessarily clear and logical but each stage requires management reflection and adjustment according to the responses of the participants involved.

6.3 RECOMMENDATIONS

The change process studied in this research case was unsuccessful so the findings chapter does not claim to present knowledge of how to successfully manage the change process of introducing new teaching and learning methodologies in a government technical college in Botswana. What has been achieved is the identification of the drivers for change and the significant forces which have created barriers to change in this context. This gives rise to the presentation of a set of recommendations for issues to be addressed in a similar context in the future. The claim to knowledge generated by this study is based on what the participants said about the actions they took or did not take and the observations of the researcher.

In the light of the discussion of the findings of this case study, ten recommendations can be made regarding the organisational structures and management processes which may lead to successful implementation of distance and elearning in a government TVET college.

6.3.1 Leaders with shared vision

The change process is best lead by Ministry officials and the college managers working together. Strengthened capacity of policy advisers and system managers will enable them to lead and support the process of change. DTVET and Tertiary Education Council officers require capacity building and training to support systemic changes in approaches to teaching and programme delivery in technical colleges. It is vital that these officers understand critical issues such as resourcing, contractual issues, teacher utilisation and so on. A shared vision is required; one which is developed through consultation with all staff and achieved by consensus.

6.3.2 Revise conflicting policies

National policy statements and strategic objectives are required which lead to Institutional objectives and ownership of the vision and mission which is developed collaboratively. The existence of policy statements does not ensure enactment. Resource allocation, in a change process lead by managers with a strongly held vision, can positively or negatively affect policy implementation. The current government strategic planning process takes people 'through the motions' but does not engender commitment or ownership. Existing conflicting policies should be identified and addressed. The example of the conflict between new teaching approaches and policy on teacher utilisation has been explained. It was noted that institutional and centralised policies on, for example, stores management or Bursary procedures, could become barriers to more flexible teaching approaches in colleges. These would need to be reconsidered in the light of changing needs. Successful reform more likely involves a whole college approach which would include support staff such as the librarian, Bursar and storekeeper. Flexible learning is about the institution being flexible, not just the teaching and this message needs to be discussed and reinforced throughout the college. People need to know what their new functions are and as indicated by the MIT 90s research, boundaries between job categories and tasks will be increasingly blurred and informal teams may become significant (Scott Morton 1991).

6.3.3 Strategic resourcing

The link between strategic plans and annual budgets needs to be strong. If an activity such as the development of distance learning programmes is in the plan then there should be adequate budget allocation. . For this to happen, budget holders and approvers need to understand how the cost structure for distance education differs from conventional education and the need for initial expenditure on materials development and production before learners can be recruited. Ministry officials need to demonstrate their understanding of the relationship between funding and perceived commitment to planned new activities. There is currently a culture of planning new activities without the certainty that funding will be available for implementation.

6.3.4 Staff development and capacity building

Staff and management development in ICT integration and the change processes involved should be continuing and mandatory, and linked to performance review. The focus on performativity, setting and measuring achievements against defined targets, can be useful in supporting change. Increasing performativity has been shown to influence how teachers think about their practice. The influence of teachers' and managers' mental models on the proposed change has been illustrated. Staff development activities will need to identify and discuss these models and focus both on staff gaining personal mastery of the new approaches and revisiting their mental models about teaching. Teachers without ICT skills will become obsolete in a demand-driven TVET system which requires graduates to be ICT competent at both personal productivity and technical specialism levels. All technical and vocational careers now require students to graduate with ICT skills and this includes TVET teachers. In addition, staff will require skills in course marketing, course costing, learner support, materials production and the management of these functions.

6.3.5 Organisational structures

Different organisational structures are needed to support new ways of working. Flexible Learning Units or Teams are recommended to develop a collective approach to bringing about change. Change agents can be instrumental in supporting desired reforms but in the context of the government technical colleges, it is recommended that internal change agents, or champions, are identified and developed. The role of champions is central to the successful diffusion of new working practice and these should be selected on the basis of their expertise and acceptability to the participants. There is a history of this approach being successful in DTVET with the BTEP Training Team who are effectively change agents for the skills and knowledge needed by lecturers to manage and deliver BTEP. It was noted earlier in the chapter that the Heads of Department could be effectively employed as change agents and departmental teams involved more directly in the process.

6.3.6 Need for new roles

The introduction of new teaching and learning methodologies requires a range of different skills and practices. Many of the new skills are required by the teachers but there is also need for additional support staff such as media and elearning specialists and instructional designers. There was a lack of specialist support persons at FCTVE. A Learning Media Unit was established at FCTVE to provide support to teachers and these roles were carried out by the TA Team as the public service human resource system did not allow for the creation of new roles nor provision of additional staff. This was seen as a restraining force by the college managers. It is recommended that the need for new job roles is recognised and appropriate staffing is provided.

In addition, enhanced ICT infrastructure requires dedicated technical support which does not currently exist in TVET colleges. Heads of ICT academic departments are generally held responsible for managing the ICT network and infrastructure, a role for which they may not be qualified. In a future TVET college which relies on a fully functioning ICT infrastructure, specialised technical support with qualified staff will be a necessity.

6.3.7 Link innovative behaviour to recognition and reward systems

Teachers and managers need to understand the personal advantage in terms of recognition and reward if they adopt new teaching and learning methodologies. Existing processes such as the Performance Based Rewards System and Personal Development Plans could be very effective tools in ratifying and promoting change if they were understood well by the college staff and managers and used to focus on introducing new teaching approaches. Lecturers have noted that they should be required to consider new teaching approaches and the government appraisal system is well designed to facilitate lecturers' innovative behaviour and having it recognised by management.

6.3.8 Appropriate timing

Major reforms have little chance of success unless they are carried out in their own time. The FCTVE case study showed that introducing two major reforms at the same time forces teachers to choose between them when time is limited. For the duration of the fieldwork, college managers and lecturers were challenged by conflicting demands on their time to prepare to open the new college for advanced levels of BTEP as well as introduce distance and elearning teaching approaches. The study also revealed that participants will choose the reform that most closely fits their mental models and comfort levels.

6.3.9 Omni-directional change approach

A top down approach to change is required in the FCTVE government bureaucracy but effective change may benefit from 'middle-out' implementation with strong leadership from the Heads of Department and continuous discussion and 'bottom-up' consultation with lecturers. Change can only happen when it resonates with the moral purpose (Fullan 2003) and the mental models (Senge 2006) of the teachers and managers involved. This is linked to the final recommendation regarding a shift in colleges towards a more entrepreneurial culture.

6.3.10 Support entrepreneurialism in colleges

If the future of the higher level technical colleges in Botswana lies under the auspices of the Tertiary Education Council, the funding model will need to be re-visited to ensure that the entrepreneurial spirit can emerge over the current reliance on bureaucratic culture and structures. One of the impacts of globalization, even in developing countries, is the increasing focus on entrepreneurialism in public sector institutions and the introduction of new performative measures to establish and achieve targets.

The FCTVE case study has shown how rational bureaucratic structures and processes can be used as resistive forces to prevent change. Enabling colleges to develop plans for new courses, pay teachers additionally and retain fee income will offer the incentives and rewards which are needed. The increasing institutionalisation of elearning will

support both campus-based and distance offerings. External forces for organisational change are a reality in education and coupled with advances in educational technology it becomes imperative that effective strategies for change management are articulated for institutions. Institutions which are best adapted to change will have the most chance of success and survival.

As Botswana contends with the impact of globalisation including increasing pressure from cross-border TVET providers, stronger demands from industry for employable workers skilled to international standards and possible opportunities for offering their own off-shore programmes, the notion of the enterprise or entrepreneurial institution may become more salient. It is likely that distance and elearning will have an important role to play.

These ten recommendations emerged from the critical issues and concepts raised by the participants in the FCTVE case study and were informed by the literature describing change and innovation theories, models and practice in related contexts.

6.4 CLAIMS TO GENERALISATION

DTVET indicated that the introduction of new teaching and learning methodologies was to be piloted at FCTVE with a plan to extend these approaches to other government technical colleges. Any claims to generalisation for the findings of this case study have potentially significant ramifications for the government TVET system in Botswana.

According to Lincoln and Guba, it was Stake who first introduced the concept of naturalistic generalisation in a 1978 paper called 'The Case Study Method in Social Inquiry'. Stake contends that case studies are a powerful method for building generalisations that are, "*intuitive, empirical, based on personal, direct and vicarious experience*" (Lincoln & Guba 1985:120). Single case studies are often criticised as a poor basis for generalising, according to Yin (2009), but he contends that case studies rely on *analytic* generalisation rather than *statistical* generalisation and lead to the identification of other cases where the results are generalisable.

Qualitative research methodology is frequently criticised for being non-scientific, especially when claims to generalisation are made from a single case study. The researcher asserts that this case study has an acceptable level of external validity and a similar qualitative study carried out in any of the Government TVET colleges, under the same conditions of an external TA intervention whilst upgrading a college for higher level programmes, would produce findings similar to those of the FCTVE case study. The researcher contends that the recommendations are applicable to any other government technical college where new teaching and learning technologies may be introduced with the input of a Technical Assistance Team. This is significant because of the strong government policy statements about increasing access through new flexible delivery modes and DTVET's stated strategy to introduce distance and elearning.

6.5 LIMITATIONS OF THE STUDY

It is essential to identify any inherent limitations in the study. As noted in Chapter Four in the discussion on research methods, in his diffusion of innovation theory, Rogers (2003) highlights the issue of theoretic bias. He calls it the pro-innovation bias and cites Downs and Mohr (1976) who note that innovation is usually seen as synonymous with improvement and is heavily laden with positive value. The research was, indeed, conducted from the researcher's position that distance and elearning are positive innovative developments in a technical college. This position was not held by all the participants. There is also the issue of the requirement upon the researcher, along with the other members of the Technical Advisory team, to achieve agreed outcomes within the conditions of the consulting contract with the European Union. This requirement made the actions of the research 'value-laden' beyond personal belief in the innovation.

The study revealed a profound lack of management direction and leadership amongst both the DTVET officers and college managers for the desired change process. This was considered to be a dominant restraining force against change. Senge has noted that the leader's effectiveness is largely dependent on the accuracy of his/her mental map of the change environment (Senge 2006). This research did not focus on the

mental models of the college senior managers and this could be seen as a limitation in the case study as lack of leadership was seen as a restraining force in the change process.

The most significant possible limitation on the study is the potential influence of the researcher in the research process. As an integral part of the process which was observed throughout long-term fieldwork, it was inevitable that relationships were formed with the participants. There was also the influence of the 'professional' demands on the researcher who, along with other members of the TA Team, was required to achieve certain objectives by the Government of Botswana and the European Union Delegation. Steps taken to mitigate this potential subjective influence were explained in Chapter Four on research methods, such as cross referencing observed behaviours with interviews and participant validation, or member checking, of transcribed interviews. The researcher attempted to remain reflexive and aware of potential bias in observation or interpretation and reflected on her action throughout the fieldwork and writing process.

6.6 FURTHER RESEARCH

Further research on the managers' mental models around teaching, change and leadership, would be useful for both academic research and practical application. This is linked to the observation made in the findings in Chapter Five where Fullan's first lesson of the new paradigm of change arises – that the more complex the change, the less you can force it; or "*you can't mandate what matters*" (Fullan 1993:21). The reason for this, according to Fullan is because complex change requires skills, creative thinking and committed action. The further research required here is how to facilitate the development of creative thinking and commitment which leads to action.

Weber predicted increasing bureaucratization in society and the organisation of educational institutions along bureaucratic lines is unlikely to change greatly in the near future. Over fifty years ago, Merton asked "*do bureaucracies select personalities of particularly submissive or ascendant tendencies?*" (Merton 1957:201). The researcher

would modify that further and suggest research is needed into the mental models of the people who work in bureaucracies in education in order to better understand the relationship between bureaucratic structures and change – particularly technology integration in learning. More analysis is needed of educational institutions as bureaucracies to understand how they operate and how change can be brought about. As Merton indicated *“The range of theoretically significant and practically important questions would seem to be limited only by the accessibility of the concrete data”* (Merton 1957:201).

In his meta-analysis of research literature on elearning projects that failed, Romiszowski noted that. *“... only some of the principles that emerged from the literature analysis have any significant research to back them up”* and that a *“... limitation of the literature analysed is that very little of it presents detailed accounts of actual projects that have failed”* (Romiszowski 2004: 21). It is intended that this case study contributes to the knowledge base on introducing distance and elearning into education and that it is particularly valuable because of the empirical research base and scarce nature of the educational context. Romiszowski claims that *“much of the really important learning in this area is not classroom or theory-based, but is achieved on-the-job, by working in real project contexts and dealing with real people”* (Romiszowski 2004:25). This is an apt description of the FCTVE case study and the aim is for it to contribute to the knowledge base for researchers, practitioners and policy advisers in this field.

6.7 CONCLUDING REMARKS

If staff at technical colleges are really public servants then their driving motivation should be to serve the public and this means meeting the demand for increasingly flexible provision of TVET programmes. However, the prevailing culture currently supports the inclination to maintain the status quo of the bureaucratic system. Innovation will involve flattening the hierarchy or control structures and being more flexible with job roles – more team working and division of labour as advocated by Otto Peters in his seminal work on distance learning as the industrialisation of education

(Peters 1993). The networked bureaucracy identified in Australian Universities of Technology by Marginson and Considine (2000) may be an important starting point.

The integration of technology into educational provision is a feature of 21st Century learning that will not be reversed. There are potential benefits to be gained in terms of increased access, improved efficiency and better quality educational provision. The change processes involved are complex and require new forms of management and organisation which are not currently present in the Botswana government TVET system. Naidoo and Schutte quote a World Bank report from 1995, *“If African countries cannot take advantage of the information revolution and surf this great wave of technological change, they may be crushed by it. ... Catching this wave will require visionary leadership in Africa”* (Naidoo & Schutte 1999:92). The policy advisors and ministry officials in Botswana have already communicated their vision for TVET through distance and elearning. The successful implementation of new teaching and learning technologies from introduction to institutionalisation now require visionary leadership and management in new organisational structures and cultures.

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Appendix 1 Research Permit

TELEPHONE: 3655400

TELEX: 2944 THUTO BD

FAX: 351624/3655408

REFERENCE: E 11/17/XXXXX(73)



REPUBLIC OF BOTSWANA

MINISTRY OF EDUCATION

PRIVATE BAG 005

GABORONE

BOTSWANA

31 July 2007

To: Ms Alison Mead Richardson
P O Box 2663
Francistown

RE: PERMISSION TO CONDUCT RESEARCH

We acknowledge receipt of your application to conduct research that will :

- CAPTURE STAKEHOLDER'S PERSPECTIVE
- ESTABLISH WHAT FACTORS CONTRIBUTE TO EFFECTIVE INSTITUTIONALISATION.

You are granted permission to conduct your research entitled:

FROM INTRODUCTION TO INSTITUTIONALISATION: THE PROCESS OF ESTABLISHING NEW TEACHING & LEARNING METHODOLOGIES IN VOCATIONAL EDUCATION AND TRAINING.

This permit is valid until 31 June 2008 You are reminded to submit a copy of your final report to the Ministry of Education, Botswana

Thank you,

A handwritten signature in black ink, appearing to read 'M.L. Phiri'.

M.L. Phiri

For /Permanent Secretary

Appendix 2 Informed Consent Form

Participation in research into new

teaching and learning technologies at FCTVE

Informed Consent Form

I voluntarily agree to participate in the research into the processes of introducing new teaching and learning technologies into the VET system in Botswana. I understand that this research is being conducted by Alison Mead Richardson, the TA Distance Education, to inform the development of staff training activities at DVET/FCTVE and is also the basis of her doctoral dissertation. I understand that Ms Mead Richardson has been given a formal permit to carry out this study from the Department of Planning & Research in the Ministry of Education. A report of the findings will be provided to DVET.

I understand that I may be asked to be a respondent in a series of individual interviews at strategic points in the research. I acknowledge the importance of continuity of respondents in order to make the research meaningful.

I agree that the interviews will take place either in person or using a computer-based instant messaging system in order to provide immediate transcripts of the questions and answers. I understand that the transcripts of the interviews will be used only by Alison Mead Richardson for analysis of interview data and will not be disclosed to any other person.

I understand that I will be asked to review the transcript of the interviews and discuss the content with the researcher. In extreme cases I may decline permission to quote from the interview.

I understand that because a sample of respondents have been requested to participate, from a small population, based on their position within FCTVE or DVET, that it may not be possible to provide anonymity in either the report to DVET or the dissertation.

I grant permission for the research data generated to be published in a research report to DVET and in the dissertation and future publication(s).

Research Participant Name

Research Participant Signature

Date

Appendix 3 List of persons interviewed

No	Position	Institution/Department	No. of interviews
1.	Principal	FCTVE	3
2.	HoD	Construction FCTVE	1
3.	Lecturer 1	Hairdressing & Beauty Therapy FCTVE	3
4.	HoD acting	Hospitality & Tourism	1
5.	Lecturer	Hospitality & Tourism	
6.	PTEO	Hairdressing & Beauty Therapy DTVET	3
7.	Deputy Principal	Curriculum & QA – FCTVE	2
8.	Deputy Principal	Resources – FCTVE	1
9.	Deputy Principal (new)	Resources – FCTVE	2
10.	HoD (new)	Hospitality & Tourism – FCTVE	1
11.	HoD	Key Skills	1
12.	Director	Quality Assurance & Accreditation DTVET	2
13.	PTEO	Entrepreneurship	1
14.	Permanent Secretary	Ministry of Communications Science & Technology	1
15.	PTEO	Hospitality & Tourism DTVET	1
16.	Acting Director	DTVET	2
17.	BTEP Trainer	Gaborone Technical College	1
18.	BTEP Trainer	Jwaneng Technical College	1
19.	BTEP Trainer	Selibe Phikwe Technical College	1
20.	Principal	Technical College	1
21.	Lecturer	Hospitality	1
22.	Lecturer	Beauty Therapy	1
23.	Head of Distance Education Unit	University of Botswana	1

24.	Head of EduTech Unit	University of Botswana	1
25.	HoB	Business FCTVE	2
26.	Technical Adviser	Management – DTVET	1
27.	HoD	ICT FCTVE	2
28.	Lecturer	ICT	2
29.	Lecturer	Multimedia	1
30.	Lecturer 1	Clothing Design & Textiles	1
31.	Lecturer 2	Clothing Design & Textiles	1
32.	Lecturer 3	Clothing Design & Textiles	1
33.	Lecturer	Hairdressing Gaborone Technical College	1
34.	PTEO	Key Skills DTVET	1
35.	Director	ICT Ministry of Education & Skills Development	
36.	TA Team Leader	FCTVE	1
37.	Instructional Design TA	FCTVE	1
38.	eLearning TA	FCTVE	1
39.	Director	Innovation Hub Ministry of Communications Science & Technology	1
40.	Executive Secretary	Tertiary Education Council	1
41.	HoD (acting)	Business - FCTVE	1
42.	Lecturer	Tourism	1
43.	Technician	ICT – FCTVE	1