FACULTY OF EDUCATION

DEPARTMENT OF ADULT EDUCATION

An assessment of the relevance of the Diploma in Technical and Vocational Education (DTVE) for preparing teachers for the Botswana Technical Education Programme (BTEP).

By

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A Dissertation Submitted in Partial Fulfilment of the Requirement for the Award of the Degree of Masters of Education (Adult Education) at the University of Botswana

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Date of Submission:

September 2015

An assessment of the relevance of the Diploma in Technical and Vocational Education.

Statement of originality

I, the undersigned researcher certify herein that this research was carried out while a student at the University of Botswana between 2013 and 2015. I prove and affirm that it is the product of my work that has not been submitted to nor published anywhere else and that any ideas or quotations from the work of other people are fully acknowledged in accordance with standard referencing style of the American Psychological Association (APA) style.

Signature: _____

Date: _____

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Approval

This dissertation has been examined and approved as meeting the requirements for the partial fulfilment of the Masters Degree in Education (Adult Education).

.... Signature .... Date ....

Supervisor

.... Signature .... Date ....

Internal Examiner

.... Signature .... Date ....

External Examiner

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Dedication

I dedicate my dissertation to my family. I doubt that without their support, I would have completed this work.

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Acknowledgement

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Abbreviations and acronyms

BCA - Botswana College of Agriculture

BFTU - Botswana Federation of Trade Unions

BIAC - Botswana Institute of Administration and Commerce

BNVQF -Botswana National Vocational Qualifications Framework

BTEP - Botswana Technical Education Programme

BOTA - Botswana Training Authority

BQA - Botswana Qualifications Authority

BRIDEC - Brigades Development Centre

DTVET - Department of Technical Vocational Education and Training

DTVE - Diploma in Technical and Vocational Education

DVET - Department of Vocational Education and Training

FCTVE - Francistown College of Technical and Vocational Education

ICT - Information Communications Technology

MTTC - Madirelo Training & Testing Centre

MoESD - Ministry of Education and Skills Development

MLHA - Ministry of Labour and Home Affairs

NDP - National Development Plan

NCVT - National Centre for Vocational Training

NPVET - National Policy on Vocational Education and Training

OBE - Outcomes Based Education

PBRS - Performance Based Reward System

RTC - Roads Training Centre

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SQA - Scottish Qualifications Authority

TEC – Tertiary Education Council

TP - Teaching Placement

TTTC - Technical Teacher Training College

VTC - Vocational Training Centre

UB – University of Botswana.

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Definition of terms

Definition of terms should be given in relation to the research project (Leedy, 1993). Terms should be defined operationally. This is the manner in which the concepts will be dealt with in this study.

Brigade

A brigade, in the Botswana context "is a small community organisation which offers vocational training at the semi-skilled level and also engages in income-generating production activities and rural development projects" (Republic of Botswana, 1993, p. 196).

Facilitator

Hornsby (2000) describes a facilitator as "a person who helps somebody to do something more easily by discussing problems or giving advice rather than telling them what to do" (p. 449).

Outcomes-based Education (OBE)

The term means focussing and organising everything in an education system around "what is essential for all learners to be able to do successfully at the end of their learning experiences" (Spady, 1994, p. 1).

Technician

A technician is a "person who requires a substantial amount of technical knowledge and knowledge skills in order to do his or her function, and who can work with little or no supervision" (Republic of Botswana, 1993, p. 198).

Technical and vocational education

Technical and vocational education is defined as

> a comprehensive term referring to those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge relating to

occupations in various sectors of economic and social life (UNESCO-UNEVOC, 2010, p. 1).

Technical Training

Technical training refers to the "preparation for the technician level of employment, in which the application of technical knowledge is the major component of the skilled work" (Republic of Botswana, 1993, p. 193).

Training

Training is "the acquisition of the necessary skill competencies for doing a job – and being able to apply them to get the job done to the standard required" (Republic of Botswana, 1993, p. 193).

Vocational Training

Vocational training in Botswana "applies to the development of skills to the level of skilled worker or craftsman and is used synonymously with skills training" (Republic of Botswana, 1993, p. 193).

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Abstract

The Botswana Technical Education Programme (BTEP) was introduced in the Botswana educational system as a policy that would align technical and vocational education graduate skills with the needs of industry. Some past studies had revealed that there was a skills mismatch between what graduates were taught and the demands of industry. When BTEP was introduced it came with constructivist learner-centred teaching methodologies which were new in the technical and vocational system. The Diploma in Technical and Vocational Education (DTVE) graduates are trained specifically to teach BTEP.

This study, therefore, investigated the relevance of the DTVE programme in training teachers trained at Francistown College of Technical and Vocational Education (FCTVE) for teaching BTEP. This phenomenological study was guided by Donald Kirkpatrick (1994) model known as Assessing Training Effectiveness, which is a model mainly used for curriculum evaluation.

Through in-depth individual interviews with DTVE graduate teachers and Heads of Departments (HoDs), this qualitative study sought to determine the teachers' ability to cope with the demands of the teaching environment that was introduced to handle BTEP. The interviews tried to find out the perceptions of the HoDs and teachers about the relevance of their programme. Classroom observations were also carried out on some of the teachers who were interviewed on order to find out what was happening on the ground.

Though the findings indicate that there were a lot of successes in the way FCTVE has handled training, there were also some challenges which cannot be ignored. Some of the outstanding achievements were that FCTVE was doing a good job on training the teachers to use learner-centred methods. The findings also revealed that the graduate teachers were team workers and respected their supervisors and colleagues as well as the learners they teach. The FCTVE graduate teachers made detailed preparations for their work and followed the schedule in whatever they were doing.

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However, some of the challenges facing the graduate teachers were that they seem to be lacking in the principles of Guidance and Counselling, adult education, mixed ability teaching and portfolio assessment. These skills have been imparted to them but it seems that it was more theoretical than practical.

In this study recommendations such as the review of the DTVE and BTEP programmes to include other methods of teaching to help teachers have a variety of teaching methods to choose from, were made. Based on the findings of the study, the areas that need further exploration were also put forward.

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Chapter 1- Background of the study

Introduction

Many people realise that they need technical and vocational skills in order to survive in the world of work. Governments have also recognised the importance of skills as they enhance economic diversification which in turn contributes to poverty reduction and sustainable development (UNESCO-UNEVOC, 1996). In that way technical and vocational education learners need to be equipped with the necessary skills in order for them to be effective in the job market (Botswana Training Authority, 2010a). In addition to technical and vocational skills, employers also emphasize the need to incorporate soft skills such as information communications technology, problem solving techniques and team working to further strengthen the graduates' competiveness in the job market (UNESCO-UNEVOC, 1996). Because of technological advances, even those who are currently in the job market need to be up-skilled from time to time in order to be up-to-date in this ever changing world of work. The other trend that makes skills demand so strong is the issue of globalization, which makes some employees obsolete when they need to compete with other employees from more technologically advanced economies. To react to this the Government of Botswana made an emphasis to "develop a responsive and relevant training geared to the needs of the economy" (Republic of Botswana, 2008a, p. 4) by the "provision of a relevant training programme" (Republic of Botswana, 2008a, p. 19). One of the programmes that were designed to cater for this is the Botswana Technical Education Programme (BTEP).

It is therefore in this context that this study assessed the relevance of the Diploma in Technical and Vocational Education (DTVE) in preparing facilitators to teach the Botswana Technical Education Programme (BTEP) in Technical Colleges. In this chapter, the

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background of the study, related theories, statement of the problem, purpose of the study, research objectives, research questions, significance of the study, limitations of the study and delimitations of the study are discussed.

Technical and vocational training in Botswana

This part of the paper traces technical and vocational education in Botswana by first establishing the differences between the terms 'vocational' and 'technical' so that their usage throughout this paper can easily be understood. Definitions and overview of both vocational and technical training in Botswana are presented. Technical and vocational education is defined as

> a comprehensive term referring to those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life (UNESCO-UNEVOC, 2010, p. 1).

However, the terms were dealt with separately in this research as they refer to different areas in the Botswana technical and vocational education system.

Overview of vocational training in Botswana

Even though informal vocational training in Botswana can be traced far back to the pre-colonial era, in its modern form, vocational training started in 1962 when the colonial Government started a national trade testing system at the Botswana Training Centre (Coles, 1985; Mupimpila & Narayana, 2009; Dubois et al, 2010). The term 'Vocational Training' is defined by the 1993 Report of the National Commission on Education as "the development of skills to the level of skilled worker or craftsman and is used synonymously with skills training" (Republic of Botswana, 1993, p. 193). Its main purpose is to equip the learners with the much needed skills for doing the job as well as applying the skills to the necessary

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standards. Most vocational training is found in the brigades and in private vocational colleges.

Dubois et al (2010) indicated that community-based vocational training in Botswana started around 1965 with the formation of the first brigade at Swaneng Hill School in Serowe by Patrick van Rensburg known as the Serowe Builders' Brigade. A brigade, in the Botswana context, "is a small community organisation which offers vocational training at the semi-skilled level and also engages in income-generating production activities and rural development projects" (Republic of Botswana, 1993, p. 196). The idea of brigades in Botswana arose as a result of the skills shortage and to answer to the problem of Standard Seven school leavers who could not be admitted to secondary schools (Mupimpila & Narayana, 2009; Republic of Botswana, 1993; Ulin, 1974). The Government of Botswana after Independence was very keen on offering secondary education to the nation as a means of producing civil servants such as administrators, teachers and clerks. This was a political rather than an economic move (Ulin, 1974). It was evident that the market for these types of white-collar jobs would soon become saturated; therefore the country would need skilled artisans.

On the other hand, Patrick van Rensburg realised that skills training in a brigade was economically viable because apart from the salaries of expatriate volunteer staff, all other recurrent costs were to be met by the productive labour of the trainees. However, there were some negative impacts which presented themselves in this type of training. It was clear that since the brigades were to raise funds, they had to sacrifice a lot of training time to production. But at the same time this helped the trainees to gain the much needed entrepreneurial skills which trainees would use after completion (Ulin, 1974).

The type of training offered by the Serowe Brigades was to train builders, farmers, carpenters and weavers. After their introduction in the late-1960s, brigades became popular

all over the country during the 1970s. They were run by both independent agencies and some government agencies. Most of these brigades trained in vocational related subjects as well as providing general education in areas such as Mathematics, English and Science. As a result of this expansion it was now evident that the brigades needed some form of administration. The Government of Botswana formed the Brigades Development Centre (BRIDEC) in 1977 as part of the Ministry of Education to "coordinate brigade operations, provide central professional support and administer government funding" (Republic of Botswana, 1993, p. 196). In addition to that, the Ministry of Education, through BRIDEC, would help brigades to develop the quality of training by improving the standards of instructors as well as facilities (Republic of Botswana, 1993). Looking at the above situation the existence of BRIDEC was inevitable as it was its purpose to offer in-service training to the brigades instructors in the form of teaching methodologies and pedagogy.

On the other hand, unlike in the community-run brigades, Government departments and parastatal organisations such as Botswana Power Cooperation (BPC), Central Transport Organisation (CTO), Botswana Telecommunications Cooperation (BTC) and others had training centres with qualified staff. Some private companies such as Debswana and Bamangwato Concession Limited (BCL) also provided quality training with qualified staff to their employees. In addition to these there were also private vocational colleges which ran business and secretarial courses on a commercial basis which also had qualified staff.

The brigades offered Trade Test C and B as well as National Craft Certificate (NCC) (Kewagamang & Kabecha, 1997). A challenge with vocational training was that training was not guaranteed. Brigades could change the courses anytime depending on different factors such as the availability of instructors and other resources, the issue of profitability and whether the course was sustainable (Kewagamang & Kabecha, 1997). The level and quality

of training also differed from one brigade to the other which made the application of standards almost impossible.

In order to improve the state of vocational training Botswana passed the Apprenticeship and Industrial Training Act in 1983 which made Junior Certificate (JC) the minimum qualification for vocational training instead of the initial Primary School Leaving Examination (PSLE). This led to the establishment of Vocational Training Centres (VTCs). It also made sure apprenticeship programmes were delivered in the form of employer-based training. This Act also appointed the Department of Labour in the Ministry of Home Affairs to deal with the apprenticeship run by the brigades (Mupimpila & Narayana, 2009). In 1986, the trade testing system was expanded and Madirelo Training and Testing Centre (MTTC) was established. Its main duty was to certify the vocational training programmes in both government and non-government institutions (Mupimpila & Narayana, 2009).

Another form of vocational education in Botswana was offered by the VTCs which started much later, compared to the brigades, around 1986 (Mupimpila & Narayana, 2009; Republic of Botswana, 1993). VTCs were larger than brigades, were Government run and were found in densely populated urban areas. Over time the VTCs increased in numbers. The main aim of VTCs was to provide artisan training within the framework of the Botswana apprenticeship scheme in the form of commercial trades as well as computer courses. The idea of apprenticeship came in 1983 with the formation of the Industrial Training Act (Mupimpila & Narayana, 2009). This paved the way to the on-the-job training which was to be offered by VTCs with the supervision by the Directorate of Apprenticeship and Industrial Training (DAIT) and the Madirelo Training and Testing Centre (MTTC) which were in the Department of Labour of the Ministry of Home Affairs. On the other hand the Department of Vocational Education and Training (DVET) which was under the Ministry of Education was to provide the training (Kewagamang & Kabecha, 1997; Mupimpila & Narayana, 2009).

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There were challenges with on-the-job training as it lacked proper supervision as a result of understaffing at MTTC. This led to the underutilisation of the VTCs. In an attempt to remedy the situation of underutilisation, DVET introduced a two-year full-time pre-employment training course to be offered in the VTCs (Kewagamang & Kabecha, 1997). This course was to be phased out as soon as apprenticeships increased. The course provided problems to the VTCs as there was shortage of equipment to run the practical part. The course also did not provide any formal qualification.

One of the problems encompassing vocational training was that the brigades and the VTCs leavers were not employable (Botswana Training Authority, 2010b). The main reason was that the skills acquired by vocational centre leavers seemed to be irrelevant to the needs of industry (Republic of Botswana, 1997). In order to rectify this, the Government of Botswana adopted the National Policy on Vocational Education and Training in 1997.

In 1994 the Government made a decision to merge all education under one ministry, the Ministry of Education (Mupimpila & Narayana, 2009). Finally in 2006 Government ordered the brigades takeover. Some of these will be transformed into Technical Colleges (Mupimpila & Narayana, 2009; Van Rensburg, 2007).

Overview of technical training in Botswana

Technical training refers to the "preparation for the technician level of employment, in which the application of technical knowledge is the major component of the skilled work" (Republic of Botswana, 1993, p. 193). A technician "is a person who requires a substantial amount of technical knowledge and knowledge skills in order to do his or her function, and who can work with little or no supervision" (Republic of Botswana, 1993, p. 198). The entrance qualification for technical training has been O'level or Form 5 and at the end of

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training a certificate or diploma is awarded. Originally, the National Centre for Vocational Training (NCVT) trained technicians in Botswana. However, in 1979 the Centre was improved and was transformed into what was known as the Botswana Polytechnic, which became the main establishment for technician training in Botswana. The Botswana Polytechnic launched its first vocational teacher training programme in 1984. It was a three year certificate. In 1986, it was shortened to one year and produced Vocational Training Centre (VTC) instructors. The Botswana Polytechnic also offered certificates and diplomas in civil, mechanical and electrical engineering (Mupimpila & Narayana, 2009).

In 1997 government transformed VTCs into Technical Colleges (TCs). These trained both Junior and Secondary school leavers up to NCC level (UNESCO, 2012). However, Technical Colleges faced a problem in the fact that their graduates were not employable (Swartland, 2008). The graduates should meet the need of the current economic situation and therefore should also be self-employed (Richardson, 2009). This decision ended up with the introduction of Botswana Technical Education Programme (BTEP).

Emergence of the Botswana Technical Education Programme (BTEP)

The decision by the Government of Botswana to introduce the Botswana Technical Education Programme (BTEP) came as a mandate by the National Policy on Vocational Education and Training of 1997. BTEP was adapted from Scotland with the help of the Scottish Qualifications Authority (SQA) and introduced in Botswana in 2001 with very few changes being made. This means it has not been smoothly implemented in Botswana as little consideration was put into the fact that the situation in Botswana might be different from that of Scotland. On the other hand very little research has been carried out on this subject in Botswana which makes it difficult to pursue the topic with ease. BTEP is offered in Technical Colleges across the country. It targets those school-leavers who have completed

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their junior secondary and senior secondary education (UNESCO, 2012). Programmes which are offered by Technical Colleges through BTEP are: Business, Information Communications Technology (ICT) and Multimedia, Hospitality Operations, Travel and Tourism, Clothing Design and Textiles, Hairdressing and Beauty Therapy, Construction, and Engineering (Richardson, 2009).

According to Swartland (2008), since BTEP had to produce graduates who would be self-employed, it had to incorporate idea of Entrepreurship Education (EE) within the training programme. BTE programme is available to technical colleges in three levels, namely; Foundation, Certificate and Advanced Certificate.

After BTEP was implemented, there was a plan that there should in future be research studies to determine "the immediate and long-term value and relevance of Botswana Technical Education Program (BTEP) and the re-organization of TVET programs as well as the training of DTVET teachers and staff" (African Development Bank, 2009, p. 8). There is no evidence that such studies were attempted. The importance of such studies would be that they would aid the Department of Technical and Vocational Education and Training (DTVET) with a reliable assessment of the progress of BTEP in order to consider improvements which will be beneficial in the long term (African Development Bank, 2009). On the training of teaching staff, the African Development Bank (2009) report suggested that local institutions, as well as regional ones will be used to train them. On the contrary, technical staff would be trained in international institutions, more especially those ones in the UK, the main reason for which is not clear.

Swartland (2008) pointed out that since this was a new programme, teachers had to be in-serviced. To cater for that, the Human Resource Development (HRD) unit of DVET made an arrangement to in-service teachers to ensure that they possess necessary pedagogical skills and manage quality assurance and assessment procedures.

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However, the implementation of BTEP in Technical Colleges did not go smoothly as anticipated. It was hindered by a lot of factors among them being that officers in DTVET who were accountable for the implementation of the BTEP programme dragged their feet (Richardson, 2009). Mhizha (2012) argued that the Technical Colleges' Curriculum Committee of 2010 had indicated that teachers had a negative attitude as well as a lack of commitment to BTEP from the beginning. On the other hand DTVET did not provide sufficient support to the teachers in terms of delivery and assessment criteria as they were mandated to do so (Mhizha, 2012).

Very little research has been carried out on BTEP. It has not been proven whether it actually prepares learners for the world of work. It has not been confirmed if it solves the issue of mismatch of skills with industry needs. However, there was a tracer study on BTEP which was carried out in 2006 which aimed at investigating "the relevance and quality of the course in relation to graduate employability, and the consequent level of graduate employment or self-employment" (Swartland, 2008, p. 9). It was too early to carry such a study as BTEP was new and some of the programmes had not been rolled out yet. On top of that the study was conducted with only a few graduates as many of them could not be traced.

After that Richardson (2009) found out that BTEP has been blamed for the fact that it seems it cannot produce graduates who are employment-ready because it is lacking in the provision of practical experience during training.

Given the above observations that the implementation of BTEP has not gone smoothly, including the in-servicing of the teachers and the support staff, this study sought to find out if the DTVE programme produced teachers who are adequately prepared to teach BTEP.

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A relevant teacher training programme

Learners enter skills training eager to learn how to be competent and confident in their future jobs after they have completed their training. Some of them might have had their experiences before through being exposed to the work environment or just through observation of the industrial system. This is the learners' prior knowledge which should be taken into account. Bransford, Brown, and Cocking (2000) opined that learners

> come to formal education with a range of prior knowledge, skills, beliefs, and concepts that significantly influence what they notice about the environment and how they organize and interpret it. This, in turn, affects their abilities to remember, reason, solve problems, and acquire new knowledge (p. 10).

This is very important because if the learners do not find what they expected, they might get disillusioned and this might affect their learning. This situation might be interpreted by the learners as an irrelevant programme. Therefore it is up to the teacher to be in a position to make the learners stay focused and concentrate on the programme.

Teachers play a pertinent role in society and provide through schools the transition-base between family and the broader community and society. Teachers need to be prepared in terms of pedagogy and classroom management to handle learners. The teaching environment has been described in the following words: "There is probably no profession as exciting and as personally rewarding as that of teaching. Each day presents a new opportunity to enrich the lives of others and one's own in the process" (Dunn & Dunn, 1998, p. 1). It is therefore a major goal for teachers to prepare learners to flexibly adapt to schooling and the curricula settings and problems, and successfully transfer and apply their learning. Bransford et al. (2000) argued that "effective teachers attempt to support positive transfer by actively identifying the strengths that learners bring to a learning situation and building on them, thereby building bridges between learners' knowledge and the learning objectives set out by the teacher" (p. 236). The problem arises in contexts when the teacher

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is not effective enough to handle learning situations, then it is likely to be very difficult for the education system to achieve what it aims to accomplish.

Some research has been carried in out Botswana to find out the relevance of skills training to industry (Swartland, 2008). This research study was on the quality of the curriculum to be able to make graduates acquire employment. Employability was a measure that was used to prove or disprove the quality of the curriculum. The results were positive but the argument is that those who were able to be traced were the employed ones. Out of a possible 1634 graduates only 739 were traced. The major problem being that it was not easy to access their contact details. One of the research studies was conducted by Botswana Training Authority (BOTA). This was a tracer study on the Employment Outcomes of the Vocational Training Graduates. BOTA was motivated to carry out this research by the fact that they had realised that it was widely believed that the vocational training system in Botswana was totally out of alignment with the economy and the labour market (Botswana Training Authority, 2010b). As with the Swartland study, the BOTA study showed that some institutions did not keep or update their data which was supposed to be available. As found out by Mhizha (2012) this might be a sign that the responsible officers might not be in a position to be conversant with procedures of keeping the data as it is very important for BTEP to have well-kept and reliable data.

On the quality of the vocational skills required, the BOTA study found conflicting responses from the graduates in contradiction with the views of their employers. It is very interesting to realise that the graduates felt that the skills they get from the vocational institutions "are adequate to enable them to perform the tasks in their work adequately to the satisfaction of their employers" (Botswana Training Authority, 2010b, p. ix). According to Botswana Training Authority (2010b) 89% of the graduates recommended that the content and the instructional quality they have acquired were very good. On the other hand on the

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same question the employers indicated that the levels of skills brought by the graduates as fair, which means it is not as good as the graduates themselves indicated.

The importance of a relevant teacher training programme is not unique to vocational and technical areas only, it is also very important in the other sectors of education. In this part of the paper, the ideas of relevance is highlighted from the formal sector and narrowed down to vocational and technical education. This is done to express the fact that it does not matter where one is teaching, be it at primary school, secondary school, tertiary level or university level, one needs appropriate preparation. Research in Canada revealed some problems associated with teacher education. Some of the problems stated were that the curriculum design too often reflected teacher educators' interests rather than teachers' needs (Shapiro & Kilbey, 1990). On top of that, in their study to find out the relevance of teacher training to environmental science, Dunn and Dunn (1998) found that there was an absence of an understood and agreed pedagogical approach to work with teachers in the curriculum. These authorities believe that the agreed pedagogical approaches are good for preparing teachers for the subject. Before the implementation of BTEP, stakeholders were consulted. Teachers, principals and learners (both current and potential) are among the stakeholders who were consulted and they were very influential in the incorporation of Key Skills in the curriculum (Swartland, 2008). This was a positive move since failure to do so mean that the system would have "failed to play an important role in exploring new concepts of teacher training" (Dunn & Dunn, 1998, p. 274)

Another aspect is that of "too great a focus by teacher educators on knowledge transmission without sufficient, if any, use of research-led, learner focused, or interdisciplinary approaches" (Kyburz-Graber & Robottom, 2006, p. 274). To further explain this point, Pettigrew & Somekh stated that the skills that are important in teacher-training "demands that pupils acquire qualities of responsibility, initiative and entrepreneurship, skills

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of problem posing and problem solving, and a capacity for synthetic and holistic thinking" (cited in Kyburz-Graber & Robottom, 2006, p. 275). BTEP has been designed in such a way that the most dominant method of teaching will be constructivism among other related methods (Richardson, 2009; Swartland, 2008). These are teaching methods which support learner-centredness and outcomes-based learning. Research has shown that technical and vocational teachers are unqualified and are mostly familiar with other methods such as the teacher-centred approach (Richardson, 2009). As the training of teachers was not adequately carried out it means there was shortage of qualified teachers on the learner-centred methods. This means that the quality of BTEP was greatly compromised.

This study therefore sought to assess the relevance of the qualification of the Diploma in Technical and Vocational Education teachers from Francistown College of Technical and Vocational Education in the teaching of the Botswana Technical Education Programme. It is very important to check the relevance of the content of the DTVE programme. If the graduate teachers are not in a position to implement the skills they have learnt during their training, then the credibility of the programme may be questionable as a suitable programme to train teachers for BTEP. It also important that the teacher-trainees are convinced that the DTVE curriculum is relevant to their training and that the learners they are going to teach are convinced likewise because if it is not like that it might affect the way they approach their subject and at the end affect job performance (King & Kotrlik, 1995).

Statement of the problem

Teacher training in technical and vocational education in Botswana has had challenges since Independence. Many recommendations (Basupang, 2008; Mhizha, 2012; Republic of Botswana, 1993) seem to have had faith that FCTVE teacher training might solve many of the challenges. My area of interest for this study therefore was to find out if the

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problem of the poor quality of teacher training has been solved. The aim was to find out if teachers who have graduated from the FCTVE have added value gained from their pedagogical training.

The intention of this research, therefore, was to establish whether teachers who possess Diploma in Technical and Vocational Education are relevant to the implementation of BTEP. In particular, the research sought to find out whether these teachers were well trained in the application of the methodologies recommended to be used within BTEP. According to Basupang (2008) BTEP is modular and competency based. The traditional modes of delivery were discouraged as they did not meet the labour market's requirements and are not adequate to most learners. The modes of delivery that are emphasised for BTEP are flexible and competency based. Furthermore, the recommended deliveries should be adaptable and responsive to new technologies (Republic of Botswana, 1997). The National Policy on Vocational Education and Training makes it a requirement for e-learning and distance education to be included in the offering of BTEP. It is on the basis of these recommendations that the research sought to ascertain if the teachers themselves are trained to handle these requirements.

Purpose of the study

The purpose of this qualitative study was to explore the relevance of the Diploma in Technical and Vocational Education (DTVE) programme in preparing teachers to effectively teach Botswana Technical Education Programme (BTEP) in Technical Colleges using a phenomenological design resulting in a description of theme or patterns. The central concept purpose was to investigate the role of teacher training provided by Department of Technical and Vocational Education and Training (DTVET) at Francistown College of Technical and Vocational Education (FCTVE) in terms of its relevance in training the teachers who are

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effective in offering BTEP. The study included in-depth interviews with DTVE graduate teachers and Head of Departments (HoDs) who are currently supervising teachers teaching BTEP. The teachers who were interviewed were also observed teaching. HoDs were chosen because they are directly involved in overseeing the implementation of BTEP by being the immediate supervisors of the teachers. On the other hand the DTVE graduate teachers were chosen because they are at the centre of the BTEP implementation process by offering it to the learners.

Research objectives

Creswell (2002) defined research objectives as "a statement of intent that specifies the goals that the investigator plans to achieve in a study" (p. 128). Research objectives, like research questions, are in smaller segments that together define the final outcome of the study. The objectives were as follows, to:

1. Determine the perceptions the DTVE graduate teachers have about the relevance of their Diploma in Technical and Vocational Education programme.

2. Find out the perceptions of Heads of Department about the relevance of the DTVE programme.

3. Identify what the instructional practice shows about the relevance of the DTVE programme.

Research questions

A research question is the most important question the study wants to answer by way of research. It is essential that after the literature has been reviewed, one might look back to establish if it is still viable to continue with the research (Wilmot, 2009). If the researcher chooses to continue with the research, they should develop the research questions. Well-

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developed research questions "increases the probability of asking the right questions, and therefore, collecting the appropriate data" (Congdon & Dunham, 1999, p. 2). These questions guide the researcher into what exactly they should be focussing on when they structure the data collection instruments. Therefore a lot of effort should be put into their formulation to make sure that they cover all the areas the research wants to cover. As Merriam and Simpson (2000) put it, no matter how much the researcher puts a lot of effort in the field collecting data, if the research questions are poorly formulated, they might compromise the outcome of the research. All aspects of the data collection are determined by the research questions.

For the researcher to establish this, the following research questions were used to guide the study:

1. What are the DTVE graduate teachers' perceptions about the relevance of their Diploma?

2. What are the perceptions of the Heads of Department of these graduates about the relevance of the DTVE programme?

3. What does the instructional practice show about the relevance of the DTVE programme?

Significance of the study

Teacher training in DTVET with its ability to impact on the effectiveness of the delivery of BTEP has not adequately been researched on. Therefore the study will contribute to knowledge on the subject in general as the intention of this study was to gain a better understanding of the perspective of DTVE in conjunction of the delivery of BTEP. The study would contribute literature on teacher training in VET and BTEP at the same time. The

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benefit of this study would not only be exclusive to Botswana but to the world of TVET in general. Furthermore, the study would be an eye opener to stakeholders in vocational education and training such as the Ministry of Education and Skills Development (MoESD), industry, teachers and parents as they would be in a position to propose the training of teachers which is in line with the policy which is implementing the delivery of BTEP. In that way the policy-makers would be informed decisions-makers in future policy formulations. This study would add value to the Dakar Framework for Action (2000) thinking which stated that not only basic education be learned by today's learners but acquisition of learning skills and knowledge for gainful employment and full participation in country's society is also essential. BTEP was designed to improve the learners' capabilities in preparation for the world of work in industry (Botswana Training Authority, 2010b; Mhizha, 2012). This goal could be achieved through teachers who teach using the prescribed BTEP methods. The output of this study could be used as a source of material that the teacher-trainers can assimilate and disseminate into their training techniques. Therefore the study stands to benefit Botswana in improving the quality of teachers in DTVET. It also can help benefit DTVE during the review phase which is still to be carried out. And finally, the study benefited the researcher in the quest to complete a dissertation.

Limitations of the study

There are 7 Technical Colleges in Botswana which the study could have covered. Out of these four of them, Gaborone, Maun, Palapye, and Selibe-Phikwe Technical Colleges, were selected for data collection.

The literature on BTEP and DTVET teacher training is very limited which made the study to sometimes rely on non-scholarly sources such as newspaper clips and brochures which compromised the quality of the study. Some information was based on studies from

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other countries whereby their situation might be different to that of Botswana. On the other hand neighbouring countries to Botswana have different technical education programmes to BTEP which makes Botswana unique with such a programme.

According to Botswana Training Authority (2010b) and Mhizha (2012) data bases from DTVET and its institutions are not up to date and in some instances are not in existence at all. The researcher wanted to use data bases for sampling. These were not up-to-date and this made sampling and identifying respondents for study much more difficult. Botswana Training Authority (2010b) had found out that some institutions had previously not felt at liberty to share information with researchers. They also realised that the databases were not updated regularly, which meant that the information they provided was out of date and in that way some potential respondents were not traceable. The researcher ran into this situation, and this forced the researcher to use unreliable means of sampling and tracing of potential participants.

The researcher planned to use respondents from different specialisations. As the participants volunteered to participate in the study, some specialisations suffered as they did not show interest. Some specialisations such as Hospitality and Tourism greatly outnumbered other areas. Some areas were not running BTEP at the time of this study and therefore, classroom observations could not take place.

Delimitation of the study

The researcher limited this research to teachers and HoDs only. It should have been better if other stakeholders such as learners, Principal Technical Education Officers (PTEOs) and college principals were involved. Learners would have also been essential as the recipients of BTEP. Swartland (2008) has emphasized that PTEOs were involved in the

writing of the BTEP teaching and learning materials and therefore their input would have been critical. The college principals as overseers of BTEP implementation processes would have been in a good position to provide much needed information.

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Chapter 2 - Literature Review

Introduction

This chapter covers the policies which directly affect the functions of the Department of Technical and Vocational Education and Training (DTVET) and the running of the Botswana Technical Education Programme (BTEP). It outlines teacher training in TVET which leads to the establishment of FCTVE. This chapter also considers the different teaching methods which were recommended as suitable to be used in a technical and vocational training programme during the teaching of BTEP. Some of these methodologies recommended for BTEP are highlighted as a programme that was to be "designed to be delivered flexibly in a variety of modes to a wide range of different learners using individualized, constructivist methodologies" (Richardson, 2009, p. 4). Both formative and summative assessments have been covered as they are the main forms of assessing BTEP learners. Furthermore, it includes the learning styles or learning preferences suitable for the DTVE and BTEP modular style of teaching as well as motivation as it was essential in the teaching of BTEP. E-learning is also covered as it is one of the encouraged learning methods.

Policies that influence Technical and Vocational Education in Botswana

Some policies have been very influential in the development of TVET and its structures. Some of these policies are covered below as well as their importance in the affairs of TVET.

The Revised National Policy on Education (Republic of Botswana, 1994) has been one of the most important policy documents that led to the formation of many subsequent policies on education in Botswana. The Revised National Policy on Education (RNPE) itself

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came as a result of the Report of the National Commission on Education of 1993. The Report of the National Commission on Education of 1993 had different terms of reference, amongst those being "to review the current educational system and its relevance; and identify problems and strategies for its further development in the context of Botswana's changing and complex economy" (Republic of Botswana, 1993, p. v). This mandate provided evidence that the Government of Botswana realised that some educational programmes were not relevant to the direction of Botswana's economy. At that time, the Government of Botswana realised that vocational education was very important to the economy of the country. This was captured by one of the terms of reference which paved the way for the possibility for the vocationalization of the secondary school programme (Republic of Botswana, 1993).

One important aspect about the RNPE was the recommendation that there should be a National Training Policy which was supposed to be formed immediately. This recommendation gave birth to the National Policy on Vocational Education and Training (NPVET) of 1997 whose mandate was to devise and give direction to the future of vocational education and training in Botswana (Republic of Botswana, 1997). The National Policy on Vocational Education and Training also led to the introduction of BTEP (Richardson, 2009).

The RNPE made a very important recommendation to the effect that there should be a Vocational Teacher Training College (VTTC) which was later formed and became the Department of Teacher Training at FCTVE. The RNPE clearly outlined the importance of vocational and technical education teacher training as it stated that in-service teachers should be provided pedagogical training. It also recommended that University of Botswana should help with the training of trainers for this teacher training (Republic of Botswana, 1994).

In that way through the RNPE the Government of Botswana committed itself to improvement and expansion of vocational and technical education. The Government planned to do this by the provision of programmes and policies which would focus on the emphasis of

higher quality of human capacity and productivity, leading to a better quality of life and prosperity for all. The RNPE was implemented in a way that it would take a time frame of 25 years. This is so with the aim of implementing short, medium, and long term plans (Botswana Federation of Trade Unions, 2007).

One important body of education which came as a result of the RNPE is the Tertiary Education Council (TEC). TEC was initially recommended by the Report of the National Commission on Education (Republic of Botswana, 1993) and then endorsed by RNPE (Republic of Botswana, 1994). In 1999 the Tertiary Education Act supported TEC's existence which led to its establishment (Tertiary Education Council, 2005). The Tertiary Education Council was formed as a result of a concern that was raised by the RNPE of 1994 which outlined that the tertiary education sector lacked policies and as result there were difficulties for different structures to co-ordinate (Republic of Botswana, 1994). The Government of Botswana was also at a stage where it recognized tertiary education as an important educational sector which was very crucial to the economy. The Tertiary Education Council's main aim was to define the vision, direction, organization, funding strategy and levels and the regulatory framework for modernizing tertiary education (Tertiary Education Council, 2005). One of its main functions was to accredit tertiary education courses starting from Diploma level upwards. This meant that it would be responsible for the accreditation of the DTVE programme since it was a diploma course.

In order to perform these mandates TEC needed some guidelines through which they will run tertiary education. This led to the Tertiary Education Policy which was approved in 2008 to support the Government's economic strategy of diversifying the economy from minerals to that of human skills (Republic of Botswana, 2008b). One important aspect which was supposed to be addressed by this Policy was the issue of quality and relevance. There was a concern that the new graduates could not find employment and the reason being given

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by employers was that the graduates were not work ready and there was need to "realign the current programme offerings with the needs of the nation" (Republic of Botswana, 2008b, p. 2). This Policy was intended to "increase the relationship between the tertiary graduates, the stakeholders, and the employers in relation to the needs and the wants of all parties" (Republic of Botswana, 2008b, p. 8). Though implemented, the Tertiary Education Policy has had some deficiencies which were not directly addressed. The strategies for implementing the Policy are not well documented. For example when one looks under the section of amalgamation of colleges of education, FCTVE is not mentioned.

The Botswana Training Authority (BOTA), a parastatal organisation, came as a recommendation by the Vocational Training Act of 1998. It was established because it was felt that vocational education was not compliant with any regulations and because the quality of some of the skills produced by vocational education did not meet the needs of industry. Therefore it was with this regard that BOTA's main aims were to co-ordinate vocational training in terms of funding and the appointment of trainers and assessors. BOTA was to ensure that "training delivered is of suitable quality for Botswana in order to provide relevant and quality skills contributing to sustainable development and national economic growth" (Dubois et al., 2010). BOTA was established in 2000 under the Ministry of Labour and Home Affairs. However, BOTA's role seems to have increased from its original formational aims to the current situation as tremendous changes have happened to the organisation. One of the major changes was in 2010 when BOTA was transferred to the Ministry of Education and Skills Development.

However in 2013, BOTA was transformed into Botswana Qualifications Authority (BQA) taking on some of the functions formerly undertaken by the Tertiary Education Council (TEC) (Sunday Standard, 2013). Under the old system BOTA regulated vocational education up to certificate level while TEC monitored from diploma level upwards

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(UNESCO, 2012). Under BQA education and training will have the same regulator (Botswana Daily News, 2013). The BQA will set both teaching and learning standards for education and training to ensure that there are comparable standards which are internationally recognised (Botswana Daily News, 2013). One of the mandates of BQA is to make sure that the education and training system maintains skills which are responsive to the needs of the economy (Botswana Daily News, 2013). This is very important since it ensures that if BTEP or DTVE are not implementing what they were supposed to do, it is the responsibility of BQA to take action. BQA can withhold accreditation or even order the institution to close down (Botswana Training Authority, 2010a). The question of programme relevance is therefore a key part of the BQA's mandate.

The National Policy on Vocational Education and Training (NPVET) came into effect as a result of the recommendations from the 1994 Revised National Policy on Education (RNPE). It was passed by parliament in 1997. The purpose of its formation was to concentrate on the training system, which was at that time embedded in the general education even though the two were distinct in nature (Republic of Botswana, 1997). Therefore, the creation of the NPVET was to "provide a clear direction for the future development of vocational education and training" (Republic of Botswana, 1997, p. 4). The Government of Botswana saw training as very much compromised and saw some gaps which needed to be filled. The Government envisaged the future growth of the economy would "rely on the ability of the nation's workforce to apply advanced production technology and respond to changing demands of industry" (Republic of Botswana, 1997, p. 4). This type of vocational training for the economy was to include both the formal and informal sectors of the economy since the government recognized that the skills of the workforce were to be sharpened in order to meet the ever changing landscape in the skills demands of the country, and the statistics showed that these rare skills are being imported at that particular moment (Republic

of Botswana, 1997). Thus, the purpose of NPVET was to make vocational school leavers employable and to insure initial training to these graduates to enhance their opportunities for employment and self-employment. This went hand-in-hand with Botswana Federations of Trade Unions as they recommend that "Vocational training should take the form of training for social demand as well as emphasize training that loops people in self-employment when they cannot be absorbed in the formal sectors" (Botswana Federation of Trade Unions, 2007, p. 14). However, this initiative seems not to have been addressed by the formation of the NPVET as evidenced by the statements made by a much later paper when it confirmed that the education system in Botswana was very formal and too much oriented toward the academic achievement even though there has been proof that this has contributed to unemployment since it does not help in the diversification of the career choices for the learners (Swartland, 2008). This knowledge was shared again by the National Youth Policy which stressed that there is need to diversify education and training in order to offer the youth knowledge and skills which could be marketed better (Botswana Federation of Trade Unions, 2007)

On the other hand, even though there were a lot of training institutions in the country, the RNPE realised that there was no regulating body for vocational education and training; therefore, it was essential for the NPVET to come into being as a necessity (Republic of Botswana, 1997). One interesting reason why the NPVET was created was the issue of teacher training within the vocational and technical setup. The National Policy on Vocational Education and Training document clearly stated one of the problems that face Technical and Vocational Education and Training was that:

> Teacher training standards have not met the quality required. Some of the reasons are the lack of clear policy on teacher training and career structure for teachers of vocational education and training. A clear teacher training policy with associated career structure will attract teachers of high calibre and boost morale of existing teachers (Republic of Botswana, 1997, p. 7).

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This particular observation has been made in many documents but it seems it was never solved.

Teacher training in TVET

The issue of unqualified teachers in TVET is a worrying factor in the whole world. Countries with a strong vocational and technical background like China upgrade the status of their teachers. The Chinese have even proposed to introduce a Masters Degree programme for the TVET teachers. On the other hand international organisations such as UNESCO are also worried and have organised various discussions to address this subject. This is evidenced by the fact that UNESCO (2012) stated that "Qualified and motivated teachers and instructors are key for effective learning and are at the heart of TVET quality" (n. p). UNESCO (2012) argued that there was a lot to be done like the provision of "effective policies and frameworks aimed at professionalizing TVET staff and improving their development, living and working conditions are considered essential measures..." (n. p). Teacher training in TVET needs to be improved so that the teachers could teach their learners the relevant materials using up-to-date instructional methodologies. This is very important because countries need a well-trained human resource. In Namibia the Government proposed to aim to "equip current and future vocational instructors/teachers with the necessary methodologies to transfer vocational knowledge and skills to potential vocational trainees" (Polytechnic of Namibia, n.d).

It is important to have qualified instructors because "the extent to which teaching staff uses innovative and learner-centred methods depends on their education and professional qualifications" (Dubois et al., 2010, p. 17). For instructors to have an appropriate qualification, they have got to have a relevant training programme. How instructors are

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trained is very important to their future performance on their jobs because they should always try to reflect on their own training.

The question of not having qualified vocational and technical teachers is not only prevalent in Botswana, it is of international concern. The Ministry of Education in Malaysia pointed out that their vocational education needed to be improved as there was an "urgent need to address the quantity and quality of vocational teachers" so that they could possess "informed professional practice, one should possess knowledge of subject matter, knowledge of learners and knowledge of teaching" (Bünning & Zhao, 2006, p. 20). Another study in China realized that "an overall improvement in vocational skills for employability and citizenship could only be realized if there was an improvement in the quality, effectiveness and relevance of teaching" (Bünning & Zhao, 2006, p. 20). This was in line with what Razzaly, Kaprawi, and Spahat (2010) opined when they suggested that vocational and technical teachers should adapt to changes that take place in their professional work in the future. They suggested some central issues like the fact that vocational and technical teachers would need to change as the role of the teacher changes and should also change the method of instruction. There has been evidence that the achievement of learners revolves around their ability, their effort, and most importantly, the instruction given to them (Razzaly et al., 2010). This was in line with the findings in China which stated that the developing world as well needs to emphasise more on improving the:

> capacity of technical and vocational education and training (TVET) systems, in recognition of the important role TVET plays in equipping individuals with relevant skills and knowledge for the job market. TVET can also better enable individuals to participate in social, economic and technological innovation processes (Bünning & Zhao, 2006, p. 17).

As much as different scholars agree that TVET teachers needed to be trained, they also agree that these teachers were different from other teachers and in that way they need to be trained differently. This is due to the fact that there were transformations in technology as well as

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the types of graduates demanded by the job market based on the needs of the economy (UNESCO, 2012).

The situation in Botswana is not different. The Government of Botswana had long recognised that TVET needed trained teachers in their institutions. Under National Development Plan no. 10 (NDP 10) (Republic of Botswana, 2009), one of the aims which were directed towards the improvement of TVET was

> to improve access to high quality technical and vocational education and training (TVET), with a view to producing a competent, innovative and internationally competitive National Human Resource with ability to contribute to the socio-economic and technological advancement of the country, the creation of employment, the reduction of inequity and engaging those affected by poverty (p. 108).

Through this, the Government of Botswana saw TVET as an area that could improve the supply of skills to industry and in that way improve the economy (Bransford et al., 2000). The characteristics of Botswana TVET teachers were described by UNESCO (2012) to the effect that "most teachers in Public Technical Colleges have both an occupational/technical qualification and a teaching qualification, while a majority of registered trainers in Brigades and private institutions only possess a technical qualification" (n. p). This was the case of only those who were registered with BOTA. If one may include those who have not registered, the situation could be much different.

Even though governments and organisations across the world have long mentioned that teachers in TVET need to be trained, there seems to be very little on the ground that was done to this effect. Even in situations where TVET teacher training was available, it was realised that these teachers did not receive adequate training. Studies such as the one in Kenya found out that vocational teacher training emphasized more on practical skills and knowledge as opposed to teaching methodology (Republic of Botswana, 1994). This situation as a result produced teachers who just transmitted knowledge, but could not change the way they taught when it was necessary. On the other hand most of the DTVET teachers

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were not multitalented. They were usually conversant with one area. It would be much more appreciated if they were multi-skilled. Razzaly et al. (2010) opined that "a vocational teacher who has a research activity, providing advice and services in his area of expertise and performing lecture and workshop activities will be able to produce quality learners" (p. 20-21).

Establishment of FCTVE teacher training

Technical and vocational teacher training in Botswana has been having problems for some time. As early as the 1970s, Government of Botswana realised that it was necessary to provide "pre- and in-service training for the brigades' professional personnel" (Ulin, 1974, p. 192). In the 1973 – 1978 National Development Plan (Republic of Botswana, 1973) it was suggested that there should be a three-year staff development project that was going to take place at the new Vocational Training centre, the Botswana Training Centre and the Serowe Brigade Centre. In addition to that some brigade staff would be sent for training in other African countries (Ulin, 1974). This was in response to the acknowledgement that there was shortage of professional manpower in the brigades which badly affected the quality of programmes offered by the brigades at that time.

When one looks at teacher training provided by both BRIDEC and Botswana Polytechnic in the past it has long been realised that "there is lack of information dissemination on new technologies and methodologies because of lack of structures and adequate training personnel" (Kewagamang & Malete, 1994, p. 9). As the world goes forward, technology also improves. This means that the teaching field should also change as there are now newer and more efficient methods of passing information. Kewagamang and Malete (1994) also stressed that departments that are dealing with institutions providing technical teacher-training were often small and not much was done to make them grow. There was also no

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clear guideline for in-service training of teachers of vocational and technical teachers. On the other hand vocational training teachers lacked relevant industrial or work experience (Republic of Botswana, 1993).

In recognition of these problems, the Government decided to establish a combined technical and vocational teacher training institution in Francistown. This was as a result of recommendations made by many stakeholders. For instance Harvey, Karow, Molosi, Muller, and Tempest (1993) recommended that:

> Expand and increase the existing teacher training facilities and/or establish a new Technical Teacher Training College (TTTC), for the purpose of implementing both vocational and prevocational education and training (p. 138).

The Government took notice of the call and planned to have such a college as mentioned in the RNPE of 1994. The idea was later mentioned again with the aims "to provide pre-service training for teachers / instructors in the TVET sector" and "to provide in-service, staff-development training for the persons working in the TVET sector" (Republic of Botswana, 1997, p. 138). This idea was included yet again in National Development Plan 9 (Republic of Botswana, 2002) with an additional task of making sure that during training the teachers should be equipped with skills that will enable them to successfully run distance learning mode with the aid of e-learning.

It was finally recommended that the Botswana Training Authority was to be given the mandate to establish the Vocational Teacher Training College (VTTC) on appropriate attractive salaries and condition of services. There was also a decision to build a VTC alongside which could provide a site for teaching practice and skills upgrading. Vocational instructor training activities of Botswana Polytechnic and BRIDEC were to be transferred to the new college upon completion (Republic of Botswana, 1993). According to Harvey et al. (1993):

> The institution must train vocational training teachers who will have the professional responsibility of teaching theory and demonstrating practice in different learning

> places. They should also teach the whole range of trade theory and associated studies in a vocational field (p. 178).

As a result of these recommendations the Francistown College of Technical and Vocational Education (FCTVE) was constructed from 2004 and completed in 2007. The college was opened in 2008 and is now operational. The college has a technical wing as well as a teacher training wing. The technical wing was established so that it should offer teaching placement for the student-teachers of the teacher training wing.

One interesting subject about the teacher training wing is that it did not start when the college was opened in Francistown. It was moved from Gaborone where it had been operating as the College of Technical and Vocational Education (CTVE) from 2001. When CTVE was moved to Francistown toward the end of 2007, it became the Department of Teacher Training within FCTVE.

The African Development Bank (2009) emphasized that FCTVE teacher training programme should focus on the:

> professional development and management of teachers to implement the curriculum so as to achieve the sub-sector goal as well as achieve improved quality of the education and training sector. Expansion of the education system, introduction of new subjects has increased demands on appropriately qualified teachers (p. 18).

There was evidence that DTVET teachers needed to have their skills upgraded so that they could effectively deliver the BTEP curriculum. The reason being that there was an introduction of new subjects within the curriculum which teachers might find challenging. The teacher training would also broaden their knowledge of a curriculum with diversified skills accompanied by improved innovation and creativity which is focussed on the economic needs of the country (African Development Bank, 2009). This programme will in turn "provide coherence, clarity, diversity, improved quality of learners and optimized resource utilization (rationalization) and provide capacity building of the DTVET through training of TVET teachers and staff" (African Development Bank, 2009). The teaching of these teachers will emphasise the "development of strategies for optimal usage of ICT and technology based

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learning and training" (African Development Bank, 2009). Despite this, there is very little that has been done in terms of research that has been undertaken to evaluate FCTVE activities since its establishment.

DTVE programme structure

The DTVE programme was designed to be an eighteen months long fulltime course. The programme has 10 modules which carry 60 credit values (Basupang, 2008). Each credit value is equivalent to 30 hours study time. Table 1 below shows the core modules of the teacher training programme:

Table 1: DTVE modules

Code	Module title	Credit value	Module synopsis
DN01	Assess learners' needs	6	Organise and carry out a learning needs analysis and provide learner assistance.
DP01	Plan for effective learning	6	Effectively prepare lesson plans
DP02	Prepare resources to support learning	6	Preparation of materials and facilities to ensure that learning is maximally supported
DF01	Facilitate effective learning	8	Teaching practice module.
DS01	Provide learners with support	4	Equips student-teachers with skills of supporting learners academically and socially.
DA01	Assess learning	4	Different assessment methods and using them effectively.
DA02	Evaluate learning	6	Ways of evaluating lessons and resources used during the lesson.
DE01	Reflect upon the roles of a teacher	6	Philosophy of education.
DE02	Improve own professional practice	8	Critical self-evaluation, create action plans for personal and professional development and maintenance of effective working relationships.
DE03	Undertake action research	6	Action research project and write a comprehensive report of the research with a view to improving teaching skills.

TOTAL CREDIT VALUE = 60. NB: 1 credit value is equivalent to 30 hours of learning

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The modules are introduced separately at the beginning and then run concurrently towards the end of the programme which might be very challenging to both the teachers and the learners. In addition to the modules listed above there are Key Skills modules which are integrated into the ten modules during teaching and evidence collection. These are: Personal and interpersonal skills; Information and communication technology, ICT; Communication skills; Numeracy skills; Quantitative data processing skills; and Improving own professional performance. These generic modules are incorporated in the learning activities of the core modules.

The learners who are admitted in the DTVE programme should normally possess a diploma or first degree in a vocational field. These can be teachers who are already in the field teaching technical or vocational trades but who do not have a teaching qualification (in-service) or those people who are currently not involved in teaching but possessing a technical or vocational qualification (pre-service).

The DTVE teaching mode

The DTVE programme is designed to be taught in such a way that it imitates the structure that is required by the BTEP. Like BTEP it is a learner-centred programme which is based on constructivist learning theory. It also emphasizes the use of ICT as well as e-learning and distance learning. It uses portfolio building as a form of measuring achievement (Basupang, 2008). On the other hand the programme is also modularised and outcomes-based.

The assessment of the portfolios is in line with the Quality Assurance and Assessment (QAA) procedure. The difference between BTEP and DTVE is that in terms of the former external verification is done by QAA which is a unit of the Ministry of Education and Skills Development (MoESD) whereas for the latter it is the responsibility of the University of

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Botswana (UB). The other difference is that for attachment BTEP learners go for Work Placement while DTVE go for Teaching Placement (TP). Within the 18 months of the DTVE programme, TP takes a combined total of 3 months. Learners are attached to colleges or brigades where their vocational subjects are offered. The learners go for TP four times, the first time they are assessed on a cooperative learning only. The second TP is for experiential learning while the third is for individualized learning. There is the third TP which is used to collect any evidence that the learner might have missed during the previous three TPs. During these TPs the learners also collect various evidence for different modules as well.

The DTVE programme is flexible. This is evidenced during TP where the student-teachers determine the time and venue where their assessment should take place. The learners also determine the pace of their progress as they decide the pace at which they collect evidence (Basupang, 2008).

For assessment the learners have to produce portfolios as evidence of achievement. There is a verification outline which acts as a checklist of the pieces of evidence which collectively determine whether the learner has achieved or not (Richardson, 2009). Any learner who has not achieved at the end of the programme continues to collect the evidence through distance learning (Basupang, 2008). These learners keep on being assisted by the teachers until they are competent and are awarded the status of 'achieved'. This type of arrangement creates an extra work load to the teachers who now have to concentrate on the new intake. This also can mean that there might be an accumulation of distance learners if the others do not complete their work on time since the learners are the ones who determine the pace of the programme.

Most of the student-teachers will not be familiar with the portfolio method of assessment as they are used to the idea of writing tests as a measure of achievement. The teachers of the DTVE should be in a position that they introduce student-teachers to skills

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such as portfolio building as well as assessment because they will need to implement the skills when they join the teaching field of BTEP in technical colleges. Some additional skills are embedded in the DTVE programme objectives as to equip student-teachers with skills such as lesson planning, learning resource development, teaching methodologies, assessment and evaluation skills, using outcomes-based and learner-centred approaches, and that the mode of teaching at FCTVE should be exemplary to that of BTEP (DTVET, 2005c). Looking at these arrangements it is therefore expected that the DTVE programme is the relevant programme for training those who teach BTEP.

BTEP flexible delivery methods

According to the National Policy on Vocational Education and Training of 1997, BTEP was aimed at being a pilot programme by which new modes of delivery will be explored. BTEP was planned to be delivered as an Outcomes Based Education (OBE) delivery and assessment method which was a diversion from the traditional teacher-centred method that was common in brigades and technical colleges at that time. The BTEP Guide to Implementation highlighted that indeed the curriculum for BTEP was planned to be flexible in learning and in assessment (Republic of Botswana, 2005). Richardson (2009) also emphasized that the method of teaching should be learner-centred and flexible in delivery in the BTEP learning units. This is in line with yet another document, the National Policy on Vocational Education and Training (NPVET), which indicated that the delivery methods in vocational education use traditional delivery methods which were not suitable for the learners and did not produce the kind of workers who were demanded by the labour market, and therefore the methods have to be changed (Republic of Botswana, 1997). The new methods had to prepare the learners to be adaptable to new technologies (Richardson, 2009). The key assumption is that BTEP should have flexible delivery methods.

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Different authors have found it difficult to define flexible learning as it has no common meaning and it encompasses a lot of approaches. A broad definition of flexible learning is:

> a generic term that covers all those situations where learners have some say in how, where and when learning takes place – whether within the context of traditional institution-centred courses or in non-traditional contexts such as open learning, distance learning, CAT schemes, wider-access courses or continuing professional development (Ellington, 1997, p. 4).

Flexible learning is a learner-centred approach. This approach is a process that includes flexible admission and enrolment processes as well as flexible assessment processes (Collis & Moonen, 2001). This approach is learner-centred as it allows the learner to have greater freedom in the learning and the assessment of the learning units. The teacher also has a choice on the flexible delivery of the learning unit. This has a bearing in the idea that some scholars have defined flexible learning as

> a movement away from a situation in which key decisions about learning dimensions are made in advance by the instructor or institution, towards a situation where the learner has a range of options from which to choose with respect to these key dimensions (Collis & Moonen, 2001, p. 10).

An example of this flexible learning is outlined by Spady (1994) when he opined that the Outcomes Based Education (OBE) introduces flexibility in the teaching and learning process. Furthermore UNESCO-UNEVOC (1996) emphasized that "OBE is a flexible, empowerment-oriented approach to learning. It aims at equipping learners with the knowledge, competence and orientations needed for success after they leave school" (p.18). According to Spady (1994) Outcomes Based Education is explained as "what is essential for all learners to be able to do successfully at the end of their learning experiences" (p. 1). Outcomes Based Education is the type of education where the curriculum focuses on the fact that the learner achieves according to their ability. Spady (1994) explains that OBE implies that what is important is what the learner is able to do, which is the outcome. In Outcomes Based Education assessment of the learner is continuous.

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OBE in BTEP came as a result of the strategic plan of 2001 to 2006 of the Ministry of Education which encouraged the curriculum in DTVET to be changed to fit the one that will enable the graduates to meet the needs of the industry (Republic of Botswana, 2004). BTEP as an OBE fitted well as a programme that would be suitable to align the DTVET curricula to make the graduates to meet the economic requirements of the industry, as an ideal policy of the Government of Botswana. BTEP, as an OBE, meant that it will use a learner-centred approach as a teaching method. According to Mhizha (2012) BTEP was structured in such a way that:

> Facilitation approaches should be learner-centred to enable the learners to acquire the necessary learning experiences and attributes towards effective preparation for the world of work. Essentially, teaching and learning sessions should be activity-based with emphasis on independent study and learners' responsibility for own learning (p. 1).

One of the problems with BTEP is its implementation in the Technical Colleges. Most colleges did not implement BTEP programmes because of many factors. One of the factors was that most teachers were equipped with the traditional teaching modes of delivery as compared to the BTEP mode of the learner-centred approach. However, research has found out that "traditional delivery methods do not meet the needs of the broader profile of VET learners existing in the country" (Richardson, 2009, p. 3).

During the delivery of BTEP, there is a lot of record keeping which should be undertaken. BTEP as an OBE produces a lot of portfolio evidence in the form of documents. Therefore the teachers have to update the progress of such documentation (Mhizha, 2012). This means that the skill of record keeping is essential to all teachers of BTEP. In terms of BTEP, it is essential that teaching and learning lessons are activity-based with emphasis on independent study and learners' responsibility for own learning. This might prove to be very difficult for the teachers who are used to traditional methods of delivery. Therefore, the training for BTEP teachers should be able to prepare them to face such challenges.

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As Mhizha (2012) and Richardson (2009) pointed out colleges were given control over how they should implement the learner-centredness of the programme to make it flexible. Flexible learning approaches are planned in such a way that they contain a variety of learning styles. Learners are different in the way they prefer to learn. They differ in the levels of motivation, prior learning and so forth. It is therefore not easy for the teacher to accommodate every learner's preferred learning style more especially in a large class situation (Sinha & Chaudhary, 2004). Gladdish (2010) emphasized that teachers must also maintain sensitivity to the very personal differences that bring people to the learning situation, which might be a group characteristic. It is up to the teacher to use methods that can accommodate a variety of learners. The teacher does this by reverting to teaching strategies that incorporates a mixture of methods such as lectures, discussion and group work. Qualified teachers are very essential since they are in a position to vary the teaching strategies in order to cater for the different learning preferences of the learners.

There has also been a shift in the teaching techniques landscape in institutions across the globe, Botswana being no exception. Education has moved from a lecture method to learner-centred more especially in the practical fields of BTEP. These learner-centred approaches use activities which encompass such items as inquiry, cooperative learning, project, field trips and surveys of some sort. Teachers who use learner-centred methods are going to be constantly asking questions trying to arouse curiosity and having the learners make decisions. The main question now that arises is whether the teachers of BTEP are following this recommendation since learners have different learning preferences and therefore teachers of BTEP have to put this into consideration (DTVET, 2005a).

The Government of Botswana has since 1977 realised that teachers use teaching methods which were not appropriate to the learners. It recommended then that teachers should move away from the teacher-centred approach to the ones that involved the learners.

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It recommended that teachers in Botswana should prioritise the learners' prior ability and treat them as people who know something and could build on that knowledge (Republic of Botswana, 1977). This was in reference to teachers across the spectrum. In terms of vocational and technical education, a study by Richardson (2009) revealed that traditional modes of programme delivery were widely used but their exclusive application does not always meet the requirements of a modern labour force and were not adequate for certain target groups. There was a need to diversify modes of delivery. It had also been realised that learners would also need the skill of varying methods later in the job market because they would have to adapt to different situations (Reid, 1995). The DTVE programme also emphasized on the inclusion of teaching methods in their curriculum. For example, the DF01 module stated that the module should stress "on how to effectively implement planned learning sessions for the teaching of individual, group and experiential learning" (DTVET, 2005b). In another module, DN01, it is stated that these were the methods appropriate for BTEP teaching (DTVET, 2005a). Some learning methods which were labelled as appropriate to BTEP are discussed below.

Constructivist learning

Constructivist learning has been recommended for the teaching of BTEP (Richardson, 2009). This learning has been developed from constructivism philosophy. Constructivist learning may be defined as an "ideology that places emphasis on the meaning and significance of what the child learns, and the child's active participation in constructing this meaning" (Selley, 1999, p. 6). An important description of constructivist learning is that knowledge is not passively received, it is actively constructed. Vygostky (1978) pointed out that knowledge itself is not absolute and unchanging; it is a social construct that is developed and learned through social interaction. The concept in constructivist learning is that

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knowledge is not fixed. It is shaped, constructed and re-constructed in different social contexts and at different times. In particular, Vygotsky stressed that the development of cognition in learners is related to the social construction of knowledge. Both constructivist learning and constructivism involve constructing and passing on values, information, and ways of understanding through social interaction (Donald, Lazarus, & Lolwana, 2007).

Wilson (cited in Rainer, Guyton, & Bowen, 2000) has defined constructivist learning as "a place where learners may work together and support each other as they use a variety of tools and information resources in the guided pursuit of learning goals and problem-solving activities" (p. 2). Furthermore, it has been realised that in constructivist learning learners construct knowledge and meaning from their experiences. In other words it can be said that in constructivist learning the learners are active and therefore they construct ideas based on what they currently know and understand. Learning is socially mediated and is situated in the real-world of the learner (Merriam & Caffarella, 1991). Research shows that in technical and vocational education constructivist learning is dominant (Chappell, 2004; Kerka, 1997). In terms of teaching strategies it includes activities such as "small group work, discussion, debate, practical problem solving, the presentation of alternative perspectives, sharing of information, reflective practice, cognitive apprenticeships, modelling, mentoring and coaching" (Chappell, 2004, p. 4). In constructivist learning the activities engage learners into working together. There are four stages involved in this type of learning. The first stage is where planning or preparation takes place. In this stage the teacher starts by acknowledging what the learners already know about the subject at hand and plans to build on it. During the second stage the teacher helps the learners to build on their existing information. In the third stage the teacher and the learners make a relationship between the learner's current knowledge and the newly acquired knowledge. And then at the final stage the learners have acquired new knowledge by building on the previous understanding and at this moment this

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knowledge is assessed. In this way learners are said to have constructed new knowledge (Faraday, Overton, & Cooper, 2011). The main aspects that differentiate between traditional learning and constructivist learning are outlined in Table 2.

Table 2: Differences between traditional and constructive pedagogy

	Traditional	Constructive
Teacher	A judge, a speaker, an expert	Trainer, instructor, expert, learner
Pupil	Passive, listener, a reproducer	Active participant, constructive
Content	Divided into subjects, abstract, comprehensive	Integrated interdisciplinary, authentic
Evaluation	Selective qualifying	Diagnostic, portfolio-based
Learning environment	Big steps, little interaction, few sources of information, many instructions	Small steps, a lot of interaction
Didactical	Didactical triangle: a teacher, a pupil and the subject	Didactical polygon – a teacher, peers, task, media, a discipline

Adapted from "*101 ideas for innovative teachers*" Microsoft Hungary (2006)

FCTVE has to be in a position to prepare teachers who are comfortable with implementing constructivist learning to offer BTEP. Some scholars have hinted that constructivist is not easy to implement (Rainer et al., 2000; Thomas, 2010). This is, as an example, because in constructivist learning the class size has to be small so that the teacher is able to pay attention to every learner, and in most cases classes are large in size. Another being that most teachers are familiar with the traditional teaching method and the education sector seem to be failing to prepare them for other methods such as constructivism. The good thing about constructivism is that, like BTEP, it focuses on assessment that has portfolio based outcomes which can be measured and quantified (Thomas, 2010).

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Cooperative learning

Cooperative learning is one of the methods that are offered to TVET teacher trainees as preparation for teaching BTEP. If one looks at group work as one of the elements of cooperative learning, one may realise that it requires an environment where learners work together to solve a problem at hand. Each member in the group contributes and in that way it yields better results than if it was done by an individual. In fact the group work has empowered the learners to investigate what is of interest to them (Sharan & Sharan, 1989). In the cooperative learning method, all learners in a group have to play and achieve their role for the benefit of all for the learning outcome to be accomplished (Johnson, Johnson, & Stanne, 2000). In other words, those who advocate for cooperative learning believe that a group of learners working together can achieve much more than what an individual could attain.

The cooperative learning method has been drawn from the work of Slavin (1995). He came up with some elements of this method. In the first element he mentioned that there is what he called positive interdependence between the learners. In the second element he acknowledged that the learners have face-to-face interaction. Then there is individual accountability. During these small group discussions the learners need to have group discussion skills and finally, there is a sort of group evaluation in order to get better in terms of efficiency (Johnson et al., 2000). Table 3 shows a cooperative lesson being compared to a traditional (frontal) lesson.

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Table 3: Types of pedagogical tasks in the learning process

Aspects	Frontal lesson	Cooperative lesson
Style of preparation	Review the topic - A logical lesson plan, (audio) visual aids, questions with possible answers, checking logical structure of the lesson, planning a one-track interaction	Review the topic – how to make it cooperative: Division into lesson parts, writing texts, making visual aids, photocopying, planning, multilateral interactions
Preparation time	Probably less	Probably more
Beginning of lesson	Motivation: getting the interest of pupils in some way	Rearranging the furniture, forming groups, motivation: builds on the background, knowledge of pupils, handing out responsibilities
Support during the lesson	Explanation, question, answer frontally, joint discussion	Assisting small groups, and individuals (personal style)
Movements of teacher	Little movement, may be stationary in a conspicuous place by the blackboard	Teacher walks among groups, bends towards a pupil, may work together
Voice	Everybody should be able to hear, so it must be loud	Speak in a low voice; personal tone
The most needed features	Good rhetoric skills - Effective communication to keep the attention of pupils, be a good disciplinarian, accuracy, explanative skills, display a gift for "acting", continuous concentration.	Good organization skills – Firmness, good sense of time, good communication skills, divided attention, ability to adapt oneself to the message of pupils, open-minded personality, creativity
Evaluation	Evaluation of the achievement of individuals (oral tests, written papers). Evaluation of the behaviour of the whole class	Evaluation of different groups, a range of methods for assessment of individual and group achievements. Development of social skills

Adapted from "*101 ideas for innovative teachers*" Microsoft Hungary (2006)

There are different approaches of cooperative learning. Some of them are: Brainstorming, Jig-saw and Think, Pair, Square, Share. In terms of Brainstorming, the learners are divided in small groups of between 4 – 6 learners. In most cases these are the groups of mixed ability. These groups are independently given a task to solve. The group

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discuss and agree on ways of best solving the problem. Each learner is then given a role that is different from any other learner in the same group to perform. The group report their findings to the whole class mainly by presentations and then the task is evaluated (Abordo & Gaikwad, 2005).

In jig-saw method the learners are divided into groups and normally there are four learners in each group. These are called a home group. Each home group member is attached to a different group, called an expert group. The teacher has divided the topic into equal parts and has handed each expert group its own sub-topic. Each member of the expert team discuss the topic and then go back to the home group where they teach the members what they have learnt from the expert group (Aronson & Patnoe, 1997). At the end all the group members have learnt the material of the topic from each member. There is usually a quiz that checks whether understanding has taken place.

The other method of cooperative learning is Think, Pair, Square, Share. In this method each learner is given a question to think as an individual. This is the Think stage. Then the learner pairs with the neighbour to discuss their findings, which forms the Pair stage. The neighbouring two pairs then join together thus forming a Square to discuss the answer further. Finally the squares Share their answers with the whole class, and that being the final stage of the method (Hassard, 1996; Lundgren, 1994).

These are not the only methods of cooperative learning available, though these seem to be the most common. FCTVE provide knowledge to the graduates on these methods which fit BTEP's teaching methodologies as BTEP itself has a recommendation that stresses that cooperative learning should be used as one of the delivery methods. The study attempted to find out if the DTVE has adequately prepared the graduates to successfully use these cooperative learning methodologies.

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Individualized learning

Even though individualized learning has been recommended as one of the methods to be used for BTEP (Basupang, 2008; Richardson, 2009) it is recognised by some scholars as a teacher-centred approach because it is the teacher, not the student, that provides the core source of information, assistance, criticism and feedback (Chilisa & Preece, 2005). Individualized learning is explained as the method in which knowledge and skills can be transferred to the learner by the teacher (Salomon & Perkins, 1998). A much more precise explanation is brought by Johnson and Johnson (1999) as they state that individualized learning is whereby the learner learns independently of other learners. The learners learn according to their ability and their speed. In this approach, the learners work alone so that they are not interrupted by other learners. The learners are permitted to work far away from each other. It is the job of the teacher to assist each individual learner when need arises. The teacher provides the learner with appropriate materials as each learner is working on a different task from the other learners. These tasks are specifically designed to suit the ability of each learner. In that way the learner is assessed against a performed task rather than against the performance of the class. The benefit of the method is described below as:

> independently focusing on a goal that is not related to another student's goal is known as individualistic learning. This type of learning encourages self-discipline because a student's grade depends solely on the student (Johnson & Johnson, 1999, p. 49).

It is for this reason that learners become happy with their individual performances irrespective of how others have performed in their tasks.

BTEP Assessment

Since the BTEP Implementation Guide of 2005 has indicated that BTEP assessment has to be flexible, it is important for this study to include the element of flexibility of assessment of BTEP (Republic of Botswana, 2005). Assessment is not easily defined

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because it differs from institution to institution. Assessment similar to that of BTEP is best explained by University of Exeter (2014) as "judge performance, measured against intended learning outcomes" (p. 1). This is so because BTEP uses learning outcomes in the Learning Unit Specifications. According to University of Exeter (2014) this type of assessment checks whether there is an alignment between the Aims of the Programme, the Learning Outcomes of the modules and the Method of Assessment. Assessment comes in different forms.

For assessment to be flexible the learners are given an opportunity to have a say on the nature of assessment. It might be the time or the method. In this way flexible assessment is learner-centred (Bennington, Tallantyre, & Cornu, 2013). This type of assessment is possible in cases where the teacher puts into consideration the needs, skill and knowledge of each learner. This is also possible when the teacher has designed the learning process in such a way that individual abilities are incorporated, and then it will be easy to assess basing on the individual abilities (Bennington et al., 2013).

BTEP's assessment procedure is structured into three stages. These are assessment, internal verification which is carried out by the college, and external verification which is carried out by the Quality Assurance and Assessment Unit (QAA) of MoESD. All this is done to make sure that the standards are not greatly compromised. Additional important functions of QAA are to:

> Carry out validation of BTEP qualifications, approve centres to offer BTEP qualifications, register and enrol candidates, arrange for and administer external assessment of candidates, monitor internal assessment through external verification, certificate candidates, and support centres in all aspects of assessment and monitor quality assurance elements (Mhizha, 2012, p. 52).

One notable aspect of the structure of BTEP is that it allows learners to graduate within a shorter time compared to the National Craft Certificate (NCC) programme which took four years to complete (Republic of Botswana, 1998). This might appear contrary to what Mhizha (2012) and Basupang (2008) have indicated which was that BTEP graduates

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would be assessed only if they are ready. Another scholar, Swartland (2008), realised that learners complained that BTEP took long to complete as compared to NCC. This was due to the fact that NCC had a reliable time frame while BTEP was flexible. On the other hand, the learners were not failed until after three trials, which also consumed a lot of time. This means that if a learner fails a task for the first time, they are given two more chances and if they still fail to perform, that's when they can be awarded a fail, which is called 'not achieved' (Mhizha, 2012). This created a dilemma on the side of the teachers who were faced with the tasks of making sure that the learners completed on time.

It is also very important for the delivery and assessment of BTEP to subscribe to the notion of team play. Mhizha (2012) was adamant that "BTEP prescribes teamwork because there is no way that you can complete a learning unit without other people's input" (p. 59). It is natural for some people to want to work alone due to certain reasons, for example, some may not want to share the knowledge they have with others, while some might naturally be individualistic. However, this behaviour would not be good for BTEP as it needs people who understand that teamwork is crucial for the success of the whole programme.

The disadvantages associated with flexible assessment are that it is time consuming because of the discussions with individual learners and in that way it can be easier if the group being assessed is small. It is also taxing on the teacher as well due to the monitoring of the individual learners' progress on different tasks they are working on (Bennington et al., 2013).

There are many different assessment techniques. Two of them, which are recommended for BTEP (Republic of Botswana, 2005) are discussed below.

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Formative assessment

Formative assessment is an ongoing process that takes place during teaching. It is used to gauge the learners' progress so that an adjustment can be made if necessary so that the intended outcome can be achieved (Mhizha, 2012). According to Hidden Curriculum (2013) formative assessment ensures that teachers know their learners in advance and help them in their deficiencies. Different teaching techniques can be engaged to remedy the situation. The teacher gathers information on the progress of the learner on daily basis and makes decisions about the type of intervention necessary. Formative assessment cannot be separated from the lesson because it is part of the lesson (Mhizha, 2012).

Summative assessment

Summative assessment on the other hand is the assessment that takes place at the end of a programme. It tests the cumulative knowledge of the learner. Summative assessment finds out if learning goals and objectives have been achieved (Mhizha, 2012). An example of summative assessment in the BTEP setup is a portfolio which contains evidence that the learner has successfully completed and achieved a programme or a unit.

Learning preferences

On the other hand there are learning styles or learning preferences which should be taken into account when teaching. These learning style preferences are mentioned in the teaching methods module of FCTVE. In this way it is essential for teachers to be aware and to put into practice the learning styles preferred by their learners and at the same time those should be appropriate for vocational and technical education programmes.

For teachers to practice flexible teaching strategies they need to be aware that these methods are varied according to the type of lesson basing on how each learner prefers to be

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taught. This is known as learning preference. According to Reid (1995) learning preference refers to a person's natural, habitual and preferred way of assimilating new information. This has an implication that individual learners differ in regard to what mode of instruction or study is most effective for them. Scholars who promote the learning preferences approach to learning agree that effective instruction can only be undertaken if the learner's learning preferences are diagnosed and the instruction is tailored accordingly (Pashler, McDaniel, Rohrer, & Bjork, 2008).

Omrod (2008) reports that some learners seem to learn better when information is presented through words (verbal learners), whereas others seem to learn better when it is presented in the form of pictures (visual learners). Clearly in a class where limited instructional methods are employed, there is a strong possibility that a number of learners will find the learning environment less optimal and this could affect their academic performance. Felder (1993) established that a relationship between learners' learning preferences and a teacher's teaching style leads to better recall and understanding. The learners need to have a choice on the way they learn so that they have a better grasp of the concepts. The learners' learning styles should be established and used for their benefit. Table 4 shows different characteristics of learners between traditional (frontal) and cooperative learners.

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Table 4: Different ways of learning which require pupils with different characteristics

Frontal teaching	Cooperative learning
Doesn't mind being controlled, Independent	Competitive Cooperative
Quiet	Has good communication skills
Pays attention to him/herself	Good organizer
Having self-control	Self-restraining behaviour
Conformist	Creative
Patient, able to pay attention to a teacher	Patient, able to pay attention to his/her peer
Takes things with resignation	Tolerant
A person short of ideas	Has initiative
Responsible for him/herself	Responsible for others
Ambitious	Helpful

Adapted from *"101 ideas for innovative teachers"* Microsoft Hungary (2006)

This shows that different learners need to be taught differently. For the teacher to effectively implement the learning styles into the lesson, the learning preferences have to be taken into account. There is a variety of ways a teacher can establish the learning preferences of the learners. This is due to the fact that if the teacher applies different learning styles to learners, it can affect the learning outcome significantly (Bedford, 2004).

One of the most common ways to find learners' learning styles is through using the Honey and Mumford Learning Styles inventory. This learning style was a development of Kolb's learning style inventory. Table 5 shows the four learning styles which Honey and Mumford came up with, these are: Reflectors, Activists, Theorists and Pragmatists.

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Table 5: Honey and Mumford learning styles

Name of Style	Description of learning style
Activists	'Here and now', gregarious, seek challenge and immediate experience, open-minded, bored with implementation.
Reflectors	'Stand back', gather data, ponder and analyse, delay reaching conclusions, listen before speaking, thoughtful.
Theorists	Think things through in logical steps, assimilate disparate facts into coherent theories, rationally objective, reject subjectivity and flippancy.
Pragmatists	Seek and try out new ideas, practical, down-to-earth, enjoy problem solving and decision-making quickly, bored with long discussions.

Adapted from *"Kolb learning styles"* (Businessballs, 2015)

It is important for a teacher to know their learners' learning styles. This helps the teacher to be able to help the learners effectively. Teachers who are appreciative of their learner's learning styles are better able to acclimatize their teaching techniques (Chiya, 2003). They do this by catering for all learners, because learners are always different. It also becomes easy for a teacher to develop awareness in the differences which learners bring to the classroom. Some teachers misinterpret poor performance of their learners in a course as lack of knowledge or ability, when it actually may result in difficulty with a particular style of learning for a specific learner (Coffield, Moseley, Hall, & Ecclestone, 2004).

On another note it is important for learners themselves to know their learning styles. The knowledge they have about their own learning styles help them cope and relate well with other learners (James & Gardner, 1995). They learn to tolerate the differences they have as learners. Learners who know their own styles of learning can improve their learning abilities. They can attain better results and have more optimistic approach with reference to their work. They develop better self-confidence, and additional ability in applying their understanding in their courses. The DTVE graduate teachers were exposed to these learning styles in the DN01 module at FCTVE.

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Learner motivation

BTEP uses portfolio building as a form of assessment and learner-centred learning approach. These are not familiar methods to learners who have been subjected to the traditional lecture method of teaching (Richardson, 2009). For teachers to capture and maintain the concentration of the learners, they have to be familiar with the motivational techniques of teaching. The learners also need to be motivated in order to encourage them to participate in class activities like small group discussions and presentations which characterize learner-centred approaches (Booi, 2000).

People are born with the natural desire to discover and act on curiosity. They need to explore and understand their environment in which they live. These environments shape learners' beliefs about their ability to learn. If the classroom environment is not conducive for learning learners lose their passion and drive for learning (Lumsden, 1994). As they lose interest in learning, the teachers need to motivate them into learning.

Learners are motivated in two ways: extrinsically and intrinsically. Intrinsic motivation comes from the desire to learn within the learner. This motivation may be due to the pure enjoyment of the process or the desire for learning and a sense of accomplishment. External motivation comes from rewards or the desire to avoid a negative consequence (Lumsden, 1994). Extrinsic motivation comes from external factors. That is where the teacher will be involved a lot compared to intrinsic motivation. In extrinsic motivation the learners have to see value and a sort of reward that would encourage learners to work hard (Ecology of Education, 2012). When learners attend a new institution they begin to develop their own belief systems about success and failure. Teachers also have a powerful influence on the success of learners through the expectations they set for learner success.

Struggling learners tend to become unmotivated in school. These learners often resist academics because of a developed belief system that they do not have the ability to succeed

even if they put forth much effort. These learners have low feelings of self-efficacy or belief in self (Margolis & McCabe, 2004). Self-efficacy is very good as it influences motivation. Enthusiastic teachers tend to create classes that promote an emotionally safe and secure environment, which, in turn, does promote self-efficacy. This type of environment includes an emphasis on motivational principles that encourage learning and achievement (Margolis & McCabe, 2004). This implies that if learners are motivated, they are likely to do better in academic achievement.

DTVE graduates should be trained in such a way that they understand and exercise these strategies. It has been found out that most of the teachers of BTEP use traditional methods of teaching instead of the recommended outcomes-based methods since they have a negative attitude towards the new methods, or they feel that DTVET has not thoroughly supported them enough to fully implement the methods (Richardson, 2009). This study examined whether the DTVE produces the teachers with motivational skills so that they can make the BTE Programme enjoyable, interesting, motivating, well planned and of high quality.

E-learning (ICT)

ICT is recommended as one of the platforms that can be used to implement BTEP (Republic of Botswana, 2005). ICT is very important to education globally. In 1998 there was an International Congress that was held in South Korea which made recommendations on the role of ICT in TVET. One of the recommendations was that "The new technologies must be harnessed to provide widespread access to TVET. They have the potential to offer flexibility in time and location to TVET delivery, e.g. using distance-education mode" (UNESCO-UNEVOC, 1999, p. 16). This cannot be successfully implemented if the teachers

and support staff of TVET do not have the capacity to implement ICT. TVET in Botswana is said to have been

> affected by insufficient staff (both teachers and support staff), and by the presence of incompetent and ineffective teachers and support staff. Where ICT exists it is grossly under-utilised. This is due to the fact that either staff are not qualified enough to meet the changing demands of new technologies and the dynamic societal environments, or do not realise the full potential of ICT in teaching and learning (UNESCO-UNEVOC, 1999, p. 24).

There are several challenges affecting TVET with regard to qualified staff in terms of ICT. One of the challenges for staffing in TVET is that those who have knowledge of ICT cannot be retained by DTVET as they go for greener pastures elsewhere. The other is that some of the Technical Colleges do not have facilities to adequately run programmes on ICT (UNESCO-UNEVOC, 1999). To remedy the situation it was recommended (UNESCO-UNEVOC, 1999) that TVET should provide qualified staff who are effective in ICT. TVET should also provide relevant facilities to colleges. Materials like modules should be competency based and e-learning friendly to accommodate distance learning. To utilise the facilities TVET should provide training to in-service teachers in the area of ICT (UNESCO-UNEVOC, 1999).

For learners to be technological, the environment in which they are learning should be technology friendly. There is also evidence that if technology is infused in education, there is a high chance that the learners would improve in performance. However, this is not always the case. The technology has to be properly integrated in the syllabus, and it should also be used appropriately (Lewis & Blanksby, 1988). Most of the teachers globally in TVET are not well trained on matters of technology (UNESCO-UNEVOC, 1999). This has an impact on the way the teachers plan and execute their lessons in terms of integrating technology:

> The use of technology is good to both face-to-face technical and vocational learners as they allow learners to gain experience through simulations of situations that would normally be inaccessible to them because of safety factors, security factors or costs. It has been established that the appropriate use of interactive multimedia resources reduces the time needed for training to the order of 30%-60% (Hosie, 1993, p. 74).

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BTEP learners need to have ICT knowledge since it is needed for most of the modern jobs. It is therefore necessary for the teacher to be in a position to impart such knowledge to the learners. At the same time if teachers have a limited knowledge of ICT there is a possibility that they will limit its usage in their lesson execution.

Conclusion

Chapter 2 reviewed the literature that formed a fundamental part of the setting up and execution of this study. From all the literature studied, it is evident that the teaching of BTEP needs to employ learner-centred methodologies using outcomes-based assessment criteria using both formative and summative assessment. It is also very important to ensure that the teachers of BTEP are well trained to administer the assessment procedures recommended for BTEP. The success or failure of the Botswana Technical Education Programme depends on well executed approaches to teacher-training programme implementation that will cater for the needs of the learners in terms of their learning preferences. It is also the duty of DTVET to be directly involved in the running of the DTVE programme as it is directly responsible for making BTEP a success story. Therefore, the programme should cater for such. And finally the literature revealed that ICT should be utilised by DTVET learners globally. This includes BTEP and it emphasizes the use of ICT in the delivery of its modules. It is on the basis of the above points that this study investigated the relevance of the Diploma in Technical and Vocational Education graduates to the colleges which they are attached to in terms of their delivery of the BTEP.

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Chapter 3 – Methodology

Introduction

The purpose of this chapter is to introduce and outline the research methodology which guided the scope of this study. It describes the research design as well as the techniques adopted. These were derived from the existing traditional philosophies which have enabled this study to be in line with other studies which share the same scope.

This is a research study which is qualitative in nature. A brief description of the conceptual framework has been included as it helped guide the study. The research design adopted is phenomenology. Non-probability sampling as a form of purposive sampling has been chosen to determine the source of data. The data collection strategies were in-depth interviews and classroom observation which complement each other. As the data was qualitative, its analysis needed to be decoded into themes for easier analysis. Ethical issues were considered so that no one's rights were disregarded during the research.

Research orientation

There are two distinct types of methods associated with research. These are quantitative and qualitative approaches (De Vaus, 2001; Descombe, 1998; Silverman, 2000). These two approaches are different and these distinctions influence the choice of methodology for each study. The contrast between these methodologies helps the researcher to choose the best method suitable for the study at hand. This is largely determined by the type of research questions the researcher wants to answer and how practical it is to best collect the data for those questions (Devault & McCoy, 2005). In this section these concepts are defined and explained in order to draw an understanding of their distinctiveness.

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Qualitative research refers to the type of study that has objects that are difficult to quantify (Twin Cities Campus Library, 2013). To further elaborate on this subject, qualitative research "implies an emphasis on the qualities of entities and on processes and meanings that are not experimentally examined or measured (if measured at all) in terms of quantity, amount, intensity, or frequency" (Denzin & Lincoln, 2000, p. 11). Qualitative research ensures that there is a relationship between the researcher and the respondents since there is a face-to-face relationship during data collection whereas quantitative research may be possible even if the researcher and the respondents do not physically make contact (Devault & McCoy, 2005). This will be in instances when the researcher sends a questionnaire to the respondents. On the other hand, quantitative research is said to be the one which have variables that can be counted. This means that quantitative research is the kind of research that "makes possible a relationship between variable" (Denzin & Lincoln, 2000, p. 8).

The decision whether to use either qualitative or quantitative research method is determined by the researcher at the infancy of the research. For example, it is argued that "quantitative research is deductive and hinges on the presence of a hypothesis, which is identified before research begins. Qualitative research is inductive and does not require a hypothesis in order to start the research process" (Devault & McCoy, 2005, p. 21). The decision to determine the hypothesis were made much earlier in the study, in that way the researcher must have already decided whether they will use qualitative or quantitative approach. Quantitative research deals with testing the hypothesis that is usually derived from a theory. In this case the researcher has a guess about the results of the study and carries out the study to prove or to disprove the guess.

Leedy and Ormrod (2001) indicated that the researcher's choice of the research method is influenced by aspects such as types and suitable techniques of data collection

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procedures, data collection instruments, and sampling method as well as other activities within the methodology process. It is therefore under these arguments that my choice of method was qualitative study. Qualitative research deals with the fact that individuals have different cases rather that of a collective or generalized reality (Wilmot, 2009). In that way we say that qualitative research searches for meanings.

Qualitative research was chosen because the researcher wanted to be much closer to the participants and understand what their thoughts were about the phenomenon. In qualitative research, the relationship between the researcher and the respondents is greatly enhanced as they work face-to-face during data collection processes. Qualitative research methodology analyses data that is gotten from what people have described, and this description comes from people's understanding of their environment. The researcher needed to have a deep insight of what the participants say about the topic at hand through their own descriptive information. Scholars such as Denzin and Lincoln (2000) have argued that qualitative approach is the best method to use when one is studying human beings. Qualitative method also matches the research questions for this study. The research questions seek to find out the perceptions of DTVE graduate teachers and HoDs about the relevance of the programme in teaching BTEP. The research questions also try to find out the instructional practice of the graduates when teaching BTEP. The best data collection methods, therefore, became face-to-face interviews and classroom observations. The qualitative method became the more suitable method to find the perception and the personal experiences of graduates.

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Research design

A research design is a plan that researchers need to have in order for them to implement the research study successfully. A research design is described by Trochim (2006) in the following words:

> Research design provides the glue that holds the research project together. A design is used to structure the research, to show how all of the major parts of the research project – the samples or groups, measures, treatments or programs, and methods of assignment – work together to try to address the central research questions (para. 1).

A proper research design ensures that the researcher has control over the research process and eliminates the negative factors that might get in the way of the validity of the outcome. Without a proper research design, the project can run the risk of failure. The research design helps the researcher to come up with the correct instruments that will ensure that the right information is obtained which might translate into the idea that the correct conclusion is going to be arrived at in a convincing manner (Congdon & Dunham, 1999). The research design also helps the researcher to plan on when and how the data will be collected and analysed (Parahoo, 1997). When designing a research we need to put in mind the type of evidence we need the research question to provide.

The purpose of the research design is to make sure that the evidence that is derived from the study addresses the research problem as clearly as possible (De Vaus, 2001). A research design also helps the researcher to obtain the necessary type of evidence that is needed to tackle such a problem. In that way the choice of a research design should be considered very carefully. There are various research designs used in different studies by different authors, an example being qualitative (Phenomenology, Ethnography, Case study and Grounded theory) and quantitative (Descriptive survey research, Correlation research, Causal-comparative research and Experimental research) (Creswell, 2002; Veroy, 2010; Yin, 1994).

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Qualitative research designs

A case study design is the one whereby an in-depth study is carried out on a particular problem (Veroy, 2010; Yin, 1994). It is used in cases where a much broader field is narrowed down to a few researchable examples. This design is useful in situations whereby very little is known about the problem at hand. In case studies detailed information is collected from a participant or a small group on frequent occasions, and then a conclusion is drawn to that specific situation only (Veroy, 2010).

Another design for a qualitative approach is ethnography. It involves the study of people's cultures. In this type of research it is possible for the researcher to be involved with the groups they are researching for a long time, sometimes even years as a participant observer (Hoey, 2014; Remenyi & Money, 2004). This is necessary to ensure that information obtained is detailed. It is an in-depth description of everyday people's lives and practice from the observer's point of view. This can be a major disadvantage due to the fact that the researcher sometimes develops some bias as they may personally be attached to the group they are studying. The good thing about ethnography is that the observer does not rely on second hand information since they are always available; therefore the validity of the data is not questionable. Apart from observations, ethnography also involves interviews which are in-depth in nature. According to Hoey (2014) ethnography interviews are not scheduled and do not have agendas as it is the case with quantitative interviews. These are just conversations that happen during participant observations. Other sources of data collection apart from observations and in-depth interviews are analysis of documentation about the studied group such as government documents and magazines. This may be used to compare what is documented against what is being observed or what is being said from the interview (Hammersley & Atkinson, 2007; Hoey, 2014).

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By carefully scrutinising the nature of this study, the most suitable design became phenomenology. Leedy (1993) described phenomenology as a study design that explores an individual's or a group's perception of reality as they construct it. These realities may be expressed as an occasion, a program, an association and a feeling. In addition to that Wilmot (2009) defines phenomenology as "a perspective that holds that knowledge is gained by understanding the direct experience of others" (p. 7). It uses information that is obtained from other people as they narrate events. Phenomenology analyses what people assume is the truth. It can be described as "an interpretation of human involvement in the physical world" and that "reality is dependent on the perception and interpretation of a conscious human being" (Garrison, 1994, p. 20). In addition Lester (1999) pointed out that the purpose of phenomenology research is "to illuminate the specific, to identify phenomena through how they are perceived by the actors in a situation" (p. 1). In this case the researcher does not make an assumption on how the participants perceive a phenomenon but relies on what they recognize as reality. This design is used with qualitative methods such as interviews, discussions and participant observation (Lester, 1999; Van Manen, 1990).

Phenomenology design was chosen because it focused on retrieving what participants were experiencing and how they interpreted those experiences. In this design the researcher investigated the phenomenon precisely as it was felt and experienced by the participants. In that way the researcher made some generalisation on how people in that condition felt basing on the feelings and experiences of a few individuals that were studied. Lester (1999) indicated that phenomenology research "seeks essentially to describe rather than explain, and to start from a perspective free from hypotheses or preconceptions" (p. 1). This made phenomenology to be a chosen qualitative design as the researcher has not needed a hypothesis to begin the research.

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As Van Manen (1990) puts it, phenomenology is characterised by four steps in its methodology, namely; Bracketing, Intuiting, Analysing and Describing. Bracketing and intuition best fit at the data collection process stage while the process of analysing and describing seems to be visible in the data analysis procedure stage.

Bracketing is when a researcher removes all the preconceived ideas that they may have on the problem being researched. This is done so that the researchers may digest the information they receive as purely as possible (Van Manen, 1990). In other words the researcher isolates what they already know from what they find during research. Intuition is when the researcher opens up to the meaning of the data as they receive it. This means that the researcher should be deeply absorbed in the study during data collection. At this point the researcher gets a feel of what is being said and expressed (Van Manen, 1990). The third stage of phenomenology design is known as Analysing. In this analysing stage the coding process involves three stages, namely; open, axial and selective. At the first open stage the data is divided into segments which their similarities and differences can be used to form themes. Van Manen (1990) has described open coding as "a process of reducing the data into small set of themes that appear to describe the phenomenon that is under investigation" (n. p). During axial coding similarities between the categories are established. This is done by investigating the events which lead to the existence of the phenomena being studied. For selective coding this is done by selecting the main categories and relating them to others. During this process these categories are combined together to form a storyline that explains the phenomenon that is being studied (Van Manen, 1990). This means that these codes are developed into themes by categorising similar codes into major ideas. The analysis is narrowed by interconnecting the themes into sequences.

And then the final stage in the phenomenology methodology after coding is known as the descriptive stage. This is the stage where the researcher now makes sense of the

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phenomenon and makes either a written or verbal critical description of it (Lester, 1999; Van Manen, 1990). The text is interrogated and summarized into what participants have actually said. During interpretation the researcher made meaning of the data by using personal views and comparing with past studies (Gott, 1984).

Conceptual framework

Miles and Huberman (1994) see a conceptual framework as an idea that "explains, either graphically or in narrative form, the main things to be studied - the key factors, concepts, or variables - and the presumed relationships among them" (p. 18). In a study a conceptual framework entails concepts, assumptions, expectations, beliefs and theories that inform and support a research (Miles & Huberman, 1994). This can be a model or a theory about what one plans to investigate. It enables one to formulate relevant realistic questions and select relevant methods. In short, a conceptual framework helps the researcher to justify the research. It shows people why the research is important. Miles and Huberman (1994) opined that if one is an inexperienced researcher, it is better they start with a simple idea they are looking for even if it can change over time. This is the idea that informs them on what they expect the research to look like.

Yin (1994) informs that it is important for the researcher to formulate their own conceptual frameworks. Even though ideas can be borrowed from existing concepts, it is not advisable to adapt someone's concept or theory as it is since it can be misleading or wrong. A conceptual framework can be formulated by incorporating some concepts from different sources and building one's own framework. Mishler (1990) has the opinion that "qualitative studies ultimately aim to describe and explain a pattern of relationships, which can only be done with a set of conceptually specified categories" (p. 431). This research was guided by a model known as Assessing Training Effectiveness. This four-level model was developed by

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Donald Kirkpatrick in the 1950s as a curriculum evaluation model (Burkhart, 1996). The levels for Assessing Training Effectiveness model are simplified below:

Table 6: Assessing Training Effectiveness model's four stages

Level	Stage
4	**Results** This level measures the success of the program in terms that managers and executives can understand namely; increased production, improved quality, decreased costs, reduced frequency of accidents, increased sales, and even higher profits or return on investment. Level four evaluation attempts to assess training in terms of business results.
3	**Transfer** This level measures the transfer that has occurred in learners' behaviour due to the training program. Are the newly acquired skills, knowledge, or attitude being used in the everyday environment of the learner?
2	**Learning** Assessing at this level moves the evaluation beyond learner satisfaction and attempts to assess the extent learners have advanced in skills, knowledge, or attitude. To assess the amount of learning that has occurred due to a training program, level two evaluations often use tests conducted before training (pre-test) and after training (post-test).
1	**Reaction** Evaluation at this level measures how participants in a training program react to it. It attempts to answer questions regarding the participants' perceptions - Was the material relevant to their work?

Adapted from *"Evaluating workplace education program effectiveness"* Burkhart (1996).

In this four- level model the next level is built on information from the lower level. This model worked best to assess the relevance of DTVE programme to train teachers suitable for BTEP in the following manner:

For Level 1 (Reaction) the graduates of DTVE provided perceptions about the relevance of their programme in relation to implementing the BTEP methods of teaching. This determined if the DTVE programme was relevant to the teaching of BTEP or not. For Level 2 (Learning) the graduates were asked to list and describe the skills they have learnt from DTVE training which are essential for the teaching of BTEP such as ICT, e.g. powerpoint presentations. The graduates were asked to compare the level of the skills they possessed before training with the skills they possess after training. In that way the amount of learning that has taken place during DTVE training was established from the graduates.

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As for Level 3 (Transfer) the graduates were observed in practice implementing the skills they have learnt like ICT and OBE methodologies. This included skills and knowledge that were not related to teaching but were incorporated into their training. These are skills such as relationship with learners and colleagues. Finally in Level 4 (Results) the HoDs were asked questions on whether they were satisfied with the performance of the graduates in relations to the teaching of BTEP. This evaluated whether the training the graduates have acquired was relevant from the eyes of their HoDs as their managers. This determined whether the graduates produced results when teaching BTEP.

The questionnaires and the classroom observation instruments were designed and constructed to satisfy the criteria of this model.

Sampling

Sampling is very important for both qualitative and quantitative studies. Sampling is defined by Trochim (2006) as "the process of selecting units (e.g., people, organizations) from a population of interest so that by studying the sample we may fairly generalize our results back to the population from which they were chosen" (n. p). This is necessary because in most cases it is not possible to include everyone who is affected by the study, therefore some are used in the study and the findings are generalised to the population.

Sampling, as described by Burns and Grove (2001), is the process of choosing people who you are going to conduct the study with. This is so because in most cases researchers cannot study the whole researchable population because it is not practical to do so due to constraints such as time, finance and resources (Lunsford & Lunsford, 1995). In that way researchers choose a section of a population which they study and then make an inference to the whole population. The advantage of using a sample include that it is less costly, time efficient and much more accurate since researchers can have control over the small

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population they are dealing with. The major disadvantages consist of the fact that there may be bias in the selection of the participants and this can bring the element of error in interpretation and at the end the generalization of the results to the whole population might be compromised (Lunsford & Lunsford, 1995). In that way some scholars such as Wallen and Fraenkel (2001) and Patton (2001) have made an emphasis on the importance of avoiding bias when selecting a sample.

Population

Population as seen by Parahoo (1997) is the total number of subjects which are possible for the study to be researched on. As an example, these subjects can be in the form of people, events or organisations. The same view is shared by Creswell (2002) as he described what he termed the target population as those individuals who have a common feature which the researcher wants to study. These are the people who are eligible for the study to be conducted on them. According to Burns and Grove (2003) eligibility is "a list of characteristics that are required for the membership in the target population" (p. 234).

The research population for this study was obtained from teachers and HoDs from the seven (7) technical colleges in Botswana. These are Gaborone Technical College, Palapye Technical College, Selebi-Phikwe Technical College, Jwaneng Technical College, Maun Technical College, Francistown College of Technical and Vocational Education, and Oodi College of Applied Arts and Technology. The actual population of all the teachers and HoDs who were offering BTEP was not known since there were no reliable records available.

Due to the fact that these technical colleges are spread throughout Botswana, four (4) technical colleges were selected to be used for the study as it was not financially viable to study all the technical colleges. Time constraint was also a factor that was considered to

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select the technical colleges. The selected were: Gaborone, Maun, Palapye, and Selibe-Phikwe Technical Colleges. These technical colleges fairly represented the different geographical locations of Botswana. This decision was taken with the understanding that samples in qualitative research are usually small so that rich data is extracted from a manageable sample. Cautiously, if the sample is too small, it would be difficult to achieve saturation (Lincoln & Guba, 1985). Saturation is when no new themes are available after a number of data collection processes such as interviews and the researcher decides not to continue with the process (Marshall, 1996). This is whereby no more new important data is upcoming and therefore not necessary to continue with more participants as they no longer add value.

Sampling Technique

There are two types of sampling techniques, being probability sampling and non-probability sampling. Trochim (2006) pointed out that the main distinction between probability and non-probability sampling is that probability sampling involves random selection of participants while non-probability sampling does not. With probability sampling the whole researchable population stands a chance of being selected into the sample, that is, participants are selected at random. Probability sampling is associated more with the quantitative study design (Laerd Dissertation, 2012; Wilmot, 2009). Probability sampling uses methods such as simple random sampling, cluster sampling as well as stratified sampling (Babbie, 2001). In terms of non-probability sampling the participants are chosen because they are available to the convenience of the researcher. In non-probability sampling the whole researchable population does not stand a chance of being equally selected in the sample, therefore generalizing the results to the entire population must be qualified (Lunsford

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& Lunsford, 1995). Non-probability sampling is associated with qualitative research (Laerd Dissertation, 2012; Wilmot, 2009).

There are a variety of methods which are classified under non-probability sampling. Among these are: quota sampling, convenience sampling, purposive sampling, self-selection sampling and snowball sampling (Babbie, 2001). With convenience sampling the participants are chosen because of their convenient accessibility to the researcher and therefore are easy to find. This method is economical and fast to obtain results but the major challenge is that there is a strong possibility of bias. Quota sampling is often selected when there are groups within the population that are to be studied. To ensure a fair representation of the groups, the affected groups are divided into stratified groups where fair sample in terms of population distribution within each stratum is drawn (Laerd Dissertation, 2012; Lunsford & Lunsford, 1995). The advantages of quota sampling are that it is easier to carry out if the studied groups are easier to define (e.g. male or female) as it does not need a sampling frame and it ensures that each group in the population is fairly represented. If the studied groups are much more complicated it takes more time and finances to come up with a good quota (Laerd Dissertation, 2012). Another non-probability sampling method is self-selection sampling. In this method the participants volunteer on their own to be part of the sample without being directly approached by the researcher. Using this method is likely to lead to success as the participants are likely to be committed to the study since they volunteered. The participants may spend a longer time to fill the open ended qualitative questions (Lunsford & Lunsford, 1995). However, this method may present a lot of bias which can produce exaggerated findings. The participants may not necessarily represent the population being studied. The snowballing method is appropriate for studies by which the population is hard to reach for reasons such as communities which have been stigmatised. In that case if one individual is identified, they can be used to recruit others with similar

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conditions who can be able to assist in the study (Biernacki & Waldorf, 1981; Faugier & Sargeant, 1997). However, since the population being studied is not known, the findings may not necessarily represent the possible researchable population (Faugier & Sargeant, 1997).

Lastly another method of non-probability sampling is purposive sampling. Here the participants are purposely selected because they can help with the issues that are important to the research (Denzin & Lincoln, 2000). Purposive sampling has an advantage due to the fact that the researcher purposefully selects people or objects who have knowledge on the area under study (Salomon & Perkins, 1998). According to Curtis, Gesler, Smith, and Washburn (2000) samples are often small. In that case in-depth information can be supplied by the participants. This is in line with the fact that in qualitative research, the main objective is to provide detailed views of individuals and the specific contexts in which they hold these views. It is also important to realize that in the sampled group, there should be people of different perspectives and experiences who should be able to provide a variety of different responses which will be beneficial to the researcher. These differences may be based on race, gender, level of schooling, or any other factor that may influence the difference in the participants (Gott, 1984).

For this study, purposive sampling was identified as the most suitable sampling method. It was chosen because the researcher wanted a particular group of people, namely those who were DTVE graduate teachers and were currently teaching BTEP. In that way purposive sampling eliminated those who were not suitable for this study, therefore saving on time and finances. Purposive sampling enabled the researcher to track a group of people who are eligible for the study since there were no reliable records to establish their population at colleges.

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Sample criteria

This study sought to assess the perception of the technical college teachers in relation to the relevance of Diploma in Technical and Vocational Education programme for preparing teachers to effectively offer Botswana Technical Education Programme. It also aimed to find out what the Heads of Department who directly supervise these teachers felt about their preparedness to offer the BTE Programme. This meant that the sample had to be derived from technical colleges in Botswana. It was essential that the participants who were the source of data did that willingly (Patton, 2001; Wilmot, 2009). This was important to ensure that ethical considerations were followed and that participants were likely to provide correct information if they volunteered into the programme. To ensure this a letter (Appendix A) was sent to Deputy Principals (Curriculum) in respective Technical Colleges which were selected to participate in the study. This letter was sent with the understanding that the Deputy Principals would help identify the participants who would volunteer to be in the study. As they volunteered they were placed against the criteria in which they qualified in order to see how the sample took shape. In that letter there were characteristics that were outlined as criteria for someone to be eligible to participate in the study. The following criteria were needed to qualify teachers to participate in the study:

- They needed to have a vocational teaching diploma (DTVE) from FCTVE.

- The teachers were required to have some experience in lecturing the new BTE programme.

Heads of Department were also selected using the criterion which follows:

- These were directly supervising teachers offering BTEP.

The criteria that were used to select the participants were based on the fact that they were derived from the purpose of the research (Babbie, 2001).

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Sampling frame

A sampling frame may be described as a sort of inventory that has all the members of the population that fall within the study. In addition to that Wilmot (2009) defined a sampling frame as "a list or map that identifies most units within the target population" (p. 5). A sampling frame may be derived from what is known as existing frame. These are frames that have been made as a source of information for administrative purposes. Researchers are allowed to use these lists. However, it may be very difficult for one to access this information as it may be treated as confidential, or the information may be outdated (Mhizha, 2012). There was no reliable existing frame at DTVET. In this case the researcher had constructed their own sampling frame (Wilmot, 2009). These constructed frames are suitable for non-probability sampling (Babbie, 2001). This process took place in the field as the possible participants volunteered and the sample criteria took shape.

However, the researcher came up with an estimated sample. Within the four (4) Technical Colleges which were selected for data collection, five (5) teachers per a college were scheduled to be interviewed and observed. For HoDs, one (1) was planned to be interviewed from each technical college. This gave a total of twenty (20) teachers and four (4) HoDs. Nonetheless, this was not achieved as seen in Table 8. The sample criterion was therefore shaped by the teachers who were eligible and volunteered for the study.

Data collection procedures

Data collection is seen as the backbone of a research study. Merriam and Simpson (1984) emphasized that data collection is the reward of doing a research. As for the qualitative approach, the research begins with the specific and moves toward the general. In addition to that, Devault and McCoy (2005) have pointed out that:

> The data collecting process in qualitative research is personal, field-based, and interactive or circular. As data are collected and organized during analysis, patterns emerge. These data patterns can lead a researcher to pursue different questions or concepts, in a manner similar to rolling a snowball downhill (p. 15).

This indicates that in the qualitative approach, the researcher becomes immersed in the data collection process and plans the analysis as data takes shape. The researcher can also investigate other areas which come out even though they were not initially thought of, but are important to the study. This means that during the qualitative data collection process, the researcher records their thoughts and impressions about the emerging data patterns. Then basing on the depth of the data, an informed interpretation of the data can go hand in hand with data collection. Throughout quantitative data collection the researcher can make observations on what they see in order to assesses changes in people's perceptions (Leedy & Ormrod, 2001). This may be done with the help of open-ended questions in order to beef up on what is being observed. These qualitative data collection techniques bring the researcher close to the participants as compared to the quantitative methods which mainly use instruments that have pre-determined choices that decide on how the participant should respond (Leedy & Ormrod, 2001). This is so because quantitative methods are meant to produce results that are easy to compare, summarize and generalize. On the other hand the researcher may assign participants to different treatments in order to statistically control their influence on the outcome of the study. The data collection techniques for quantitative method range from surveys with closed-ended questions such as face-to-face or telephone interviews questionnaires. These questionnaires are closed-ended with pre-determined responses as mentioned earlier.

However, for qualitative research the questionnaires and interviews are less structured in comparison to those used for quantitative research. In qualitative research the interviews are more in-depth and face-to-face. This enables the researcher to "establish a rapport with

potential participants and therefore gain their cooperation" (Leedy & Ormrod, 2001, p. 14). This also helps the researcher to clarify certain aspects during the interview.

The advantage with quantitative research with questionnaires is that these can be sent to a large number of people and in that way it saves money and time. Since the participants will be dealing with these questionnaires on their own, there is likelihood that the information they put is truthful. The major disadvantage is that many of the questionnaires are not returned to the researcher and this affects the sample representation (Leedy & Ormrod, 2001). This means that even though the open-ended and less structured questionnaires for qualitative research may take longer to respond to, this is helpful to the researcher since the participant can provide more information that can be very useful to the researcher (Leedy & Ormrod, 2001). The major disadvantage is that it takes a long time for a participant to respond to the questionnaire.

For data recording during quantitative research, the researcher selects or develops an instrument that will be strictly followed. The instrument may be a form of a Likert scale where respondents will indicate where their opinions fall within the scale. Then at the end, the responses will be used by the researcher as a basis to generalise the finding (Creswell, 2007). For qualitative studies like this one, researchers develop special forms for recording data. These forms are designed in such a way that there are spaces provided for the collected data to be recorded. In case an interview is used, a pre-arranged procedure is needed to keep the researcher organized. During this interview process the behaviour of the participant being interviewed is also observed and recorded. This practice also takes place during observation, whereby notes are kept in order to record events and processes taking place (Creswell, 2007).

As this study uses a phenomenology design under a qualitative orientation, it should use such methods such as interviews, diaries and observations (Van Manen, 1990). Therefore

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the researcher selected data collection methods for this study in the form of in-depth interviews and classroom observations for the purpose of triangulating the data. Triangulation is seen by McMillan and Wergin (2010) as "the use of different data sources, time periods, and data collection methods that results in similar findings" (p. 91). Guion (2002) opined that in qualitative research triangulation is used to check the validity of their studies. In this instance it is methodological triangulation as it has interviews triangulated with observations (Denzin & Lincoln, 2000; Guion, 2002; Shenton, 2004). In-depth interviewing and classroom observation can be used to assess the changes in what the participants have said and what is happening in the classroom. However, the methods might need more time and resources to achieve. Triangulation was helpful because the data that was collected from in-depth interviews was complemented by the data collected from classroom observation.

For Research Question 1 (RQ1), an in-depth interview with the graduates of DTVE who are offering BTEP was undertaken. For RQ2, an in-depth interview was conducted with the Heads of Department who supervised those graduates. And finally, for RQ3, the interviewed graduates were observed teaching BTEP to find out if the instruction they used was in line with what they have implied during in-depth interviews as a form of triangulating the data.

The researcher was the sole personnel involved in the data collection process in order to ascertain that data was collected in the same manner. Before data collection the participants were addressed in a group where there were briefed about the purpose and objectives of the data collection exercise. This was done in order to familiarise the researcher with the participants and made them feel free to provide the necessary information to the research.

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In-depth interviews

Moser and Kalton as cited in Lowe (2007) have described an interview as "a conversation between a researcher and a respondent with the aim of gaining certain information from the respondent" (p. 78). The difference between an interview and a normal conversation is that an interview is pre-planned and structured. Apart from arranging the questions in a manner beneficial to you as a researcher, one needs to find people they want to interview, locate the venue and the method one would need to record the response.

The type of interview that was chosen for this research was the in-depth interview. Phenomenology interviews have to be in-depth and the questions used should be open ended (Van Manen, 1990). In-depth interviews are different from other forms of interviews as they are like the interview one might get from a journalist (Audience Dialogue, 2007). An in-depth interview is advantageous in the sense that intended information can be derived since the researcher is present during the data collection process. In that way the interviewee can clarify ambiguous answers with follow-up questions from the interviewer (Leedy & Ormrod, 2001). However, the interviewer must make sure that follow-up questions do not lead the respondent to the desired response (Gott, 1984). At the same time an interview can enable the researcher to forge a rapport with the interviewee which might be helpful in getting a lot of valuable data (Leedy & Ormrod, 2001; Lowe, 2007; Merriam & Simpson, 2000).

Additional advantages of the in-depth interview are that the interview can be arranged at the organisation where the respondents are assembled, e.g. a college where the graduates are teaching. However, care should be taken to ensure that the respondents are not intimidated by the environment where the interview is taking place, for example in the college staffroom where the graduates might not be comfortable with the HoDs nearby. In that case the graduates may not feel free to voice their opinions (Burns & Grove, 2003).

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It is in this regard the researcher chose to use an in-depth interview as a suitable method for a qualitative procedure of data collection. The interview guide was divided into two parts. The first part of the interview was to obtain background information on the profile of the participants, which is teaching experience and area of specialization. The second part formed the core of the interview guided by questions that allowed for probing and prompting.

Interviews were planned in such a way that they did not interfere with normal college activities. They were carried out during the time when the teacher was not engaged with the learners, colleagues and supervisors. The interviews were scheduled to last forty-five minutes to one hour in a convenient and quiet atmosphere in the respective Technical Colleges. Different colleges provided rooms for interviews such as unoccupied offices and meeting rooms.

During these in-depth interviews data was collected and recorded. Lofland and Lofland cited in Creswell (2002) opined that in qualitative research, for the process of recording data some special forms should be designed and used. In this research, forms for recording data that were used were the same forms that were used for data collection. In these forms, there are spaces provided for the collected data to be recorded (Appendices I and J).

A digital voice recorder was used during the in-depth interview so that all the information that the participants supplied was captured. Prior to use of the digital voice recorder in the interviews permission was asked from participants through the Deputy Principals (Appendix A).

Classroom observation

In this study there was classroom observation to find out how the DTVE graduate teachers put into practice the recommended instructional methods of BTEP. The researcher

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was seated in a normal classroom during a BTEP lesson to find out how the recommended activities were covered which indicated that the right methodology was used (Merriam & Simpson, 2000).

Classroom observation was necessary because it provided additional information which was not provided by interviews. The main disadvantage of an observation is that the observer can be biased and this can provide a challenge to the credibility of the data (Chilisa & Preece, 2005). During this observation the researcher was just an observer. This means that the researcher did not take part in the activities that took place in the classroom. In that way the researcher did not have any noticeable contact with the normal classroom activities (Chilisa & Preece, 2005; Van Manen, 1990). Additional notes were kept to record events and processes which were not covered by the observation guide (Appendix K) but helpful to the study (Creswell, 2002).

Every teacher was observed only once. The observations took two hours, the whole duration of a lesson in a technical college. The researcher was aware that the participants could teach differently from how they usual teach because they are aware that they are being observed. This is known as the Hawthorne effect. Shortall, (2003) states that one of the ways used to reduce this effect is to "communicate clearly from the beginning why you are doing this, and more importantly, what's in it for me" (p. 16?). To cater for this the researcher included clauses in appendices such as introductory letters and consent forms that stated that there were no benefits for the researcher apart from academic. This was also mentioned verbally in meetings which the researcher stated to the participants that no harm will come to the participants as a result of information provided by them and that they should not change the way they teach. The participants were also informed in advance that the information they supply will be confidential and anonymous. They also volunteered as they

felt comfortable with the observations. The participants were also interviewed before they were observed. This gave the researcher time to be close to the participants so that they do not change the way they teach during observation.

Data analysis procedures

In qualitative research, after data is collected, it has to be prepared and then analysed. The process involves reading the data and making sense out of it, then decoding it (Gott, 1984). Carley (1993) noted that qualitative research is limited because it has "time-consuming data preparation, difficulties in relating textual data to other data" (p. 77). The collected data has to be read and understood so that it can easily be classified and coded for analysis. During data analysis, the researcher looks for "patterns, groupings, similarities and differences" (Lowe, 2007, p. 114). Bogdan and Biklen (2003) define data analysis from an interview perspective as:

> Data analysis is the process of systematically searching and arranging the interview transcripts, fieldnotes, and other materials that you accumulate to increase your own understanding of them and to enable you to present what you have discovered to others (p. 153).

The process or procedure involded in analysis is summed up in the following words:

> Analysis involves working with data, organising them, breaking them into manageable units, synthesizing them, searching for patterns, discovering what is important and what is to be learned, and deciding what you will tell others (Bogdan and Biklen, 2003, p. 153).

For this research, data from HoD interviews and teachers interview was analysed separately using the same process. Data from observation was analysed on its own. According to Creswell (2002) before any activity is done to the data, it has to be transcribed. This means that in terms of interviews and observation, some of the data was in the form of recording audio, checklist and observational notes. This data was transformed into text data by being

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typed so that it was manageable. This process was done during the data collection phase, data was transcribed as soon as it was collected. This helped the researcher to follow the way the data was taking shape and make adjustment where necessary.

After the data was read and understood, it was coded. Creswell (2002) simplifies data coding by refering to it as the process of reading, marking, and dividing the data into parts. Coding includes the grouping of the descriptive data into common themes for easier understanding (Van Manen, 1990). During coding data was categorised according to topics with regard to recurrent patterns, then words and phrases which signifies these topics was written down. This was done by creating coding in what is known as groupings. This is the most common way of coding discriptive data (Bogdan & Biklen, 2003). During this process data was sorted into manageable categories which made it easy to analyse.

Credibility, transferability and dependability

Different scholars have argued on the terms to use for qualitative research instead of validity and reliability which are for quantitative research (Chilisa & Preece, 2005; Venkatesh, Brown, & Bala, 2013; Zachariadis, Scott, & Barrett, 2013). As in Chilisa and Preece (2005) and Venkatesh et al. (2013) the following terms have been adopted to be used in this study in the following manner: Credibility for internal validity, transferability for external validity, and dependability for reliability. These terms, credibility, transferability and dependability, were used in this qualitative research instead of reliability and validity which are for quantitative research (Chilisa & Preece, 2005; Laerd Dissertation, 2012; Shenton, 2004; Venkatesh et al., 2013).

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Credibility

According to Chilisa and Preece (2005) "the research is said to be credible if its represents as adequately as possible the multiple realities revealed by the participants" (p. 166). Credibility is gained by the use of triangulation methods during data collection (Shenton, 2004). This enables the comparison of data collected by various means such as data collected from structured interviews, observations, diaries and documents (Chilisa & Preece, 2005; Golafshani, 2003). The researcher used in-depth interviews which were triangulated with classroom observation. During observation and interview one has to gain trustworthiness (Golafshani, 2003). To gain trust the researcher took a longer time in the place of the research to get to know the participants much better. This means that the researcher gained rapport with the participants and at the end was able to get information that was good for the study. However, if this was overdone, it could present suspicion and the participants might have withdrawn their participation (Chilisa & Preece, 2005; Shenton, 2004). One important element of credibility is for the researcher to cross check the data after being collected more especially during an in-depth interview. The researcher had, at the end of the interview, read the notes to the participants and asked them whether their points are reflected well (Chilisa & Preece, 2005).

Transferability

In qualitative research, transfer of findings from one population to another is not the case because it deals with unique cases (Chilisa & Preece, 2005). Some scholars (Descombe, 1998; Merriam & Simpson, 2000) believe that even though this is true, something should be done to make sure that the reader of the research should be able to transfer the results and the conclusions to an environment similar to that of the research. For the reader to make

transferability some information had clearly been provided at the beginning. This is information such as:

> the number of organisations taking part in the study and where they are based, any restrictions in the type of people who contributed data, the number of participants involved in the fieldwork, the data collection methods that were employed, the number and length of the data collection sessions and the time period over which the data was collected (Shenton, 2004).

This enabled the reader to have a clear picture of the environment in which the research took place and therefore had been easy for the researcher to transfer the findings to a similar environment. One of the factors for transferability is the type of sampling the researcher has used for the study. Chilisa and Preece (2005) have the opinion that the best method which makes it easy for transferability is purposive sampling, which was used by the researcher. In this research, a few individuals who had knowledge on the subject at hand were selected on purpose. Therefore the findings from this study may be transferred to that of a similar setting with people who have the same knowledge as the people purposefully selected (Chilisa & Preece, 2005). The participants purposely selected for this study had the same characteristics, qualifications and experience with the sample populations.

Dependability

Dependability helps with the fact that it checks whether the results of the findings are consistent with the data collected (Chilisa & Preece, 2005; Golafshani, 2003). In other words it deals with the consistency of the data collected so as to give it the quality it deserves. It is not easy to engage dependability in isolation from credibility and some of the factors justify both of these entities at the same time. For example one can use the overlapping methods such as in-depth interview and classroom observation to justify both credibility and dependability (Shenton, 2004). The issue of dependability can be tackled more directly using the research processes within the study. These should be described in detail so that a

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different researcher who repeats the same work you have will get the same results. Clearly illustrating the research processes enables the reader to properly assess where the research methods has been done effectively. These processes include the research design, data collection processes as well as the findings (Shenton, 2004).

In this study, the data collection procedures, analysis and the interpretations have been fully described so that another researcher can easily follow the process and achieve the same results. Coding of the data was done several times to evaluate if the researcher will come to the same results. Triangulation of data between interviews and observation was applied. The research plan was also submitted at the Office of Research and Development (ORD) at the University of Botswana, and at the MoESD for scrutiny.

Ethical considerations

Most researches involve strategic people that are necessary for the study to be a success. It is the responsibility of the researcher to ensure that no harm, physical or psychological, should happen to the participants as a result of the study (Polonsky, 1998). Therefore, to avoid this scenario, a code of ethics was followed. This ensured that the participants were treated well during the research, and that the researcher also behaved ethically. Mhizha (2012) states that people have the right to be respected by the researchers. Therefore the researcher put that in mind during the whole research process.

Since this research is qualitative, the researcher spent some time with the participants (Veroy, 2010). During in-depth interview, probing was used to draw information from the participants. Some of those questions were personal (Gott, 1984). For this reason, the researcher was concerned about the ethics.

Polonsky (1998) has indicated that most researchers overlook the fact that they need to seek written permission from the organisation they wish to conduct their study from. For

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this study letters were written to the Deputy Principals of the concerned colleges asking for permission to carry out the research. Meetings were arranged with the potential participants to arrange how, when and where data was collected. These were the meetings where ethics were discussed and agreed by the researcher and the participants.

In addition to the above actions the University of Botswana Ethics Policy procedures were implemented. A detailed proposal was made available to the relevant authorities at the University of Botswana as well as the Ministry of Education and Skills Development in order to obtain a research permit. An informed consent document was submitted before the research was undertaken. Data collection instruments in the form of interview guides for Heads of Department and teachers, and a classroom observation guide were also made available to the Ministry for further scrutiny. All these were important to make sure that the researcher did not infringe on the rights of the participants.

Voluntary participation and consent

According to Hogan (2008) "voluntary participation refers to a human research subject's exercise of free will in deciding whether to participate in a research activity" (p. 1). These are the human rights that are given to participants and therefore are protected by international laws and they should not be overlooked. Special attention was paid to make sure that the participants in this research were not put under pressure to participate. According to Polonsky (1998) the participants should be provided with the same information before they decide whether to participate in the study or not. The participants should not be pressurised by the authorities or some financial gains in order to agree to participate in the study (Hogan, 2008). In that way the participants were given a chance to freely choose whether they wanted to participate in the study or not. They were also assured that there was not going to be any harmful penalty if they chose not to participate.

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To ensure that the rights of the participants were not infringed, letters were written to colleges through the Deputy Principals to request assistance from the participants (Appendix A). In these letters, the participants were assured of confidentiality and at the same time they were encouraged to participate freely. The letters provided information to the participants about the purpose of the study, and explained the importance and justification of the study for them to be involved in. Freedom of choice to participate in the study might mean that there might be very few people who might choose to participate (Research Design and Methodology, n.d). To avoid this, the researcher made sure that he familiarised themselves with the participants by keeping in contact often so that the participants felt at ease and volunteered as they were dealing with someone they were close to.

Polonsky (1998) implied that it is important to ensure that participants understand completely what they are being required to do and that there is no harm if they do not volunteer. An information letter (Appendix C) was sent to potential participants in advance (Polonsky, 1998). This information letter contained detailed information about the nature and the scope of the research. Then during data collection, a consent form was signed with the participants who had shown interest of participating as a way of ensuring that the information they provided was safely treated. This consent letter contained detailed information outlining the type of research that was involved and what they were required to do. This was the information that was already outlined in the information letter. This information included such points like fully introducing the researcher, what the researcher was researching about and what the outcomes were going to be.

Confidentiality and anonymity

According to Privacy and Confidentiality: Issues in Research (2012) confidentiality means "identifiable information about individuals collected during the process of research

will not be disclosed without permission" (p. 1). Confidentiality refers to the fact that the researcher promises and keeps the confidentiality of the information they might have come across during the research whether purposely or not, in a way that the identity of the source might be compromised. The participants were assured that their names were not going to be used anywhere in the research. Code names and special numbers were used instead so that no one will notice the identity of the source of information. They were made aware that the information they provided would be treated as confidential (Gott, 1984).

Anonymity is when the finding of the research does not reveal the identities of the participants. The participants in this research were assured that their identities including the stations in which they served, would be kept anonymous. Special code names and pseudonyms were given to participants, places and locations to ensure anonymity (Graham & Rose, 2008).

This study involved in-depth interview and classroom observation. Therefore, the choice of venue for the interviews and observations was carefully made. As Polonsky (1998) suggested, the venues were public places where everyone witnessed and could ask the participants what was happening afterwards, for example, meeting rooms. These places, even though public, were made isolated so that passerbys did not disturb the proceedings. It was easier to be provided with suitable places for interviews. However, it became much difficult for observations as they took place in classroom and laboratory situations, which were not isolated. However, efforts were made to ensure that there were minimal disturbances. Tape recorders were used during interviews with the consent of the participant. The issue on confidentiality and anonymity were included in the information letter as well as the consent forms that were received by the participants.

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Summary

In this chapter the information on the research methodology was presented. This included all the choices which informed the study. Table 7 shows a summary of all the primary decisions the researcher made which determined the methodology of the study.

Table 7: Summary of the methodology of choice

Level of decision	Choice
Research orientation	Qualitative research
Research design	Phenomenology research
Conceptual framework	A model developed by Donald Kirkpatrick in the 1950s called Assessing Training Effectiveness.
Sampling technique	Non-probability sampling
Type of sampling technique	Purposive sampling
Sampling frame	Constructed frame
Organisation sampled	Gaborone, Palapye, Selebi-Phikwe and Maun Technical Colleges.
Data collection procedures	In-depth interviews, classroom observations
Data analysis procedures	Transcribing, coding data into themes and sub-themes, story line development and then descriptions.

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Chapter 4 - Analysis of Data and Interpretation of Results

Introduction

This study explored the perceptions of various participants about the relevance of the Diploma in Technical and Vocational Education (DTVE) in preparing teachers to teach the Botswana Technical Education Programme (BTEP) in Technical Colleges (TCs). This research was guided by three research questions. The first one, "What are the DTVE graduate teachers' perceptions about the relevance of their Diploma?", was designed to discover the views of the DTVE graduate teachers in relation to the usefulness of the DTVE programme in delivering the BTEP programme. The second research question, "What are the perceptions of the Heads of Department of these graduates about the relevance of the DTVE programme?", was intended to identify what the supervisors of these graduates consider about the quality of the DTVE programme in training teachers who are teaching BTEP. The third one, "What does the instructional practice show about the relevance of the DTVE programme?", was aimed at identifying how the DTVE graduate teachers actually carry out the delivery of the BTEP programme. To answer these research questions a series of in-depth interviews and classroom observations were made. To answer the first research question DTVE graduate teachers were interviewed in person. On the second research question the HoDs who supervise the DTVE graduate teachers were also interviewed. Then finally, for the last question some classroom observations were made.

This chapter seeks to analyse as well as interpret the qualitative data collected in the study, drawing together the perspectives of the different participants as well as findings and other observations that may have arisen during data collection using the concept of following the research questions. The data in this chapter is therefore presented in three sections: The interview analysis for teachers; the classroom observation analysis for teachers; and the

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interview analysis for HoDs. The data will be presented and interpreted without discussion or comments, which will be covered in the next chapter (Morley, 2006).

The process of analysing the data was followed as previously planned in Chapter Three. Data familiarisation took place during the data collection process. The data was transcribed immediately to avoid it piling up. This helped the researcher to be much more focused because data was digested as it was transcribed. This added quality to the next interview since the interviewer had carried out the previous interview and was able to address any weakness during the next interview.

A qualitative methodology in the form of in-depth interviews and classroom observations was used to explore the research questions. At this stage the process of data analysis was started. This was done by thoroughly reading the data and identifying codes, which meant the grouping of data into related concepts. The codes were further reduced by combining similar codes to form themes. The themes were scrutinized further by interconnecting them into sequences as the analysed data now started to takes shape. Then the description of the data was done by coming up with the report that follows. The analysis is presented largely in verbatim qualitative statements.

Demographic information

Initially the study targeted 4 Technical Colleges with 4 HoDs (1 per college) and 20 teachers (5 per college). These teachers were expected to be drawn from different subjects. However, it became evident that it was not possible to get respondents from across many subjects due to many different factors. First of all the graduates of DTVE are not evenly distributed in Technical Colleges. It is understood that some of them have been attracted to the private sector by better conditions (Botswana Training Authority, 2010b). Some of the graduates are at the Brigades and most importantly a great majority of them are in Technical

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Colleges that do not offer BTEP. It is also important to realise that some Technical Colleges have not admitted BTEP learners for various reasons and this meant that the classes could not be observed. Table 8 shows the actual number of participants that was reached during data collection.

Table 8: Response rate from each college visited

College Name (pseudonym)	Total Number of HoDs interviewed	Total Number of Teachers interviewed	Total Number of Teachers observed
A	1	4	3
B	1	2	2
C	1	5	1
D	1	2	1
Total	4	13	7

As the table shows, the targeted number of 20 teachers was not reached due to the factors already mentioned. Out of the 13 teachers interviewed, only 7 were also observed. The observed teachers come from the ones who were interviewed.

Chart 1 shows that most of the respondents are from the Hospitality and Tourism Department followed sparingly by others.

Chart 1: Response rate by subject
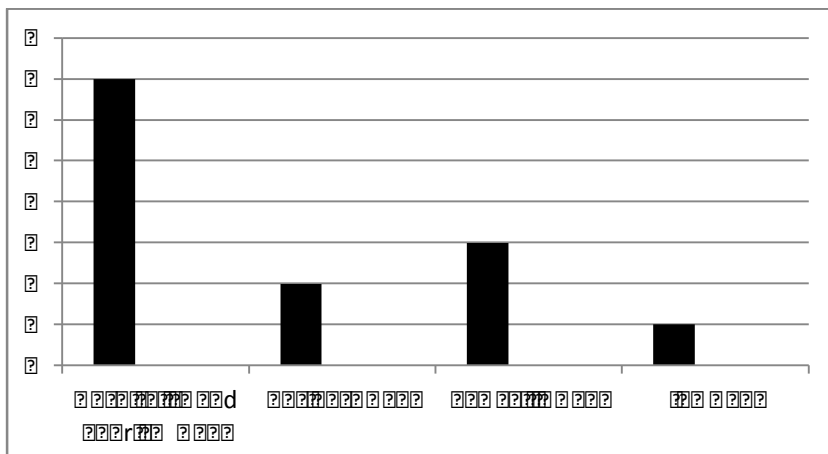
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Table 9 illustrates the distribution of the respondents by gender. Most of the HoDs interviewed were males as compared to females. The table further shows that there were more female respondents who were interviewed and observed.

Table 9: Response rate by gender

College Name (pseudonym)	Heads of Department		Interviewed Teachers		Observed Teachers	
	Male	Female	Male	Female	Male	Female
A	0	1	2	2	2	1
B	1	0	0	2	0	2
C	1	0	2	3	1	0
D	1	0	1	1	0	1
Total	3	1	5	8	3	4

The table below illustrates the cohort from which the respondents came from.

Table 10: Response rate by cohort

College Name (pseudonym)	Cohort 1 2001-2003	Cohort 2 2003-2004	Cohort 3 2005-2006	Cohort 4 2006-2008	Cohort 5 2008-2009	Cohort 6 2010-2011
A	0	2	0	1	1	0
B	0	0	1	1	0	0
C	1	0	0	2	1	1
D	0	0	0	1	0	1
Total	1	2	1	5	2	2

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As the table shows, the respondents are evenly spread out and all the cohorts are represented. Alongside cohort 3 and 4, there were two groups of block release student teachers who were admitted but none of them come forward to be interviewed or observed.

Analysis of data

The study attempted to find out whether the DTVE programme was relevant for its mandate of training teachers who teach BTEP. Three research questions which were used to direct the study were also used to analyse the data.

Analysis of Research Question 1 - What are the DTVE graduate teachers' perceptions about the relevance of their Diploma?

For Research Question 1 a total of thirteen teachers were interviewed. The questionnaire consisted of thirteen questions which aimed at capturing among other things the perceptions of DTVE graduate teachers about the relevance of the DTVE programme and how well they have advanced in terms of the skills, knowledge and attitudes they acquired during training. This is in line with the demands of Level 1 and 2 of the conceptual framework of Assessing Training Effectiveness model which has been adopted by the researcher. From the conceptual frame work used Level 1 deals with how participants react to a training programme they have completed. It finds out their perceptions about the relevance of the training materials towards their work. This is in line with what Research Question 1 sought. In addition Level 2 checks the skills, knowledge and attitude the participants have attained from a programme. It confirms the amount of training that has taken place. It does this by investigating the knowledge levels before and after a training programme. Research Question 1 dealt with these aspects.

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After the interview data was divided into the themes and sub-themes which emerged during analysis. The following sub-topics were identified to present the results of the responses from the teachers to the interview.

The relevance of the DTVE course content. Most of the DTVE teachers felt that the course content was relevant for them to become competent and capable teachers of BTEP. They felt that the 10 modules in the Diploma covered the content that enables them to deal with the aspects of BTEP even though there are some additions which need to be included to make them much more relevant.

On the issue of Key Skills being incorporated into other modules, the graduates felt that it was not clear as to how they should incorporate those in BTEP since it was never clear while they were doing the DTVE course how that was done. They thought it would be better if the Key Skills were dealt with separately or if the DTVE programme can train them much better on issues of incorporating Key Skills into existing modules. One of the respondents in the Building and Construction Department in College B cited an example in the Certificate level unit called Slabs and Paving whereby it is stated that:

Key Skills will be incorporated into all the units where possible

In this unit all the relevant Key Skills will be integrated

Communication–Discussion on materials/designs

Personal and interpersonal skills–Teamwork

Numeracy–Estimate/calculate costs

Entrepreneurial skills–Investigate business ideas

ICT–Word process notes/find information via Internet (Republic of Botswana, 2001).

The respondent felt that they are now being subjected to deal with modules from other departments. The respondent emphasised that their job is to teach learners content on slabs and paving, the content they are comfortable with. The respondent went further to acknowledge that since they always ignore this section on Key Skills incorporation, they felt

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like they are teaching an incomplete unit when they skip Key Skills part and this should be addressed.

The graduates strongly felt that they are not fully prepared to teach the Key Skills modules as these are modules which have their own teachers in the Key Skills Department. The graduates stressed that it would be better if they were better prepared for this process of incorporating Key Skills into other subject areas.

Some of the items the teachers strongly felt needed to be included in the Diploma curriculum were basic principles of adult education. The teachers expressed the view that they teach a variety of learners, including adults from the work-force, and they felt that they needed to be equipped with strategies of working with mature learners.

With the issue of ICT, the teachers felt that they learnt a lot about ICT during training. Some of the skills they expressed having learnt are: powerpoint presentations, the use of overhead projectors (OHP), searching for information from the internet, and submitting and getting feedback through the intranet. The main problem raised by the teachers was that the colleges in which they now teach are not equipped with these facilities. One respondent stated that "sometimes you plan for a lesson to use the only projector in the college. Only to find out that another teacher has planned to use it that same time, or the admin(istration) has planned to use it in a workshop" (College C).

Relevance of the structure of the DTVE curriculum. Most of the graduates voiced unhappiness with the structure of the curriculum during their training. There are certain areas which they believe could be improved, among others being the workload. The most raised concern was that the workload that the DTVE graduate teachers undertake at Francistown College of Technical and Vocational Education (FCTVE) as learners was too much. All the teachers who were interviewed had their 18 months training duration extended by some months. After extension some still did not finish and they were admitted into the distance

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mode programme. In the cases of Cohort 3 and 4 all the learners did not complete all the modules during the recommended course duration. One teacher suggested a solution to the workload problem in the following words: "I think somewhere there were things that were repetition from other modules. There were some modules that I think they need to be combined" (College A).

The other issue which came out strongly about workload was during teaching placement (TP). The research revealed that the was a lot of evidence to be collected during teaching placement so there was little time left to concentrate on the focus of the occasion, which is to practice teaching. Apart from evidence collection, the teachers felt that the paperwork they had to produce in order to be assessed was too much. One of the participants stated that

> The lesson plans are very long and are taxing. Some are as long as twelve pages for a one hour lesson. Lesson plans in junior and senior secondary school are as long as two to three pages. If you have two different lessons in a day it means that you have produce around twenty pages. And there are also other documents on top that support the lesson plan. I know that the details in them are important but something should be done to greatly reduce the content in the lesson plans (College D).

It was pointed out by the teachers that because of too much preparation during TP, most of the time they only managed to practice teaching during assessment, which means that they could not practice on their own before being assessed.

Teaching methods for BTEP. The DTVE programme has recommended a learner-centred, constructivist approach for the programme because this is what most activities in BTEP units suggest the teaching methods should be. Most participants reported that the mode of teaching they acquired during the DTVE programme training was the learner-centred approach. They researched for the information on their own and made presentations and reports. In that way, the teachers strongly felt that this was the best method they acquired from the programme because it introduced them to different skills which they did not have before. Examples of skills acquired are the use of the internet and group presentations which

enhanced their public speaking skills. The teachers highly appreciate the programme for introducing them to this method as it is useful for them to teach BTEP. One of the participants used the following words of appreciation:

> Well I think this course ya (of) FCTVE it has just about everything that every teacher needs, and the good thing about it is because you get to learn everything that you are going to do in class. I never actually struggled with the teaching really because there are different methods you can use such as cooperative and individualised. We were given different types of teaching styles and we were also given the opportunity to practice. This is the highest teaching qualification in the country and is the best, it's only that the government or maybe DTVET doesn't show the people that we do have this programme, because even I as a parent I use these teaching methods with my kids (College B).

All the teachers who were interviewed expressed that they enjoy teaching using the learner-centred approach since it enables their learners to find information for themselves, hence improving the learners' learning capabilities. One teacher expressed the scenario in the following words:

> I'm not into the teacher-centred (approach) because for our course really, Travel and Tourism, we try by all means to brief learners who are able to go out there in industry to find information first hand just like that, so if it happens like I'm going to be the one who is actually pouring a lot of information on them, it's not gonna help them..... I give the learners take home whereby the learners will have to do the research for themselves, so because I was taught how to go about it, so I don't have to do the work for my learners. I just impart the necessary information that shows them the criteria of doing specific things and then they go out and research, you find that they do learn a lot of things through that! (College B).

However, the majority of the teachers revealed that most of their learners would prefer to be taught using the teacher-centred approach. This was because the learners are used to this method from basic education in the schools. The participants pointed out that some teachers in colleges practice the teacher-centred approach even though it is not the recommended method. Some of the participants admitted that they end up using the teacher-centred approach as well due to certain factors. Some of the factors expressed are that if you are the only one who always gives the learners take home tasks, you are labelled by the learners as being incompetent and you want the learners to find information for you. The most common reason given by participants was that some have pressure from their supervisors, who mostly

shun the learner-centred approach because they have not been trained in that method, therefore they do not appreciate it.

Some teachers also felt that in the long run they also end up being bored by using the same styles most of the time. One teacher expressed that:

> I feel they should be improved to cater for other styles because we are using the same styles over and over again and this is boring to some learners. I think BTEP should be more accommodating to other styles to make it much more interesting (College C).

The teachers gave examples of a topic which has a lot of numeracy as those which are challenging to use learner-centred approach. It was not easy for the learner to come up with mathematics related formulae and present them in class. It was much better for the teacher to come up with the concept and thoroughly explain it in class and provide a lot of examples, in that way teacher-centred method would best fit in this situation.

Quality of trainers at FCTVE. This element of the research was essential because the quality of the programme and its products cannot be achieved without the services of good quality trainers. So it was important to find out what the teachers thought of their trainers during their tenure as DTVE learners. Most participants concurred that they were satisfied with the quality of their trainers. It is, however, evident that the quality of the trainers dwindled as the programme progressed with time. Those participants who came from the early cohorts were satisfied with the quality of their trainers as compared with those who are from the recent cohorts. During interviews it was revealed trainers who taught Cohort One, Two and Three were competent trainers who developed the DTVE programme. These trainers left the programme during Cohort Three and Four and were replaced by those who were new to the programme. One of the participants who came from Cohort Four noted that:

> what I realised while I was still studying was that when we started at the old CTVE there in Gaborone, we were just a very small community, everything was ok. We were very lucky because we had the last few people (trainers) that actually developed

the course themselves, so they actually understood the course so much in such way that they were even able to guide us on the criteria (College B).

As time went on things seem to have changed as the participants showed displeasure that even though they were generally satisfied with the quality of the trainers, there were areas of concerns which started to develop. The participants indicated that the experienced trainers left the institution and were replaced with teachers from senior secondary schools who were not familiar with the teaching methods used for the DTVE programme. For the most part the participants did not have a problem with the idea of using teachers from senior secondary schools, but emphasized that some scrutiny has to be done before someone is recruited. New recruits have to have enthusiasm to learn about the programme. An example of having a passionate and a non-passionate recruit was raised by a participant in the following narration:

> There was a time when two guys came from junior or senior school to teach us. One of them had a passion to learn while the other did not and he ended up leaving. The one who had passion used to ask other teachers to clarify to him if he did not understand and as time went on he ended up being at the same par with those who developed the course (College D).

Overall the teachers were concerned about the new trainers' induction procedure into the programme. It was obvious to the learners during training that the new trainers were lagging behind in most aspects as compared to the old ones.

By learning from quality trainers the teachers revealed that they are confident with their skills of teaching, mostly Outcomes Based Education (OBE). According to one participant it was evident that they trust their teaching abilities using OBE by saying that:

> I am very comfortable with my teaching. I think the college (FCTVE) prepared me well for my teaching. We had teaching practices where we practiced the methods before coming to be teachers. So I feel I am well prepared and I am comfortable with my teaching (College C).

From the interviews, it seemed that the teachers are comfortable with group presentations more especially during cooperative learning which seems to be the most popular method the teachers are using as well as giving constructive feedback to learners.

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BTEP assessment. Assessment is an integral part of BTEP. Both formative and summative assessment skills are very essential for the implementation of BTEP. The most important assessment for BTEP is portfolio assessment. The graduates assess BTEP portfolios in Technical Colleges. The graduates felt that the method of producing portfolios they learnt at FCTVE was very relevant to the method of portfolio-making within BTEP. The main problem was that they never learnt how to assess these portfolios at FCTVE, they only concentrated on producing them. However, the teachers clarified that there is a module unit in the Diploma which taught them how to identify and authenticate evidence, but they felt that whilst the unit was good for a start, they needed to have a feel of how to assess the actual portfolio. One of the participants noted that:

> Even though we were taught a lot on how to identify evidence from the learner's work at the college we were not taught using the real portfolio and it is different. But I still feel the course should include a lot of portfolio assessment. I know it is covered but a lot has to be done (College A).

It is evident from the interviews that when the teachers start their teaching careers after they graduate with the DTVE, they are inducted at their college on methods of assessing the portfolios, which include taking the roles of internal moderators. The teachers feel that this is not enough as they tend to receive different information based on the opinions of the mentors, not necessarily a prescribed curriculum. Their main reservation is that they feel that some of the mentors who help them with the portfolio assessment skills do not support OBE assessment methods. Therefore it is not easy for these mentors to appreciate some methods of BTEP and OBE. This brings an issue of different graduates receiving different information from different mentors since the information may be based on the way the mentor wants the work to be handled and not necessarily the way BTEP quality assurance procedures might want it to be done. One of the graduates stated that:

> It's only that sometimes you find that the caliber of mentors in colleges are not used that kind of a method (OBE), they have not been trained. But with us, we normally find ourselves guiding them, we are the ones who have been trained (College A).

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Teachers also felt that BTEP assessment was not fair to other learners. It graded learners the same even if they have different levels of achievement. A teacher noted that:

> The assessment methods should be improved. The assessments are made in such a way that it is impossible to find out who is more hardworking among the learners because they all receive the same grade which is either "achieved" or "not achieved". It is even difficult for the employers to choose the best since all the candidates would be having an "achieved" grade even though some of were struggling more than others (College C).

Summary of Research Question 1 analysis

Analysis of Research Question 1 generated five themes, namely: The relevance of course DTVE course content; The relevance of the structure of the DTVE curriculum; The teaching methods for BTEP; The quality of trainers at FCTVE; and BTEP assessment. These themes will be compared with the ones that emerged from Research Questions 2 and 3 and the implication of the responses will be covered in the next chapter.

Analysis of Research Question 2 - What are the perceptions of the Heads of Department of these graduates about the relevance of the DTVE programme?

As for Research Question 2, all the four HoDs, one per college, were interviewed as planned. The questionnaire consisted of eleven questions which intended to establish the perception of HoDs about how they view the DTVE graduate teachers' perfomance in terms of delivering BTEP. This section satisfies Level 4 of the Conceptual Framework. In Assessing Training Effectiveness Level 4 assesses training in terms of how supervisors scrutinise how graduates have improved the quality of teaching BTEP in terms of the results. It determines how their supervisors view the graduates' performance at work. Their HoDs, as immediate supervisors, have been used to establish how they view these graduates in these regard. The HoDs provided a lot of points in relation to the DTVE graduate teachers. The results of the findings of the HoDs are summarised below in descriptive form.

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Teaching methods. There seem to be a mixed reaction among the HoDs about the teaching methods used by the graduates to teach BTEP. Some HoDs see no difference in the teaching methods used by DTVE graduate teachers from other teachers as they emphasised that they all use the same teaching methods which are mostly teacher-centred. However, they admit that when the graduates are fresh from teacher training Francistown College of Technical and Vocational Education, they implement different teaching methods. But as they mature into the system, they resort to the use of the traditional teacher-centred methods due to several reasons. One of the reasons was that they could not complete the curriculum in the stipulated time although others complete, and then they run into problems with the authorities.

On the other hand, some HoDs seem to appreciate that the DTVE graduate teachers use the learner-centred approaches which are recommended by BTEP in contrast to those who have not gone through the training or those who trained elsewhere. One HoD emphasised this by stating that:

> To me honestly I would say that these graduates from the DTVE programme are much better than those who have not done it altogether. I have observed in my department that those who went through that training know what they are doing most of the time. Those who have not attended this training, they don't know what is happening (College C).

The HoDs stressed that the graduates face a lot of challenges in colleges which hinder their practice of learner-centred methodology. The main one being that some colleges have limited resources. The classrooms are dilapidated and most electric sockets are not working. There is shortage of furniture such as table and chairs and some learners take some time looking for chairs which delays the teacher to start the lesson on time. Since the learner-centred lesson has a strict pattern to follow, all learners have to be properly seated for the lesson to smoothly start. A Head of Department expressed that the DTVE graduate teachers are:

> well informed in the application of learner-centred teaching styles. The problem is that we don't have resources. Here in this college there is serious lack of resources. That's what is hampering those initiatives that help them impart knowledge (College D).

It is evident that it is not all the colleges that face shortage of resources. HoDs who have worked at FCTVE declared that there are some disparities between FCTVE and other colleges in terms of resources. This was noted by an HoD as follows:

> When I arrived in this college I had serious problems because I was used to teaching using powerpoint at FCTVE where I had a laptop, there I had a machine. Here there is a problem; I am not used to writing on the board. I am not used to that. I need to use a device, because it interests the learners because they easily grasp the concept. So, we don't have them here (College D).

The study further revealed that DTVE graduate teachers are considered by the HoDs to be outstanding in the way they relate to the learners during lessons regardless of the cohort from which one comes from or gender. They are very flexible when they are interacting with the learners. They normally appreciate the answers brought by learners even if these might not be the answers they were looking for. They provide learners with positive feedback which encourages the learners to come out and participate freely.

DTVE graduate teachers' ability to discipline learners. Interestingly, most participants indicated that the majority of DTVE graduate teachers behave in a professional manner. They respect their supervisors as well as other colleagues. They are open to the learners even outside the working environment. They treat learners well and in return the learners respect them. It was noted that they normally understand when learners are faced with either social or academic challenges. They are also known to be patient with learners facing problems such as late submission of assignments.

However, it came out strongly that there is a challenge of a lack of Guidance and Counselling skills faced by all the teachers including the DTVE graduate teachers. It has been perceived that the graduate would summon learners to HoDs on issues they should have dealt with themselves. The views voiced include the one that follows:

> I think some of them, most of them, in actual fact it seems they can't handle counselling. They usually send learners to us but when you ask them what they have done to help the learner they say they have not done anything and I always tell them that they have to try to do something. It means that this programme needs to put that element in the teaching perspective. I know there is a module they do which deals with counselling but it does not prepare the learners, even us we are not comfortable with counselling (College B).

The HoDs expressed their view that sometimes this results in the graduates treating learners harshly in their quest to resolve conflicts. In such a scenario some learners do report the graduates to HoDs and complain that they are not treated like adults. However, this issue does not only affect the DTVE graduate teachers but the entire teaching staff at colleges.

The respondents further disclosed that the DTVE graduate teachers are good at teamwork. They work with other teachers on various platforms. For example, if they are not comfortable with teaching a certain unit, they find it easy to ask for help from someone with experience and they also willingly assist where they are needed.

Voluntary engagements. The HoDs acknowledged that the DTVE graduate teachers are very effective when it comes to voluntary assignments. These include administrative duties such as committee memberships and sports duties. This makes it easier for them to learn some duties in advance and in that way it becomes easier for them to be recommended for higher positions, further education, and workshop attendance which in turn creates a friction between the graduates and other teachers who might have been longer in the system but did not engage themselves in extra duties. One HoD gave an example that some minutes before the interview there was an argument whereby one of the teachers came to complain that they have not been allocated a space to attend a workshop. The HoD explained to the complainant that: "I am looking at those little extra things that will make you stand out. I know you work hard at teaching but all of you are teaching and what I am looking for is something else" (College A). By being active, the graduates stand a better chance to achieve most of the performance objectives in the Performance Based Reward System (PBRS)

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because the objectives are not only about teaching. According to the HoD the graduates are heavily involved and they mostly rely on them for many duties. This helps the colleges a lot because there are positions which were dissolved by the Government basketing system but the duties for those positions remained and it is unclear who should perform them, and that is where the graduates come in handy. One of the ways colleges are run is by delegating authority to the lower level teachers as a way of grooming them to be recommended to posts of responsibilities when opportunity comes. According to the HoDs it is becoming much more difficult for them to delegate because of the teachers' resistance due to many factors. Some teachers are reluctant to do those assigned duties because when a position of responsibility becomes available, someone who has not been delegated to perform the duties gets hired. This leaves the DTVE graduate teachers, who normally agree to take challenges such as agreeing to be delegated during times of need, feeling bitter and embarrassed and some are now reluctant to continue doing voluntary duties.

Summary of Research Question 2 analysis

As for Research Question 2, three themes were derived during the analysis. These are: Teaching methods; DTVE graduate teachers' ability to discipline learners; and Voluntary engagements. These themes have been arrived at after scrutiny of the HoDs interview data and have been used to analyse the data.

Analysis of Research Question 3 - What does the instructional practice show about the relevance of the DTVE programme?

This section satisfies Level 3 of the Conceptual Framework. Level 3 of the Assessing Training Effectiveness model deals with the transfer of skills, knowledge and attitudes which have been acquired from a training programme. It determines how the graduates transfer the

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skills, knowledge and attitudes they have acquired at FCTVE to their everyday work environment. If the graduates have acquired some learning from the DTVE programme, it should show the skills, knowledge and attitudes in their everyday working environment both in and outside the classroom. Classroom observations looked at this area to establish if the graduates' behaviour has been affected by the learning programme. There were several areas in the observation guide which were used to address the question. These areas are: Lesson preparation; Teaching methods; Resources used for teaching; Classroom management techniques; and Learner activities. These items sought to determine whether the teachers use the teaching methods they have learnt from the DTVE programme to deliver BTEP. The observation guide focused on the core pedagogical methods the teachers were using in relation to the instructional approach in which the teachers were trained. After coding the data, five themes were arrived at, as follows: Lesson preparation; Teaching methods; Resources used for teaching; Classroom management techniques; and Learner activities.

Lesson preparation. It was observed that the teachers take a lot of time to prepare for lessons. Almost every little detail is planned for in order to minimise surprises which might disorganise a lesson. Table 11 is part of a lesson plan extracted from an observed teacher in College A. It shows that the teacher is prepared for what will be taking place at every time interval.

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Table 11: Development stage of lesson plan from College A

Stage	Time	Grouping	Teacher Activity	Learner Activity	Content/ Resources
Activity 2	5 mins 5 mins 5 mins 40 mins 25 mins	Groups of 4	a) Divide the class into groups of 4 learners in each group. b) Distribute the task sheet and explain the task to the learners. c) The teacher to recap on ground rules of learners working in groups. d) Monitoring and checking progress of the groups. e) Randomly select members from each group to make presentations on their findings. Observe presentation and give feedback after each group presents.	a) Getting into their groups. b) Ask questions and seek clarifications regarding the task sheet. c) Brainstorm and discuss. d) Presenting the findings to the rest of the class, invite questions, make comments and ask questions. e) Answering questions. f) Making notes.	a) Task sheet b) Bostick c) Manila paper d) White board e) White board marker

As the extract in Table 12 indicates, preparation is very important to the teacher. Even for the Individualized teaching method (see Chapter 2) which one of the observed teachers used, there was a lot of preparation which was made for each learner. In this class five tasks were prepared and each learner was given a task that catered for their individual

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challenges with the topic. These challenges had been identified by the teacher during the previous lessons.

Table 12: Learning problems identified and the proposed action to be taken

Learner	Problem of learner noticed	Action taken
A	The learner had a problem with differentiating columns and rows in excel, and reading an excel graph.	Give the learner a revision exercise related to the PC. The learner will complete activity 1 and other alternative activities.
B	The learner had problem with identifying rows and columns of excel and reading the excel graph.	Give the learner a revision exercise related to the PCs. The learner will complete activity 1, activity 2, activity 3, activity 4 and activity 5.
C	The learner had problem stating sources of gathering information, use of spread sheet, identifying rows and columns of excel and reading a excel graph.	The activities relating to the learner's problem have been prepared. The learner will complete activity 1, activity 2, activity 3, activity 4 and activity 5.

The learners completed the tasks on their own with assistance from the teacher where necessary. This helped the learners to concentrate because no learner was taught what they already know.

Apart from document preparations it was observed that the teachers arranged for the classrooms to be tidied before the lesson and the tables and chairs are organised and well placed to cater for the sitting arrangement that the teacher has already determined. The lighting and the sockets were checked before the lesson to find out whether they were in good working condition. The classrooms in most colleges are not well maintained. This forces the teachers to settle for an unsuitable area to project lesson materials because that would be the only area with a working electric plug. On the other hand the classrooms are not designed to use the overhead and the multimedia projectors because there do not have curtains to block the light and that affects the visibility of the screen. Also for the multimedia projector the white screens are not installed or some are not working which forces the teacher to use a wall. In one of the classes the lower part of the wall was painted dark green which left the teacher

with a small white part which made the teacher to reduce the screen size. Thus the process of lesson preparation involved the teachers in trying to overcome the physical limitations of their classrooms.

Teaching methods. The researcher observed that the teachers mainly use the learner-centred approach. In the seven observations made, only one teacher used a different method called the Individualised learning method while the remaining teachers used two types of Cooperative learning. For the Cooperative learning method five teachers used the Brainstorming technique while one used the Think, Pair, Square, Share technique. The main challenge that hindered the teachers from fully implementing the learner-centred methodologies was that the learners seem to be struggling a lot with speaking English. This made the teachers to constantly remind the learners to use English most of the time. In some instances the teacher would remind the learner to use English even before the learner started the presentation. It was also noticeable that even the teachers were forced to use Setswana to explain some concepts to the learners, and that was the moment the learners showed some understanding of the concept being explained.

As stated earlier the teachers showed that that the teaching method that they use to implement BTEP is learner-centred. The learner-centred approach had characteristics which were outstanding throughout the observations. One of the learner-centred practices that was visible during group presentations was the questioning techniques used by the teacher to probe the presenter to clarify points which were vague. It came to the attention of the observer that most of the questions asked by the teachers were open-ended which encouraged the learners to further shed light on a particular point at hand. The example below took place during an observation of an ICT class at College C. The teacher asked the learner: "Please explain to the class what you meant by starting a Word document". The learner, with the help of the group members, explained the whole process of starting a Word document to the

class in chronological order. Then the teacher asked another question: "Earlier you mentioned mainframe and supercomputers as larger computers, can you clarify to the class in what terms of their largeness were you referring to?" The presenter seemed to have been providing mixed information on the asked questions so the group which the presenter came from was asked to assist, and then the whole class was given an opportunity to say what they thought before the teacher made a final comment. In most cases the learners would ask questions and the teachers would throw the questions back at the learners. This scenario was visible in most observations that were made. The questions were also asked by the teacher in order to direct a group to focus on points which the discussions were based on, which were later provided as a form of a handout.

In some observed classrooms the learners were reluctant to interact with others during group discussion. The teachers would encourage them to work in groups and remind them about the benefit of cooperation. In cases where some seemed not to be paying attention, the whole group would be reminded that the presenters will be chosen at random. This made the group members to engage each other on the given task because they would not want to be embarrassed when their group does not do well. This arrangement allowed the learners to work together and learn amongst themselves. It also defined the role of a teacher as the one who facilitates learning.

Resources used for teaching. The teachers who were observed relied on a variety of resources to do most of the activities. The whiteboard was used sometimes during presentations by the teachers when they clarified some concepts which have arisen. The learners used lined papers during brainstorming and then used manila paper for presentations.

Teachers who opted for the brainstorming method of cooperative learning had their materials in the form of powerpoint slides. Amongst the powerpoint slides that were common were the ground rules and lesson structure (Learning Outcomes, Performance

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Criteria, Range Statement as well as Introduction, Development and Conclusion). There was evidence that there were not enough powerpoint projectors in colleges. The ones used by teachers were booked a day in advance and even if the teacher had booked it, it could be diverted to an area of priority, and sometimes that will be outside the college. This scenario forced the teachers to make alternative plans like the use of handouts in the form of printed materials. This practice proved to be wasteful to resources that were already scarce.

Classroom management techniques. The researcher observed that the teachers carried out classroom management throughout the lesson. Most of the time the learners were occupied which makes the class less disruptive. There were instances where the learners were interrupting the class activities and the situation was addressed as soon as it started. The most outstanding procedure that was used to prevent a disruptive learning environment was the use of ground rules which are introduced at the beginning of the class and are agreed by the teacher and all the learners. When the ground rules are drawn the learners contribute by either making additions or subtractions to ones the teacher brings. Then they agree on the sanctions in case one breaks the ground rules. An example of the ground rules extracted from an observed lesson at College B which were on powerpoint slide is shown below:

Figure 1: Ground rules for lesson used to control the class disruptions
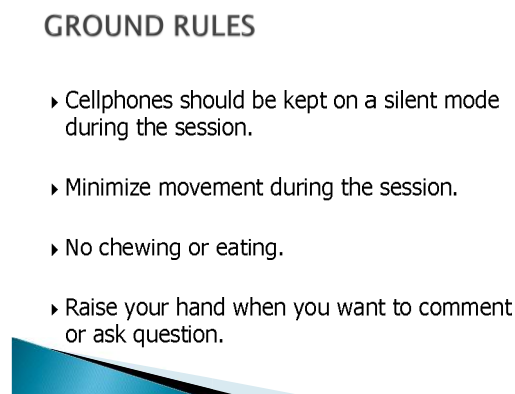
The class decided that cell phones should be switched off instead of muting then they agreed on the ground rules. The sanction was that anybody who breaks the ground rules should be

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sent outside. This gave the teacher the ability to manage a class with less resistance from the learners. The teachers dealt with the situations as they arose at that particular time.

Another way which the teacher used to manage the class was the sitting arrangement of the learners. During teaching approaches such as the Brainstorming and Think, Pair, Square, Share methods, the groupings were decided by the teacher. In that way there was no confusion of who sits where and this saved time and made the classroom environment manageable.

Learner activities. During the observations the researcher realised that the learners were very active and they came out with most of the learning materials. They were engaged from the beginning of the lesson to the end. The most common activities for the learners were when they were given tasks to work on and then present. This was done by the use of a task form. An example of a task form is shown below. This is extracted from an observed lesson from a teacher who is from the Department of Hospitality and Tourism. It was a task form on eggs.

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Figure 2. A task form followed by the teacher to guide learners through tasks.

TASK
Instructions
Working in groups of 4 designated by the teacher, do the following:

- Work on the task below. Each group will be assigned with a different question.

- Discuss your ideas and answer all questions below in the space provided.

- Transfer your answers on the manila sheets provided by the teacher.

- Be ready as anyone will be randomly chosen to present your ideas to the rest of the class.

- Make your own notes as other groups make presentations.

Questions

Group A

1. Describe all the quality points to be considered for the selection of eggs.

Group B

2. Discuss appropriate cooking methods suitable for eggs. Give two examples of dishes for each method.

Group C

3. Describe appropriate storage conditions used in the hospitality industry for eggs.

Group D

4. Describe the uses of eggs in food preparation.

Time: 40 minutes

After all the groups have presented, when one combines all the information they have come up with, the whole lesson for the day is complete. This cannot be achieved if the learners are not actively involved.

Some challenges which teachers face are absenteeism from school. If a teacher has prepared a task for a class and some of the learners absent, it jeopardises the lesson structure as the groups have to be re-done and it is not easy to do that on the spot. There is a lot that is done by the teacher to determine group structure which includes level of ability, gender and ethnicity. This absenteeism disrupts the arrangements made by the teacher to encourage active learning.

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Summary of Research Question 3 analysis

Five themes were arrived at from the analysis of Research Question 3. These are; Lesson preparation; Teaching methods; Resources used for teaching; Classroom management techniques; and Learner activities. The researcher realised that the teachers made thorough preparations for the observed lessons and these did not necessarily provide a normal classroom situation which took place every day. The teachers treated this observation like Teaching Placement observation because they made the same preparation. This was evidenced by the fact that those teachers who were not being observed were relaxed while the one who was going to be observed would look very busy. However, the above descriptions show what was visible in the classrooms using the observation guide. In sum, the researcher interpreted that teachers in visited colleges make comprehensive preparations for their lessons, actively interact with learners during lessons, use powerpoint presentations for various stages of the lesson, organise sitting arrangements for learners according to the nature of the learning activity and gender representation. They also encourage learners to work together.

Conclusion

The researcher analysed the responses from data collection and came up with themes from each Research Question. Analysis of Research Question 1, which covered data from interviews with DTVE graduate teachers, produced five themes, which are: The relevance of course DTVE course content; The relevance of the structure of the DTVE curriculum; The teaching methods for BTEP; The quality of trainers at FCTVE; and BTEP assessment. Research Question 2 analysis, which dealt with HoD interview data created three themes, namely: Teaching methods; DTVE graduate teachers' ability to discipline learners; and Voluntary engagements. And finally five themes were derived from Research

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Question 3, which analysed data from classroom observations. These are; Lesson preparation; Teaching methods; Resources used for teaching; Classroom management techniques; and Learner activities.

Interviews with the DTVE graduate teachers revealed that the course content was relevant to teach BTEP, though it needed improvements in some areas. The structure of the DTVE programme also suited them. They pointed out that workload could be reduced and a lot of it was repetitious. Most of the graduates enjoyed the learner-centred approached and believed that it was the best method to teach BTEP. They also believed that FCTVE did a good job of equipping them with the various learner-centred methods. The graduates believed that the quality of trainers at FCTVE was good. They however realised that the quality was diminishing with time. Even though the graduates acknowledged that they had been taught portfolio assessment, they believe they should be taught using actual portfolios.

Interviews with HoDs disclosed that they see little difference in the method of delivery by DTVE graduate teachers because they also use teacher-centred approach. But they admitted that the DTVE graduate teachers were competent with the teaching of BTEP. The HoDs revealed that the DTVE graduate teachers are exceptional when it comes to interacting with the learners. They also declared that the graduates can easily be approached to assist where needed with extra assignments.

The classroom observations showed that before lessons, teachers take a lot of time and effort to make preparations for the lessons to successfully be delivered. This made the lesson to run smoothly because most details are carefully planned for. The teaching methods they use are mostly learner-centred and they follow the same style and pattern they have learnt at FCTVE. They seem to enjoy these methods. A lot of resources such as printing stationery seem to be used during the preparation and teaching, but Technical Colleges are hit

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with acute shortage of resources. The lessons were less disruptive because before the lesson started, there were ground rules which were agreed to and were followed. The learning activities engaged the learners. These tasks were made clear and all the learners knew that they could be called to present and this made every learner to concentrate.

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Chapter 5 - Discussion, Conclusions and Recommendations

Introduction

The aim of this Chapter is to present the interpretation of the results found in Chapter Four. Three sections are presented here. The first section deals with the discussion based on the interpretation of the findings of the analysis. The next section elaborates the conclusions drawn from the discussions. Finally, the last section is divided into two sub-sections of recommendations based on the results: recommendations for policy and practice as well as suggested recommendations for further research.

Discussion

The study attempted to find out whether the DTVE programme was relevant for its mandate of training teachers who teach BTEP. Three research questions were used to focus the study and they were also used to discuss the finding of this study. Therefore, the three research questions will also be used to guide the discussion drawn from the results of the analysis.

Research Question 1 - What are the DTVE graduate teachers' perceptions about the relevance of their Diploma?

Key Skills units incorporation into DTVE and BTEP modules. The findings have revealed that the teachers felt uneasy offering Key Skills units which are incorporated into other units. They felt that this was not their mandate. This shows that there are parts of the curriculum in BTEP setup which the teachers feel they are not prepared to teach. It is very interesting to realise that Swartland (2008) acknowledges that stakeholders including learners were consulted when the decision to incorporate Key Skills was reached. Teacher feeling of preparedness is very important because it defines the quality of a teacher to impart knowledge

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to the learners. It is essential for teachers to feel well prepared during teacher training at FCTVE so that they can be effective to help the learners to tackle BTEP. However, Maruatona (1994) stated that in most educational programmes in Botswana the curricula together with the teaching strategies are developed by the Curriculum Development Division with very little or no contribution from the ordinary teacher who is on the ground. In that way the role of the teacher would be to adopt and implement the curriculum. This means that the teacher just plays a passive and role and only adopts teaching practices and curricula assigned by those who are outside the teaching environment. Even though the teacher this is done so that the teachers could chance the way they practice, in most cases this does not (Tabulawa, 1998; Richardson, 1990). In situations like the Key Skills units incorporation, in-service training is normally carried out for the teachers so that they cope with teaching the new strategies.

Though FCTVE graduates have been including the section of incorporating Key Skill units in their lesson plans as a requirement, there is no reason given as to why Key Skills concepts had to be incorporated into BTEP lessons when there is a Key Skills Department that can be utilised to cater for the learners' needs.

Adult education principles. The results confirmed that DTVE graduate teachers believe that they lack adult education principles to teach. Some learners in Technical Colleges are adults from the world of work who have come to obtain in-service training. The graduates have realised that learners at colleges are just taught anyhow regardless of their status and they are not comfortable with that. There are a numbers of different teaching methodologies which have been identified and they are suitable for different age learners. Lieb (1991) emphasized that part of being an effective teacher involves understanding how adults learn best. Compared to children, adults have special needs and requirements as learners. Graduate teachers should be equipped with adult learning skills so that they treat

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their learners as adult learners in the learning process. They should allow the participants to assume responsibilities by doing presentations and becoming group leaders. They have to guide learners to display their own knowledge rather than supplying them with facts (Renner, 1999).

Therefore, it is very important for teachers to be able to distinguish between which methodology they can use for younger learners and those they can use for adult learners. Some learners in colleges are adults and they should be taught as such.

Teaching style used during teaching placement. The results have revealed that teachers have indicated that within the TPs they go for, there is a teaching style recommended for each TP. That is, TP 1 is for cooperative learning only, TP 2 is for experiential learning while TP 3 is for individualised learning (Basupang, 2008). It does not appear practical for the DTVE programme to determine the teaching method for that particular time because the curriculum in Technical Colleges at that particular time might not go well with the particular teaching method the student-teacher is compelled to use. This scenario forces the learners to modify what is being covered at a hosting college to satisfy the FCTVE programme requirements. In other instances the student-teachers would pick a suitable topic for that teaching style and teach so that they would pass, even if it is not in line with what the learners are currently learning. The units and the topics of that time should determine the best method to use.

Teaching resources at FCTVE and other Technical Colleges. The analysis of the findings has shown that DTVE graduate teachers were satisfied with the amount of teaching resources available to them at FCTVE during training. They also believe that they are equipped with the necessary skills on how to use these resources to teach BTEP. The problem now came when they were assigned to TCs to teach. They realised that there was an

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acute shortage of resources and now they had to resort to other methods which they are not trained to use. Furthermore, these are not the methods recommended for BTEP.

It has been found out that some of the shortages are caused by administrative principles. An example is a case whereby the administration turned down an opportunity to have a wi-fi network connected in the college because they feared that the learners will use it for social networking. If the wi-fi network is connected it would de-congest the learners from the computer labs as those who could afford their own laptops will work from anywhere anytime within the school even if the lab is closed and even during weekends. Since in most cases the BTEP learners work in groups, they can find somewhere they can work without disturbing others (discussions are not allowed in most labs, and this makes it difficult for groups to have access to the internet).

As the National Policy on Vocational Education and Training (Republic of Botswana, 1997) recommended, FCTVE concurred and equipped their graduates with ICT skills. The main challenge was that the facilities that the graduates were going to need to teach using ICT were not available at colleges. This means that BTEP is not delivered using ICT and as such the learners are not being exposed to ICT. As found in the classroom observations, most teachers used ICT but there were challenges of classrooms having damaged electric plugs and no reflective white screen. This shows that only those who were being observed had access to the only projector in the college and those who were not being observed and having classes at that moment did not have access to the multi-media projector. This shows that at any given period only one class is having access to that equipment and the others are not. This makes it difficult for the teacher to impart BTEP curriculum knowledge to the learners. Also, the learners usually present to other learners using the projector and as such they learn the skills of using the equipment which can benefit them later in life when they are presenting work-related materials to their clients later in industry.

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Unbearable workload. The findings also revealed that the teachers have experienced too much workload in the DTVE programme which leaves little room for practice and internalisation of newly acquired information. On average each learner would produce two portfolios for each module. This poses financial issues especially on the consumption of stationery such as printing paper and toner. As the graduates pointed out, some of the workload they encountered could have been avoided because it was repetition of some activities they have already covered in other modules. On the other hand some modules seem to have overlaps of others. An example would be that of DP01 (Plan for effective learning) and DP02 (Prepare resources to support learning) whereby these modules cannot be independent of each other, one cannot plan for a lesson without including resources. The researcher would concur with recommendation of the National Policy on Vocational Education and Training (Republic of Botswana, 1997) that the introduction of e-learning can help remedy the situation. This idea was also mentioned in National Development Plan 9 but never materialised. The student-teachers would submit work online and receive feedback online. In particular this move would help those who are on distance mode as they would not have to travel to Francistown for assistance. This will also help the student-teachers gain technological knowledge which will help them in future.

Student-teachers only teach during assessment. During TP, it is a normal expectation that the student-teachers are given classes to teach and are assessed in some of the lessons. This means that they should have time to practice teaching on their own before being assessed. However, the findings revealed that due to a lot of paper work that was necessary for one to be assessed, the student-teachers only asked for classes to teacher assessment time. There are many documents and checklists which need to be submitted to the teacher attached to the college for marking. After marking feedback is given to the student-teacher for correction which further requires more documents. After the student-

teacher has satisfied the teacher with the document, an assessment can now take place. If the student-teacher fails this assessment, the process is repeated until the teacher passes the assessment. For the student-teacher to pass the assessment, they have to satisfy each of the items in the assessment checklist which has 10 pages. If the student-teacher misses only one item, they have failed.

Because of the intensity of the amount of work which needs to be done by the student-teachers for them to be assessed, it leaves them with no time to do teaching on their own. This translates to a situation in which the student-teachers do not practice teaching during TP, they just go there for the purpose of getting an assessment that is required by FCTVE programme. This issue creates tension between FCTVE and the colleges to a point that the student-teachers may not be able to acquire classes to teach. This has brought a situation whereby some student-teachers would get some nearby learners to teach for the purpose of being assessed.

It also has to be understood that some of the learners from FCTVE are pre-service learners who have never had a teaching experience before. It is not easy for them to be assessed the very first time they teach a class.

Learners expect teachers to provide knowledge. The teachers expressed that even though they use the learner-centred approach to teach BTEP, most learners would prefer to be taught using the teacher-centred style. This might be due to the fact that from the early stages of basic education, the learners have been exposed only to the teacher-centred one. The learners view themselves as the recipients of information and the teacher as the giver. The learners also view the teachers who practice learner-centredness as the ones who are lazy to do their work or as teachers who do not know their materials and depend on the learners to do it for them. This is made worse by the fact that there would be some teachers within the same department who would be using the teacher- centred approach. Interviews showed that those

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teachers who use teacher-centred approaches finish the curriculum on time and also spent a shorter time in the class. The teacher-centred approach also is not highly affected by late-coming or absenteeism of learners as compared to the learner-centred one.

Induction of new teachers at FCTVE. The findings also pointed out that newly appointed teachers at FCTVE were obviously lost when they were delivering materials. These are the teachers who have not done the programme but generic teaching qualifications from elsewhere but are expected to teach OBE. The conclusion drawn from this is that induction of new staff members at FCTVE was bothersome. As indicated in the findings, new staff members had to fend for themselves and in the process others gave up.

Research question 2 - What are the perceptions of the Heads of Department of these graduates about the relevance of the DTVE programme?

In-service training. The findings confirm that teachers who have not done a DTVE programme use traditional methods of teaching like lecturing which are not recommended for BTEP. Though it has been recommended in various policies such as the Revised National Policy on Education that these teachers need to be in-serviced so that they teach according to BTEP recommendations, it is apparent that FCTVE does the in-service but the main problem is that these teachers have to leave their workstation and become regular learners which most turn down. Botswana Training Authority (2010b) study has advanced reasons by teachers who did not opt to go for training, such as the issue of half salary for some government employees if training takes more than one calendar year. The other issue is that of the government policy that one cannot be promoted if they are on study leave. The researcher agrees with scholars such as Swartland (2008) that these teachers need to be in-serviced because in the long run, it will benefit the economy. Government departments which are directly involved such as Human Resource Development (HRD) in the Ministry of Education

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and Skills Development (MoESD) should engage measures that are favourable to teachers. The move will benefit the smooth implementation of BTEP.

Teacher – learner working relationship. Findings disclose that the HoDs have observed that DTVE graduate teachers have a positive professional relationship with their learners. This is not surprising because the learners have disclosed that the trainers at FCTVE had a good professional relationship with them. There is a module which they have covered called DE02 – Improve own professional practice, whereby they were taught the art of behaving professionally in the work environment. This module teaches the graduates how to have professional relationships with both colleagues and learners. The graduates prove that they practice the skills they have acquired at FCTVE.

A positive teacher-learner relationship is vital to a teaching-learning environment. It has been emphasized that

> bad teachers distance themselves from the subject they are teaching—and in the process, from their students. Good teachers possess a capacity for connectedness. They are able to weave a complex weave of connections, among themselves, their subjects and their students so that students can learn to weave a world for themselves (Renner, 1999, p. 11).

Lack of knowledge of disciplinary procedures. The results have identified that HoDs have realised that teachers in colleges, including DTVE graduate teachers, are having a hard time when it comes to dealing with learner discipline. The mode of discipline which they are following is known as Guidance and Counselling. As shown in the findings, it is a challenge to teachers. Even though findings indicated that DTVE graduate teachers generally know how to handle the learners during class, there are those few instances where there is need to discipline a learner. It seems that when that time comes, the teacher just take the learners to the HoD without first dealing with the learner as the HoD expects.

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The role of volunteerism and delegation of authority. The findings have also disclosed that HoDs realise that DTVE graduate teachers are keen when it comes to delegated or volunteer work. This seems to reflect that the DTVE programme does a good job in producing teachers who are ready to take challenges. The fact that they contribute a lot in committees might be a reflection that they are used to work in a group, the strategy they have acquired and appreciated during group discussions. On doing this they expect to be awarded position of responsibilities when there is an opening but this usually is not the case. Their expectation is strongly supported by Performance Based Reward System (PBRS) policy which aims at rewarding those who avail their services and come up with initiatives that can positively contribute to the economy.

In addition to that, DTVET policy of not recognising teachers with a teaching qualification seems not to benefit DTVE graduate teachers. This frustrates those who have made an effort to acquire the teaching certificate as the system indirectly declares it invalid. DTVET should emphasize the importance of a teaching certificate so that those who do not have it feel encouraged to acquire it. This will, in the long run, help DTVET to have qualified teachers who will be in a position to help with the implementation of initiatives such as flexible learning. By recognising teachers with a teaching certificate this will help motivate these teachers. This will be in line with UNESCO (2012) and African Development Bank (2009) which have emphasised that TVET needs qualified and motivated teachers who would provide quality education.

Research Question 3 - What does the instructional practice show about the relevance of the DTVE programme?

Teaching style used by teachers. Results from the classroom observations revealed that DTVE teachers adhere to the requirements of BTEP when it comes to the choice of

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teaching styles. All teachers who were observed used a learner-centred approach of some sort. Their methods involved and appreciated the learners' prior knowledge in a learning environment where lesson objectives are set by the teacher. Bransford et al. (2000) call such teachers effective teachers. Such teachers value the knowledge brought by the learners. In these classes the dominant feature is that at one point the learners work in groups. Most of the teaching methods centred on cooperative learning methods. The teachers were seen to be active in the group discussions and during presentations. Whatever the teachers and the learners were doing was well deliberated in the lesson plans. Bennett (1991) opined that in order for the students to be involved in cooperatively learning, teachers must structure the basic activities, and be available as resource personnel to monitor and facilitate the learning process.

Learning preferences. The findings of the classroom observations confirm that some learners preferred to work on their own as opposed to working in a group setup. However, these learners were convinced by the teacher to work in groups. BTEP policy, on the other hand, encourages teachers to identify learners' learning preferences and teach them according to their preferences. The policy recommends a learner-centred style which goes hand in hand with OBE. The result of the classroom observations proved that the teachers made a choice of the teaching style from a variety of teacher-centred styles without necessarily bearing in mind the learners' learning preferences. This approach does not cater for those learners who might prefer to learn using styles other than the learner-centred style.

Several experts maintain that learners have a certain trend to manage knowledge and reflect, act and theorize about it in different ways. For instance, Kolb (1976) identified four learning styles. This means that different learners display more tendencies to learn according to a certain style. It is therefore possible for teachers recognize the learning styles of their learners and plan for lessons putting these in mind.

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Equipment at FCTVE not available at Colleges. Classroom observation established that FCTVE has facilities which make Outcomes-Based Education teaching possible. The graduates have benefited from these facilities and they are ready to share that knowledge with their learners. However, this has not been easy as the Technical Colleges lack these facilities. Harvey et al. (1993) has pointed out that when FCTVE was planned, the issue of facilities was considered. These teachers would be trained to use new technologies that require the use of facilities. BTEP also encourages the teacher to use these facilities. On the contrary, the facilities in colleges are in short supply which hinders the proper implementation of BTEP. As pointed out earlier, OBE utilises a lot of reprographic stationery. In that way it becomes very difficult for teachers to implement what they have been taught at FCTVE.

Mixed ability teaching. The results of the observations show that a lot of learners in TCs struggle to communicate verbally in English language. It also became evident that the teachers allow the learners to communicate in Setswana and they also teach using a mixture of those languages. Classes in Technical Colleges are of mixed ability and also of different entry standards. As UNESCO-UNEVOC (1999) has rightfully realised, in one class there are learners whose highest qualification is Junior Certificate (JC) and there are those whose highest qualification is Cambridge 'O' level Senior Certificate (COSC). On the other hand the majority, if not all of these learners did not do well at their final examinations. It is a common practice in Botswana that those learners who have not done well in their final examination are admitted in Technical Colleges and Brigades. These mixed ability classes cause a lot of challenges to the teacher. It has been clear that the teachers lack mixed ability teaching skills.

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Conclusions

To wrap up, the perception of the DTVE graduate teachers about the relevance of the DTVE programme in offering BTEP is that it is relevant even though there are some areas which need to be addressed. First of all, the DTVE programme is offered as an OBE programme. This is suitable to BTEP as it is also offered as an OBE programme. The methods that are used to teach BTEP are the same methods that the graduates have experienced when they were training at FCTVE. The assessment processes that BTEP uses are similar to the assessment that the DTVE programme use. BTEP uses portfolios to present evidence and the DTVE programme does the same.

FCTVE does a good job of imparting ICT skills to the graduates. The graduates are knowledgeable on such skills as the production of powerpoint slides, the operation of a multi-media projector, the production of OHT transparencies, the operating of overhead projector. The graduates are also well informed about basic computer skills as well as searching information from the internet.

The graduates also proved to be skilled with the production of lesson plans. The lesson plans they produce are intensive and cover every aspect of the lesson. The graduates could design task sheets which are clear as to what the learners should be doing. The handouts provided towards the end of the lesson showed quality. This makes the teacher to be highly prepared for the lessons.

FCTVE also adequately equips graduates with the knowledge of delivering learner-centred lessons. During these lessons the teacher would be in control knowing what to do and intervening when there was need. There are various learner-centred methods which teacher teachers are knowledgeable. The most widely used was brainstorming.

The content of the DTVE programme is relevant to BTEP. It is just that the content is too much but that is an area that can be remedied easily. The graduates have mentioned

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repetition of material among the modules. If this can be remedied it can reduce the burden of having to deal with a lot of unnecessary work. There are some materials which can be added to the programme to make much more relevant. The issue of adult education philosophies can be introduced while Guidance and Counseling can be improved by making it much more practical.

The quality of trainers who teach the DTVE programme used to be very good. When the programme was in Gaborone, the trainers were the ones that designed the programme and they understood it thoroughly. It seems the recommendations of NPVET that the structure of a proposed teacher training college should be in such way that it attracts teachers of high caliber and retains the existing ones were ignored. The NPVET recommendation was in line with UNESCO (2012) when they stated that the living conditions of TVET teachers were crucial for effective learning. When it moved to Francistown the experienced trainers started leaving the programme for various reasons. Some were expatriates and their contracts were not renewed. Some resigned and relocated to places with better working conditions. The conclusion drawn here could be that the conditions of service at Francistown are not conducive to the trainers. One of the reasons might be that CTVE was a college in Gaborone but when it moved to Francistown, it became a department under a technical college. In that way the trainers found themselves working at the same level with the people they are supposed to be training. The departure of these trainers meant that they were replaced with new trainers who were not familiar with the programme. This affected the quality of trainers. As the Polytechnic of Namibia (n.d) believes, if the quality of trainers is poor, the quality of the graduates is going to be affected and their learners are also going to be affected. In conclusion, the quality of trainers at FCTVE is questionable.

FCTVE products understand and carry out BTEP assessment. They guide the learners well in the portfolio building exercise, the skill they have learnt from FCTVE. The skill they

are not comfortable with when they join the work environment of teaching, is that of portfolio assessment. This is summative assessment. FCTVE has made a good effort of including a unit teaching the learners on how to assess BTEP evidence. This unit is well taught but it should be much more practical and allow the graduate to have a feel of a real BTEP portfolio. Harvey et al. (1993) have stressed that FCTVE should be a teacher training college that will emphasize theory and practice on equal footing. During TP the learners are busy planning for assessment and they miss a good chance of being involved in activities like portfolio assessment. The issue of equipping learners only with theoretical knowledge is not new to DTVET. As Richardson (2009) has noted, BTEP has been criticized by industry for failing to produce graduates who are very good with theory knowledge but lack practice. The Technical Colleges do make an effort to remedy this deficiency. They attach graduates to experienced mentors who guide them through portfolio assessment. The main challenge here would be that the graduates receive mixed information from different mentors. It would be much better if the practical aspect of portfolio assessment is included in FCTVE curriculum so that the information they receive is approved official information. For formative assessment the FCTVE graduates are well prepared for. After lessons they give the learners a short quiz to determine the level of understanding. Individual and group assignments are also given to the learners on a regular basis. The knowledge gained from these assignments help contribute to portfolio building.

It can also be concluded that the DTVET policy of awarding positions of responsibility does not recognise the extent by which one makes meaningful contributions to the organisation. This move does not encourage productivity in the workplace as there is no clear incentive for hard work.

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Recommendations

Basing on the discussions and the conclusions, the following recommendations for policy and practice are proposed:

Recommendations for policy and practice

1. The issue of Key Skills Units incorporation should be looked into and revised. If it does not serve any purpose it should be removed. If it serves a purpose teacher trainees should be properly trained on the Key Skills so that they feel comfortable on the issue.

2. FCTVE should incorporate principles of adult education in the training programme to ensure that the graduates are in a position to implement the adult education philosophy in their teaching.

3. Technical Colleges should be equipped with the necessary resources as these are essential for the successful implementation of BTEP. Even though the teachers are trained to improvise when there is shortage of resources, there are cases whereby improvisation cannot work as what may be needed may be financial. An example will be whereby a college does not have a powerpoint projector.

4. On FCTVE teaching staff there is need to:

- Re-train staff members with generic qualifications to understand OBE.

- Employ staff with appropriate qualifications to enhance the programme delivery.

- Improve the conditions of staff at FCTVE so that in the long run there would be experienced and competent staff.

5. Basing on these it is recommended that FCTVE should take education to the people and provide training of essential teaching and ICT skills needed for BTEP. This can be done during vacation by visiting different colleges. Galvez-Martin (2003) advised that such training can even take few hours but make a difference on one's teaching experiences.

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6. DTVET should be seen to be encouraging productivity in the workplace by rewarding those who help implement the organisation's principles.

7. All learners' learning preferences should be catered for if the topic permits.

8. FCTVE should incorporate mixed ability teaching in the DTVE to enhance the capacity of the programme to produce teachers who will be equipped with the skill.

9. A grading system that will clarify the difference in the learners' performance would help to reduce high failure rate that affect human, time and resource management. The study has shown that some learners who fail the DTVE programme fell short on minor processes during TP and were deemed to be failing. Such learners should not have failed under a grading system.

10. Workshops on OBE should be intensified both at FCTVE and other colleges to establish a common understanding of the concept.

11. Established institutions of training like the University of Botswana should assist with the training of FCTVE trainers.

12. Both the BTEP and the DTVE programmes should be reviewed to accommodate other methods of teaching other than learner-centred methods to further improve the choice of delivery to improve the quality of teaching.

Recommendations for future research

Based on the findings of the study, the following are recommendations for further research:

- Preparations of the Technical College teachers for the implementation of BTEP.

- An assessment of learner disciplinary actions administered by Technical College teachers in Botswana.

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- The implementation of the Performance Based Reward System (PBRS) policy in DTVET.

- Implication of the usage of teacher-centred methods on BTEP in the effects of learners' learning capabilities.

- An investigation into the retention methods of the FCTVE teacher-training department staff by MoESD.

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Appendices

Appendix A - Request for permission to conduct a research study in colleges

University of Botswana

School of Graduate Studies

Department of Adult Education

Private Bag 0022

Gaborone

Tel: +(267) 355 0000

10 October 2014

…………………………………………………

…………………………………………………

…………………………………………………

Attention: Deputy Principal Curriculum

Dear Sir/Madam

REQUEST FOR PERMISSION TO CONDUCT A RESEARCH STUDY IN YOUR COLLEGE

I am a Masters Degree student in the Department of Adult Education at the University of the Botswana. I am currently busy with a dissertation on the topic: An Assessment of the relevance of the Diploma in Technical and Vocational Education (DTVE) in preparing teachers for the Botswana Technical Education Programme (BTEP).

The aim of the research is to investigate the relevance of the Diploma in Technical and Vocational Education to the teaching of Botswana Technical Education Programme.

An assessment of the relevance of the Diploma in Technical and Vocational Education.

The study is in two parts, in-depth interviews and classroom observations. Only teachers with experience in delivering the BTEP programmes as well as their HoDs will be interviewed. Teachers who will be interviewed will also be observed. I intend to carry out this research between the months of October and December at your College.

The interviews and observations shall be arranged at your college's convenience. To maintain confidentiality the colleges and individual HoDs and teachers' identities shall be concealed. The identified colleges are not compelled to participate in the research. However, their participation is highly essential as it will be beneficial to the researcher and the University of Botswana. The information gathered in this study will remain confidential and will be used for research purposes only.

I am requesting that your College completes the attached consent form.

I look forward to your College's participation in this study.

Kind Regards

O. Kgaditswe

An assessment of the relevance of the Diploma in Technical and Vocational Education.

Appendix B - Consent form for the colleges' participation in a research study

Title of Study: An Assessment of the relevance of the Diploma in Technical and Vocational Education (DTVE) in preparing teachers for the Botswana Technical Education Programme (BTEP).

Researcher

Ookeditse Kgaditswe, phone 74471999/71204297, email: kgadee2012@yahoo.com / okgaditsww22@gmail.com

Purpose of the study

Your college is invited to participate in a research study conducted by Ookeditse Kgaditswe. As part of the requirements for Masters Degree in Adult Education at the University of Botswana, I have to carry out a research study. The study is concerned with the relevance of the Diploma in Technical and Vocational Education to the teaching of Botswana Technical Education Programme. The interviews will take between 30 and 45 minutes while the observations will take the entire duration of the lessons. The interviews will be recorded for the purpose of capturing valuable information. Your College has been approached because it has teachers trained for the DTVE programme and are directly involved in the teaching of BTEP. It also has HoDs who are active in the implementation of BTEP.

Risks and discomforts

There are no known anticipated risks or discomforts associated with this research. Therefore I do not envisage any negative consequences for your college in taking part. However, it is possible that talking about your teachers and HoDs' experiences in this way may cause some distress to them. They may choose to skip any question they feel they don't have to answer and they may terminate the interview any time.

An assessment of the relevance of the Diploma in Technical and Vocational Education.

Potential benefits

There are no known financial benefits to the college that would result from your participation in this research. The researcher does not benefit directly or indirectly from this study money-wise. However, it is expected that the TVET system overall will benefit from the findings and recommendations.

Confidentiality and Anonymity

Your college's participation in the study will be kept confidential. I will ensure that no clues to its identity appear in the study. Any extracts from what the participants say that are quoted in the study will be entirely anonymous. The data they provide will be kept confidential.

What will happen to the information which you give?

On completion the data provided will be retained for one year and then destroyed. The results will be presented in the study. The raw data will be accessible only to my supervisor.

Voluntary participation

Your college's participation in this research study is voluntary. Your college may choose not to participate and it may withdraw its consent to participate at any time. Your college will not be penalized in any way should it decide not to participate or to withdraw from this study.

Contact information

At the end of the interview I will discuss with the participants how they found the experience and how they are feeling. If they subsequently feel distressed, they should contact Ms Dimpho Njadingwe at the Office of Research and Development, University of Botswana, telephone: 355-2900, email: research@mopipi.ub.bw, telefax: [0267] 395-7573.

An assessment of the relevance of the Diploma in Technical and Vocational Education.

Authorization

If your college agrees to take part in the study, please sign the consent form overleaf.

An assessment of the relevance of the Diploma in Technical and Vocational Education.

I ……………………………………agree that my college will participate in Ookeditse Kgaditswe's research study.

The purpose and nature of the study has been explained to me in writing.

The college is participating voluntarily.

I give permission for the interviews and observations with Ookeditse Kgaditswe to be digitally recorded.

I understand that the college can withdraw from the study, without repercussions, at any time, whether before it starts or while it is participating.

I understand that the college can withdraw permission to use the data within two weeks of the interview, in which case the material will be deleted.

I understand that anonymity will be ensured in the write-up by disguising the college's identity.

I understand that disguised extracts from the participants' interviews may be quoted in the study and any subsequent publications. I have read this consent form and have been given the opportunity to ask questions. I give my consent for my college to participate in this study.

Name of Deputy Principal Curriculum   Date   Signature

_____   _____   _____

Name of Researcher   Date   Signature

_____   _____   _____

A copy of this consent form will be given to your college.

An assessment of the relevance of the Diploma in Technical and Vocational Education.

Appendix C - Request for interview and observation from teachers and HoDs

University of Botswana

School of Graduate Studies

Department of Adult Education

Private Bag 0022

Gaborone

Tel: +(267) 355 0000

10 October 2014

Dear teacher.

RE: REQUEST FOR INTERVIEW AND OBSERVATION FOR RESEARCH PURPOSES

My name is Ookeditse Kgaditswe. I am a Masters Degree student at the University of Botswana under the supervision of Professor Frank Youngman and I am in the process of writing my Masters dissertation. The aim of the research is to investigate the relevance of the Diploma in Technical and Vocational Education to the teaching of Botswana Technical Education Programme (BTEP).

With this letter I therefore seek permission to interview and observe you as an important role player in the implementation of the Botswana Technical Education Programme.

I will strive to conduct the interview and the observation with minimal disruption to your schedule. I intend to use the substance of the interview comments, opinions, views, etc. in my dissertation but I hereby assure you that the following shall be observed in regard to anonymity and confidentiality.

- Your name will NOT be mentioned in my discussion

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- Your comments may be reported but anonymously. A fictitious name or number will be used.

- The name of the College at which you are a teacher/HoD will also not be mentioned.

You are kindly requested to sign the consent form below before the interview and observation commences.

I look forward to your participation in this study.

Yours faithfully

Ookeditse Kgaditswe (Mr)

An assessment of the relevance of the Diploma in Technical and Vocational Education.

Appendix D - Consent form for teachers and HoDs

Title of Study: An Assessment of the relevance of the Diploma in Technical and Vocational Education (DTVE) in preparing teachers for the Botswana Technical Education Programme (BTEP).

Researcher

Ookeditse Kgaditswe, phone 74471999/71204297, email: kgadee2012@yahoo.com / okgaditsww22@gmail.com

Purpose of the study

You are invited to participate in a research study conducted by Ookeditse Kgaditswe. As part of the requirements for Masters Degree in Adult Education at the University of Botswana, I have to carry out a research study. The study is concerned with the relevance of the Diploma in Technical and Vocational Education to the teaching of Botswana Technical Education Programme. The study will involve your participation in being interviewed on the subject. The interview will take between 30 and 45 minutes and will be recorded. You have been asked because you have had the opportunity to be trained for the DTVE and you are directly involved in the teaching of BTEP.

Risks and discomforts

There are no known risks or discomforts associated with this research. Therefore I don't envisage any negative consequences for you in taking part. However, it is possible that talking about your experience in this way may cause some distress. You may choose to skip any question you feel you don't have to answer and you may terminate the interview any time.

An assessment of the relevance of the Diploma in Technical and Vocational Education.

Potential benefits

There are no known financial benefits to you that would result from your participation in this research. The researcher does not benefit directly or indirectly from this study money-wise. However, it is expected that the TVET system overall will benefit from the findings and recommendations.

Confidentiality and Anonymity

Your participation in the study will be kept confidential. I will ensure that no clues to your identity appear in the study. Any extracts from what you say that are quoted in the study will be entirely anonymous. The data you provide will be kept confidential.

What will happen to the information which you give?

On completion the data you provide will be retained for one year and then destroyed. The results will be presented in the study. The raw data will be accessible only to my supervisor.

Voluntary participation

Your participation in this research study is voluntary. You may choose not to participate and you may withdraw your consent to participate at any time. You will not be penalized in any way should you decide not to participate or to withdraw from this study.

Contact information

At the end of the interview I will discuss with you how you found the experience and how you are feeling. If you subsequently feel distressed, you should contact Ms Dimpho Njadingwe at the Office of Research and Development, University of Botswana, telephone: 355-2900, email: research@mopipi.ub.bw, telefax: [0267] 395-7573.

Authorization

If you agree to take part in the study, please sign the consent form overleaf.

An assessment of the relevance of the Diploma in Technical and Vocational Education.

I……………………………………….agree to participate in Ookeditse Kgaditswe's research study.

The purpose and nature of the study has been explained to me in writing.

I am participating voluntarily.

I give permission for my interview and observation with Ookeditse Kgaditswe to be digitally recorded.

I understand that I can withdraw from the study, without repercussions, at any time, whether before it starts or while I am participating.

I understand that I can withdraw permission to use the data within two weeks of the interview, in which case the material will be deleted.

I understand that anonymity will be ensured in the write-up by disguising my identity.

I understand that disguised extracts from the participants' interviews may be quoted in the study and any subsequent publications. I have read this consent form and have been given the opportunity to ask questions. I give my consent to participate in this study.

Name of participant   Date   Signature

_____   _____   _____

Name of Researcher   Date   Signature

_____   _____   _____

A copy of this consent form will be given to you.

An assessment of the relevance of the Diploma in Technical and Vocational Education.

Appendix E - Request for funds to conduct a research

P O Box 2350 AAD

Poso House

Gaborone

10 October 2014

The Director

Private Bag 00188

Gaborone

Dear Sir/Madam

REQUEST FOR FUNDS TO CONDUCT A RESEARCH

This serves to inform your office that I Ookeditse Kgaditswe of ID No. 9303641 request for funds to conduct a research study. The research study is a requirement for the Master's degree in Adult Education at the University of Botswana. The funds are needed for collecting data from Technical Colleges for the dissertation as a partial fulfilment of my degree.

My research will be conducted in Gaborone, Palapye, Selebi-Phikwe and Maun. My research topic is: An Assessment of the relevance of the Diploma in Technical and Vocational Education (DTVE) in preparing teachers for the Botswana Technical Education Programme (BTEP).

I hope your office will assist me with the funds.

Yours faithfully

_____

Ookeditse Kgaditswe

An assessment of the relevance of the Diploma in Technical and Vocational Education.

Appendix F - Permission to conduct a research from MoESD

P O Box 2350 AAD

Poso House

Gaborone

10 October 2014

The Director

Private Bag 00188

Gaborone

Dear Sir/Madam

PERMISSION TO CONDUCT A RESEARCH

This serves to inform your office that I Ookeditse Kgaditswe of UB ID No. 9303641 request for permission to conduct a research study. The research study is a requirement for a Master's degree in Adult Education at the University of Botswana. The permission is needed for collecting data from Technical Colleges.

The data will be collected in Gaborone, Palapye, Selebi-Phikwe and Maun from Teachers who are offering BTEP and HoDs who directly supervises BTEP teachers. My research topic is: An Assessment of the relevance of the Diploma in Technical and Vocational Education (DTVE) in preparing teachers for the Botswana Technical Education Programme (BTEP).

I hope your office will assist me in getting the permission.

Yours faithfully

_____

Ookeditse Kgaditswe

An assessment of the relevance of the Diploma in Technical and Vocational Education.

An assessment of the relevance of the Diploma in Technical and Vocational Education.

Appendix G - Permission to conduct a research from University of Botswana

P O Box 2350 AAD

Poso House

Gaborone

10 October 2014

Office of Research and Development

Private Bag 0022

Gaborone

Dear Sir/Madam

PERMISSION TO CONDUCT A RESEARCH

This serves to inform your office that I, Ookeditse Kgaditswe, of ID No. 9303641 request for permission to conduct a research study. The research study is a requirement for a Master's degree in Adult Education at the University of Botswana. The permission is needed for collecting data from technical colleges.

The data will be collected in Gaborone, Palapye, Selebi-Phikwe and Maun from teachers who are offering BTEP and HoDs who directly supervises BTEP teachers. My research topic is: An Assessment of the relevance of the Diploma in Technical and Vocational Education (DTVE) in preparing teachers for the Botswana Technical Education Programme (BTEP).

I hope your office will assist me in getting the permission.

Yours faithfully

_____

Ookeditse Kgaditswe

An assessment of the relevance of the Diploma in Technical and Vocational Education.

Appendix H - Permission to conduct a research from DTVET

P O Box 2350 AAD

Poso House

Gaborone

10 October 2014

Office of Research and Development

Private Bag 0022

Gaborone

Dear Sir/Madam

PERMISSION TO CONDUCT A RESEARCH

This serves to inform your office that I, Ookeditse Kgaditswe, of ID No. 9303641 request for permission to conduct a research study. The research study is a requirement for a Master's degree in Adult Education at the University of Botswana. The permission is needed for collecting data from technical colleges.

The data will be collected in Gaborone, Palapye, Selebi-Phikwe and Maun from teachers who are offering BTEP and HoDs who directly supervises BTEP teachers. My research topic is: An Assessment of the relevance of the Diploma in Technical and Vocational Education (DTVE) in preparing teachers for the Botswana Technical Education Programme (BTEP).

I hope your office will assist me in getting the permission.

Yours faithfully

_____

Ookeditse Kgaditswe

An assessment of the relevance of the Diploma in Technical and Vocational Education.

Appendix I - Interview guide for teachers

Research Question 1: What are DTVE graduate teachers' perceptions about the relevance of their Diploma?

I am studying the relevance of the Diploma in Technical and Vocational Education (DTVE) programme in preparation for teaching Botswana Technical Education Programme (BTEP).

I would be very interested to learn from your opinions about DTVE graduate teachers' teaching of BTEP, and I should like to document them. Before we start, I would like to point out that anything you say will be treated in confidence, and that no one, other than myself and my supervisor, will have access to this interview documentation. Your name will not be recorded. If there is anything that you would like to know or discuss before we start, you are free to do so.

Demographic Information

Participant Number _____ College pseudonym _____ Gender_____ Cohort_____

Questions

Q1. Tell me about your background (subject, vocational area).

_____

Q2. How skilled are you at using the teaching methodologies recommended for BTEP?

_____

_____

Q3. What aspects of the DTVE program best prepared you for your current job?

_____

_____

An assessment of the relevance of the Diploma in Technical and Vocational Education.

Q4. Do you think that the learners you teach would prefer a different method of teaching? (Why?)

_____

_____

Q5. What do you consider to be the strengths of the programme? (Trainers, learning rooms, equipment, duration).

_____

_____

Q6. What specific training materials and programs could be developed that would allow DTVE graduate teachers to increase their efficiency in BTEP operations?

_____

_____

Q7. What are your favourite activities when integrating ICT into the classroom? Please give reasons why? (Presentations, portfolio building, Discussion forums, submission through intranet).

_____

_____

Q8. How do you determine the progress/achievements of your learners during the course of your teaching?

_____

_____

Q9. Can you describe any activity, whilst teaching BTEP, for which you feel you were adequately prepared at teacher training college? (List).

_____

_____

An assessment of the relevance of the Diploma in Technical and Vocational Education.

Q10. How comfortable are with executing your lessons and everyday work duties?

_____

_____

Q11. Can you indicate areas you feel need improvements? (Facilities, teaching styles, teacher's relationships to trainees).

_____

_____

Q12. Do you think that the skills you have acquired during from DTVE programme transfer to your teaching? If so, what are the components of those skills? If not, why not?

_____

_____

Q13. How is your classroom sitting environment organised during your teaching? Why are they arranged like this?

_____

_____

An assessment of the relevance of the Diploma in Technical and Vocational Education.

Appendix J - HoD interview guide

Research Question 2: What are the perceptions of Head of Departments of these graduates about the relevance of the DTVE programme?

I am studying the relevance of the Diploma in Technical and Vocational Education programme in preparation for teaching Botswana Technical Education Programme (BTEP).

I would be very interested to learn from your opinions about DTVE graduate teachers' teaching of BTEP, and I should like to documentation them. Before we start, I would like to point out that anything you say will be treated in confidence, and that no one, other than myself and my supervisor, will have access to this interview documentation. Your name will not be recorded. If there is anything that you would like to know or discuss before we start, you are free to do so.

Demographic Information

Participant Number _____ College pseudonym name _____ Gender_____

Department _____

Vocational area _____

Questions

Q1. In your observation, how well does the DTVE programme prepare teachers for the offering of BTEP?

_____

_____

An assessment of the relevance of the Diploma in Technical and Vocational Education.

Q2. By comparison with other teachers at a similar career stage, what would you say about the success of the DTVE graduate teachers?

_____

_____

Q3. If you had another position to fill, would you be inclined to hire a graduate of DTVE program? Why?

_____

_____

Q4. What type of teaching skills do you think the DTVE graduate teachers are competent with?

_____

_____

Q5. What kinds of teaching skills do you think the DTVE graduate teachers are not competent with?

_____

_____

Q6. Are the DTVE graduate teachers capable of meeting BTEP routine challenges? (Work independently, work as a productive team member, communicate effectively in writing, communicate effectively in speech, and demonstrate an understanding of engineering ethics).

_____

_____

Q7. What do you think in relation to the DTVE graduate teachers in handling ICT technology aspects?

_____

_____

An assessment of the relevance of the Diploma in Technical and Vocational Education.

Q8. What is the learner's level of performance on BTEP when being taught by DTVE graduate teachers?

_____

_____

Q9. What do you think is the impact (in terms of lesson delivery) of the DTVE graduate teachers on BTE program, especially on the performance of their learners?

_____

_____

Q10. How best do you believe the success of the BTEP curricula is influenced by the DTVE graduate teachers?

_____

_____

Q11. What do you feel is the achievement rate of the learners taught by DTVE graduate teachers at the end of their courses?

_____

_____

An assessment of the relevance of the Diploma in Technical and Vocational Education.

Appendix K - Classroom observation guide

Research Question 3. What does the instructional practice show about the relevance of the DTVE programme?

I am studying the relevance of the Diploma in Technical and Vocational Education programme in preparation for teaching the Botswana Technical Education Programme (BTEP).

I would be very interested to learn from your opinions about DTVE graduate teachers' teaching of BTEP, and I should like to observe your BTEP lesson. Before we start, I would like to point out that anything you say or do will be treated in confidence, and that no one, other than me and my supervisor, will have access to this observation data. Your name will not be recorded. If there is anything that you would like to know or discuss before we start, you are free to do so.

College pseudonym_____ Participant number_____ Gender_____ Cohort_____

Date of observation: _____

Course (Subject)_____

Title of activity (Topic) _____

_____

A. PREPARATION

1. Has the teacher planned a scheme of work as for BTEP specifications?

_____

_____

_____

An assessment of the relevance of the Diploma in Technical and Vocational Education.

B. CLASSROOM MANAGEMENT:

2. How is the class organised?

_____

_____

_____

_____

_____

3. How learner-centred is the lesson?

_____

_____

_____

_____

C. TEACHING MATERIALS

4. What materials are used? Describe fully.

_____

_____

_____

_____

D. TEACHING METHODOLOGY

5. Describe the main features of the teaching methodology followed by the teacher.

_____

_____

_____

_____

An assessment of the relevance of the Diploma in Technical and Vocational Education.

E. LEARNERS

6. Describe fully the activities done by the learners.

_____

_____

_____

_____

_____

7. What are the learners' thoughts towards the lesson being delivered?

_____

_____

_____

_____

ADDITIONAL COMMENTS:

_____

_____

_____

_____

_____

_____