THE IMPLICATIONS FOR EDUCATIONAL PRACTICE OF PEDAGOGICAL VERSUS ANDRAGOGICAL ORIENTATIONS OF TEACHER EDUCATORS IN BOTSWANA

by

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SUMMARY

This research investigated the educational orientation of teacher educators in colleges of education in Botswana whether pedagogic or andragogic, and how they influence their educational practice. The methods of investigation were, a literature study of belief systems, andragogy and pedagogy as well as the nature of educational orientation, a survey of the educational orientation of teacher educators in Botswana using a structured Educational Orientation Questionnaire (EOQ) adopted from Hadley (Quam, 1998) and a semi-structured group interview to a stratified random sample of student teachers at two of the colleges of education. The results showed that most teacher educators in colleges of education in Botswana had a pedagogical rather than an andragogical orientation. They predominantly use educator-centred rather student-centred teaching methods.

KEY TERMS: educational orientation, pedagogy, andragogy, teacher education, educational practice, educational orientation questionnaire, college of education, teacher educator.

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DEDICATION

This research is dedicated to my late mother who gave me the rudiments of the investing in education and learning; in spite of the meagre resources that were available at her disposal.

ACKNOWLEDGEMENT

Research of this magnitude cannot be the achieved without the help of a number of people. I owe my gratitude to my supervisor Professor MP Van Rooy who patiently guided and offered advice throughout my studies. I acknowledge the support and encouragement of Mr. Michael Kwame Wisdom Nana Gyimah gave me especially when the going got tough. The moral support from Dr. Joseph Mensah motivated me to complete these studies. I thank Dr. Kalua for the timely assistance he rendered me especially towards the end of the study. I thank Dr. Byron Brown for editing the dissertation and the lecturers and students at the six colleges of education for their willingness to participate in the research. Lastly but not least, to my family for the patience they exhibited when I could not join them in family activities due to the studies.

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Chapter 1

Introduction and overview

1.1 Introduction

This research is premised on the strong opinion that learning among student teachers as adult learners is best achieved when they are treated with respect and when their views, experiences and opinions are taken into consideration. It is when learning is made relevant, and is geared towards meeting the physical, social, psychological, emotional and intellectual needs that the student teacher's autonomy, creativity and innovativeness are enhanced. It is the object of this research to investigate whether this premise guides teacher educator practices in colleges of education in Botswana. The research seeks to explore the educational orientations of teacher educators in the colleges of education in Botswana. Within this exploration, the nature of the educators' educational orientations and the specific factors that contribute to the development of these particular educational orientations are investigated. In addition, the study assesses the implications of these orientations on the choice of teaching methods that educators employ in various teaching and learning settings.

This chapter sets the scene for the research. It provides a rationale and background to the research in terms of teacher educator orientations and practices in Botswana. It also explores the theoretical framework upon which the research is based. The chapter further outlines the problem being investigated in

terms of the incongruence between the educational practices of teacher educators with the government of Botswana's educational strategy. It presents a case for the need to explore teacher educator orientations and their impact on teacher educator practices. The aim and objectives of the research as well as research questions are presented in this chapter. The significance, scope and limitations of the entire study are outlined. The chapter ends with the definition of the key concepts used in the study, plus a summary of contents of the subsequent chapters.

1.2 Rationale and background to the research

1.2.1 Educational practices in colleges of education in Botswana

One major characteristic of Botswana's educational system since its independence in 1966 has been the emergence of the teacher education and training institutions and programmes. These institutions and programmes seek to develop the country's stock of human resources and build its teaching capacity, while finding common ground between traditional systems of education and Western type education. In the current education environment in Botswana, teacher education and training is offered by seven educational institutions. These consist of six colleges of education and the University of Botswana (Brown & Schulze 2001:15). The teacher educators in these institutions train teachers for different levels of the education system. For instance, the University of Botswana trains teachers for the Senior Secondary School level, while the colleges of education train teachers for the Primary and Junior Secondary School levels respectively (Hopkin 2000:361). All the six colleges

are affiliated to the University of Botswana, and play key roles in the government's educational strategy.

The University of Botswana is responsible for prescribing the academic standards and monitoring the practices of teacher educators in the colleges of education (Hopkin 1999:697). As the affiliating body that validates the colleges' awards, the University has a responsibility for ensuring that the programmes delivered by teacher educators, and the standards achieved, are of a standard acceptable to the University. This role of the University has the effect of prompting teacher educators to engage in their teaching practices in set ways in order to realise the established standards. However, over the years in Botswana, the monitoring of teacher - educators' practices has mainly been through quality control measures (Brown 2005). According to Hopkin (2000:362), quality control is done primarily through external examining and moderating final year examinations and teaching practice, and through formal scrutiny and approval of courses and programmes. These measures do not take direct account of how teacher educators execute their teaching tasks.

All this means that, while external quality assessment in teacher education and training has focused extensively on teacher trainees' performance, the teaching practices of teacher educators have had relatively modest attention. In recent years however, issues of the teaching practices of teacher educators have caught the attention of scholars, education officials and leaders across the country. Many are concerned about the state of the teaching practices in teacher education and training

programmes (Tabulawa 1998), Tafa (2001), Lesedi (1998) as well as Prophet (1994) have argued that the teaching methodologies most commonly applied in teacher education and training institutions in Botswana do not cater for the learning needs of the pre-service teacher trainees. As adult learners, these trainees have specific well defined needs. In a report published in 1997, Marope (1997b:22) described the teaching situation in the teacher education sector as being based on "…predominantly transmission methods of instruction". These methods are pedagogical in nature and do not often suit adult learners. These and other concerns have pushed the teaching practices of teacher educators increasingly into the public spotlight and often occupy centre stage in national public policy debates.

1.2.2 Teacher educator orientations and practices in colleges of education in Botswana

A key factor that we recognise in the current debate about the teaching practices of teacher educators in Botswana is that the approach educators espouse in the process of teaching is highly value-laden. To this end, Malcolm (2000:25) suggests that in any teaching context, no teaching takes place in a vacuum. This means that even though one's teaching practice may be seen as partly planned and partly spontaneous, an educator's approach to it is shaped by diverse factors, including the educator's personal belief systems (Rogers 1996:48). In acknowledgement of this position, the National Commission on Education in Botswana notes that belief systems influence the educator's perceptions, plans and actions (Botswana 1993). But it fails to urge for greater consideration of these beliefs in educational planning.

Beliefs are premises or propositions deeply felt to be true (Deurwaarder 2000:13). As a consequence of their influence on an educator's educational activities, Quam (1998:15) concluded that the collection of beliefs that an educator holds about the process of learning and teaching, the learning outcomes desired, and the purposes of schools define the educational orientation of that educator. This means that the educational orientations of educators stem from their educational philosophy.

Evidence in the education literature in Botswana and overseas suggests that because the educational orientations of education practitioners, including teacher educators, are defined by personal beliefs, any calls for change in their professional practices are associated with calls for fundamental changes in their belief systems (Deurwaarder 2000; Richardson 1994). The association between the educators' educational orientation and their actual practices in the teaching and learning process appears to have been scarcely understood by education planners in Botswana.

One key observation justifies the above-mentioned assertion. This relates to government's deliberate attempts over the past ten years to shift education practices at the Secondary School level away from an educator-centred to a learner-centred philosophical approach to teaching. Although this change has been mandated (Botswana 1994), Letshabo (2000:298) notes that the push for a learner-centred model in secondary schools across the country has not changed the traditional way that secondary school teachers engage in their teaching tasks. This is probably because a parallel model in the teacher education programmes has not been

developed to support the shift from an educator-centred to a learner-centred model. It is common practice to find teacher educators, who are tasked with preparing teachers for the secondary schools, teaching about learner-centred methodologies but are doing so in an educator-centred authoritarian environment (Sims & Prophet 1997). It is these and other similar anomalies in the education systems that are forcing education officials in the country to rethink the impact of their strategies on practices in the educational settings.

A paradox therefore exists in the teaching practices of educators in the teacher education and training environment in Botswana. This paradox illustrates an inconsistency between the message and the means in the teaching situation: the "gospel" is preached but not lived. Furthermore, it shows that despite public cries for improved teaching in public schools, and mounting strategies thereof (Deurwaarder 2000:13), education officials have not taken advantage of what has become conventional knowledge and practice in the didactic field. This is the need to take account of the educational orientation of educators when seeking to change their educational practices (Armitage *et al* 2005:92).

It is noteworthy to highlight, however, that concerns about the extent that a teacher educator' s educational orientation as framed by his or her belief systems in respect of teaching and learning, and the influence of these orientations on the teaching practices of the educator are not unique to Botswana. In a number of studies conducted in different parts of the world, conclusions have emerged to suggest that, where teacher training courses did not confront teacher educators and teacher

trainees about their educational orientations and beliefs, they tended to design and implement instructions in accordance with the beliefs (about teaching) that they held prior to entering formal training (Brookhart & Freeman 1992; Nemser in Deurwaarder 2000; Olson 1993). This suggests that formal teacher education and training has limited significant impact (Hopkin 1999) on teachers' educational practices. But these studies have failed to indicate why past experiences have such powerful influences on the teaching practices of educators.

In the Botswana context, the nature of the educational orientation of educators who are charged with the responsibility of training teachers for the Secondary School system remains largely unclear or little understood. In conjunction with this aspect, the factors that influence the development of a particular educational orientation are also obscure. Yet an understanding of these and other related issues would contribute significantly towards improved teaching practices among teacher educators.

1.2.3 Theoretical framework for the study

Teacher educators face a dilemma in their educational orientations, whether they should follow pedagogic approaches or andragogic approaches in their teacher education practices. The dilemma stems from the evidence that pedagogic approaches differ drastically from andragogic ones. Knowles (1980b: 43-44) notes that these differences lie in:

- The learner's self concept where the adult learner is often self-directed and independent when compared to children who often have to depend on external motivation and are often dependent on the teacher.
- The adult learner's experiences which provide a rich source of learning while children bring little or no experience to the learning encounter.
- The adult learner's readiness to learn those things that he or she needs to know in order to effectively cope with life situations.
- The adults' view of education as developing competence to perform tasks that they confront in their life situations while children are educated to perform roles in the future.

Based on these differences, the apparent dilemma for the teacher educators is: preparing student teachers to adopt pedagogical approaches in order to master them so as to use them when they finally graduate as teachers of children. On the other hand, they have to make sure that the student teachers' present and future needs as adult learners are met. As Knowles (1980a) and Knowles (1980b), Zemke and Zemke (1984), Jarvis (1996) and Robinson (1992), Terehoff (2002), Whitehead (2005) have indicated, andragogic approaches are necessary in developing autonomous, innovative and creative adult learners.

The assumptions made about adult learners by teachers of adults are dependent on their educational orientation. Educational orientation stems from one's educational philosophy (Quam 1998:15). The collection of beliefs about the student, the teacher and the process of teaching and learning manifest themselves in the choice of methods to use in teaching and learning. An awareness of one's philosophy and that

of others helps to clarify one's position on every day decisions in the teaching and learning arena. The educational orientation questionnaire developed by Hadley (Quam 1998:17-36) indicates whether one's orientation to teaching and learning is pedagogic or andragogic. A pedagogic orientation would result in the use of more teacher-directed teaching methods while an andragogic orientation would result in the use of more learner-centred and individual-centred teaching methods.

The adoption of adult education principles as revealed by the educational orientation of the teacher educator and exhibited through the teaching methods they use underpin the theoretical framework of this research.

This research therefore will investigate the educational orientations of teacher educators at colleges of education in Botswana and how these influence the teacher educators' practices.

1.3 Problem statement

The current approaches to educational practices of teacher educators in Botswana are not congruent with the national educational strategy of encouraging the use of learner-centred teaching methods in schools. There is a need to investigate teacher educator orientations, whether andragogic or pedagogic, learner-centred or educator-centred, in order to find measures to align teacher educator orientations to national education imperatives.

1.4 Analysis of the research problem

1.4.1 Incongruence of teacher educator practices with the national educational strategy

Any cursory observation of the teaching practices of teacher educators in the colleges of education in Botswana would reveal that these practices in general are incongruent with the practices mandated by the government's educational strategy, espoused in the 1994 Revised National Policy on Education, teacher education programmes and the various subject syllabi. Although these education documents advocate for learner-centred teaching methods, many teacher educators have tended to prefer educator-centred approaches, and have presented their lessons in an educator-centred authoritarian environment. Many have failed to change their approaches or model the didactic practices they teach about. Their medium and message are inconsistent. It has also been found that although the teacher educators deal with adult learners, the teaching approaches that they use are incongruent with the needs of these adult learners (Tabulawa in Deurwaarder 2000:114). Could this be due to their educational orientations and a lack of awareness of adult teaching and learning principles?

1.4.2 The need to explore educational orientations

The educational orientations of the teacher educators and the reasons why they adhere to educator-centred approaches are not known. A number of scholars have attempted to offer some form of explanation. Some suggest that the belief systems held by educators about, *inter alia*, teaching, learning, epistemology as well as the deep-rooted ideas about didactics developed from their own educational experiences as learners, impact on whether or not educators implement education innovations or adjust their educational practices (Knowles 1992, Richardson 1994). This is in addition to the generally held beliefs about teaching in the society. It is

argued also that belief systems frame the educational orientation of the educators, which stem by extension, from their educational philosophy (Quam 1998:17). But these issues have not been explored scientifically in Botswana in order to establish the extent that they shape the teaching practices of these educators, or contribute to their unwillingness to change their professional practices.

It is these gaps in the extant literature and fundamental issues in the practices of teacher educators in Botswana that have motivated the need to investigate the teacher educators' orientation to teaching. In this way, it is hoped measures will be suggested so that the strategic needs of the nation are fulfilled. These needs include among others, the development of a teacher education programme that produces graduates that are adaptable, innovative and creative.

1.4.3 Research questions

The analysis of the research problem gives rise to the following general research questions:

1. *What are the educational orientations of teacher educators in the Colleges of Education in Botswana?*
2. *How do these orientations influence the teaching approaches adopted by these educators?*

These questions beg the following specific sub-questions, which should be addressed in the study:

a. Does the length of teaching at a college of education have an influence on the educational orientations of the teacher educators?
b. Does the educational orientation of a teacher educator influence his or her choice of teaching methods?
c. How can present and future teacher educators adapt to take into account educators' educational orientations?
d. How do existing teacher education programmes need to adapt to take into account educators' educational orientations?
e. What experiences do student teachers, taught by teacher educators have during the teaching and learning process?

1.5 Aim and specific objectives of the research

The research questions posed above have given rise to the following general aim of the research:

To determine the nature of the educational orientations of teacher educators in the colleges of education in Botswana.

The following specific objectives relate to the general aim:

(1) To explore the life experiences that may contribute to the development of the education-related orientations of teacher educators.

(2) To determine the role that teaching experience has on the educational orientations that teacher educators have framed for themselves.

(3) To investigate how student teachers experience the learning and teaching process as carried out by the educators.

(4) To determine the most common teaching methods used by teacher educators as perceived by the student teachers.

(5) To recommend how present and future teacher educators can adapt to take into account educators' educational orientations.

(6) To recommend how present and future teacher education programmes can be adapted to take into account educators' educational orientations.

1.6 The significance of the study

The role of teacher educators in the teaching and learning process is well researched and there are a large number of empirical researches written with teacher educators and their teaching approaches as the topic. However, there is a paucity of research on the educational orientations of teacher educators and their impact on the professional practices of these educators in Botswana. This suggests that the area is still relatively uncharted. The results of the study can add to the didactic literature, and contribute to a better understanding of practices in the education sector. The individual managers and education practitioners in the colleges can benefit from these findings and recommendations since they will reveal what the diverse forms of educational orientations are, and how they influence their teaching methods and strategies. These outcomes can enhance professional practices.

At the same time, numerous authors have pointed out that although knowledge about innovation is vital, it is not enough by itself to determine whether educators change their professional practices or implement educational changes (Deurwaarder 2000; Quam 1998, Tabulawa 1998). The belief systems and therefore educational orientations of the educators is equally important (Richardson 1994). Thus, if an understanding of the belief systems and educational orientations of the educators is as important as some argue that it is, perhaps educational organisations like colleges of education should investigate how this characteristic of educators mediate the implementation of the institutions' educational strategy. Once this basic step is understood, managers might be able to implement strategies to better effect teaching and learning. Thus, the study is expected to generate data that can inform future policy decisions, curricula and programmes at colleges of education in Botswana. The research should also lead to improvements in the quality of teacher preparation programmes in the country.

1.7 Scope and limitations of the research

1.7.1 Sites for the research

Botswana has two colleges of education offering the Diploma in Secondary Education (DSE) programme and four colleges of education offering a Diploma in Primary Education (DPE) programme. The research is conducted mainly at two sites, Tonota College of Education (a DSE offering college), and Francistown College of Education (a DPE offering college). An educational orientation questionnaire was administered to all the six colleges and documents were obtained from Molepolole (a DSE offering College), Lobatse, Serowe and Tlokweng colleges

of education (DPE offering colleges). Students from Tonota and Francistown colleges of education were the only ones interviewed. All colleges offer a full time three-year teacher education programme leading to an award of either a Diploma in Secondary Education or a Diploma in Primary Education.

1.7.2 Profile of students and teacher educators

Admission at all colleges is after the candidates have completed a Botswana General Certificate in Education (or equivalent), which is attained after 12 years of education in a 7+5 years system of primary and secondary education. The mandatory minimum school going age in Botswana is 7 years old but children can be admitted to Standard 1 up to the age of 16. The age range on average of those gaining direct entry to colleges of education is therefore 19 to 28. Those admitted at a college of education must have passed English and have credits in at least 2 subjects they are to specialise in. Candidates who are above 25 years of age and those who hold a Primary Teacher Certificate (PTC) may be admitted with lower qualifications.

The age range of students at the secondary college of education is 19 to 33 with an average of 22 to 24 years of age. At the primary colleges of education, the age range of students is 19 to 45 with an average of 25 to 27 years of age. This difference is due to the admission of serving teachers to be upgraded from the Primary Teacher Certificate to a Diploma in Primary Education. The male to female ratio is 3:5 at secondary colleges of education while it is 1:3 male to female in primary colleges of education.

The minimum academic qualifications for a teacher educator at a college of education are a Masters Degree plus a professional teaching qualification. The age range is 27 to 64. Table 1.1 summarises the number of teacher educators in the six colleges of education by gender, and employment terms in 2005.

Table 1.1: Profile of teacher educators at colleges of education in Botswana in 2005

College	Tonota	Molepolole	Francistown	Tlokweng	Lobatse	Serowe
Male	62	*	10	18	*	*
Female	54	*	41	32	*	*
Contract	58	34	2	4	2	5
Local	58	79	49	46	50	49
Total	116	113	51	50	52	54

* Data was not provided

1.7.3 The Diploma in Secondary Education programme

Students pursuing this programme follow a full time three-year course in a major teaching subject from the following list: Agriculture, Science, Mathematics, Home Economics, Moral Education, Business Studies, Social Studies, English, Setswana, and Religious Education. They also study a minor teaching subject from the following list: Agriculture, Science, Mathematics, Home Economics, Social Studies, English, Setswana, Religious Education, Physical Education, Library Studies, Guidance and Counselling. In each of the teaching subjects, students attend a Professional Studies (Teaching Methodology) course for 2 to 4 hours a week. In addition, they study all the core subjects: Communication and Study Skills,

Foundations of Education, Special Needs Education and Educational Technology. During their second and third year of study they spend 12 to 14 weeks in community junior schools for Teaching Practice.

1.7.4 The Diploma in Primary Education programme

Students pursuing this programme attend a Foundations course with subjects in the entire primary school curriculum namely: Agriculture, Science, Mathematics, Home Economics, Art, Craft and Design, Music, Physical Education, Social Studies, English, Setswana, and Religious Education. In their second year they take up two specialist (elective) subjects: Mathematics and Science, Social Studies and Religious Education, English and Setswana, and two subjects from the group Agriculture, Home Economics, Art Craft and Design, Physical Education plus Music. In each of the teaching subjects, students attend a Professional Studies (Teaching Methodology) course for 1 to 2 hours a week. In addition they study all the core subjects: Communication and Study Skills and Foundations of Education throughout the course. During their second and third year of study they spend a total of 55 days in primary schools on Teaching Practice.

1.7.5 Limitations to the research

The first limitation of this study is that despite the researcher's attempt to administer the Educational Orientation Questionnaire (EOQ) to all teacher educators, only a percentage responded to the educational orientation questionnaire.

The second limitation is that not all student teachers at all the colleges of education were interviewed. Only a stratified random sample of 50 student teachers from

Francistown College of Education and Tonota College of Education were interviewed. These are students who were in their final year of study. The estimated number of students in the two colleges (Tonota College of Education and Francistown College of Education) under study who are in their final year is 250 while the total student population of all colleges of education in Botswana is 2350 with about 783 in their final year. The selected sample is therefore 20% of the students in their final year at the two colleges and 6.4% of the student population in their final year in all the six colleges. This percentage is an acceptable representative sample for a research of this nature (Brown & Dowling 1998:6).

The third limitation relates to the age of the student teachers. This ranges from 19 to 45 years of age. Those close to 19 years of age may be construed not to be fully-fledged adults, as opposed to those close to 45 years of age. This limitation is however countered by the argument that these students are above 18 years of age, they have completed the 12 years of primary and secondary education, and have made a deliberate choice to pursue a teacher education programme. They therefore perceive themselves and are perceived by others as adults. These are the characteristics of an andragogue according to Jarvis (1996:43-46).

1.8 Definition of concepts

The concepts below are defined in the context in which they are used in this study. These constitute the working definitions of the study. They are aimed at putting the context of the discussion in this research into perspective and enhance understanding.

1.8.1 Educational orientation

According to Quam (1998:15), the educational orientation of educators stems from their philosophy or belief systems. Thus, in the study, educational orientations refer to the theoretical assumptions that guide educators' practices and choice of methods, resulting from the collection of beliefs about the students, the teacher and the process of teaching and learning. This is formed over time as a result of life-experiences (Quam 1998:15). The assumptions made about adult learners by educators of adults are dependent on their educational orientations.

This study also adopts the dichotomous topology of educational orientations of Hadley (in Quam 1998:17-36), which indicates that one's orientation to teaching and learning can either be pedagogic or andragogic. In the context of this research, educational orientation is restricted to whether the educator has a pedagogic or andragogic orientation.

1.8.2 Teacher educator

In terms of the Teaching Service Act 24 of 1976 (Botswana 1976:3), "teacher" means any person employed in a post in a government or local authority school or in an aided post on a full or part-time basis and possessing such qualification as may be prescribed. In the Republic of South Africa (RSA) National Education Policy, Act 27 of 1996, (RSA, 1996:1) "educator" means any person who teaches, educates or trains other persons in an institution or assists in rendering education services, or education auxiliary or support services provided by or in an education institution. In this study "teacher educator" refers to a lecturer at a College of Education, who

guides the instructional process and is engaged in teacher training, usually in a field of specialisation.

1.8.3 Teacher education

Teacher education refers to the formal process of preparation, induction and continuing professional development of teachers for professional work in the education system (Adeyinka 2000). In Botswana, these teachers are expected to devise and follow curricular activities that would facilitate and enhance the realisation of the objectives of the National Policy on Education, and Vision 2016.

1.8.4 Andragogy

Andragogy is the science that studies the education of an adult as a growing person who is led or “accompanied” by another adult with more knowledge (and experience) in order to gain a better understanding of the realities of adult work (Du Plooy & Van Rooy 1996:4; Quam 1998:71). In the context of this research the term will also refer to the “art and science of helping adults learn” as coined by Knowles in Reischmann (2004). It will also refer to those educational beliefs, practices and methods that lead learners to become self directed and autonomous as well as for educators to be “facilitators” of learning rather than as “presenters of content” (Reischmann, 2004).

1.8.5 Pedagogy

Pedagogy is a part discipline of Education concerned with the accompanying of a child so that he or she can become a responsible adult, as opposed to it being used to describe the study of education and training. In this study, Pedagogy will also

refer to those educational beliefs, practices and methods that relate to the learning of children and adolescents that results in their acquisition of skills, knowledge and attitudes that they will need in the future as they develop into adults (Holmes & Abington-Cooper, 2000).

1.8.6 Didactics

In this study, Didactics refers to the science of, and operating theories for, teaching. Since teaching is dependent on situational and institutional conditions, teaching refers to the various types of instruction - as the specific form of teaching - which appears in schools (Woolfolk, 2004).

1.8.7 Adult teaching principles

These are a set of guiding assumptions about adult education, which view the adult as an independent learner (autonomous), often intrinsically motivated (responsible for his or her own learning), goal or performance oriented and having perspective (Knowles in Deurwaarder, 2000:14).

1.8.8 College of education

This is a higher education institution, offering programmes leading to the award of a diploma in either secondary education or primary education.

1.8.9 Educational practice

Educational practice in the context of this research refers to the tasks that constitute the day to day activities that teachers perform in the process of teaching so that

learning can take place. It includes all the processes that the teacher engages in while planning to teach, how actual teaching takes place and what the teacher does to evaluate the teaching.

1.9 Division of chapters

Chapter 1 Introduction and overview

This chapter outlines the background to the study and the problem under investigation. It spells out the aims, objectives and significance of the study. The research questions, the delimitation of the study and the operational terms used in the study are outlined. The chapter provides a setting for the entire study. The key terms used in the research are also defined and contextualised.

Chapter 2 Educational orientations and belief systems

This chapter reviews literature related to educational orientations and belief systems. The purpose of the review is to provide the theoretical basis for the study by finding out what the views of other researchers and scholars are on beliefs, educational orientations, andragogy, and pedagogy. This review together with that done in chapters three and four, provide a basis upon which the researcher determines the methods to use to collect data for the study. The literature reviewed in this chapter is organised under the following themes:

- The origins of belief systems and how they influence decisions in the teaching learning process.
- The interplay between beliefs and didactic behaviours.

Chapter 3 Dimensions of educational orientations: pedagogy versus andragogy

Chapter 3 explores the relationships between adult learning and teacher education as reported in the literature. It connects what has previously been studied in the area of comparing andragogy to pedagogy in higher education in general, and teacher education in particular. In this way, this chapter complements Chapter 2 in providing a theoretical basis for the research as well as justification for locating the study in colleges of education.

Chapter 4 The influence of pedagogy versus andragogy on educational practice

Chapter 4 discusses the influence of pedagogy and andragogy on educational practice in general and teacher education in particular. It links the theoretical aspects of teaching and learning to their practical application and interrogates the relationship between adult education as entailed in andragogy, with teacher education. In this way the chapter situates the research on the orientation of teacher educators and their practices in the realm of adult education, and further presents the argument that both teacher education and adult education are guided by the same principles.

Chapter 5 Research design and methodology

In this chapter, the main methods of investigation are discussed. There is a detailed description of the participants in the study, the apparatus to be used as well as the procedures to be followed. The main methods of investigation are:

1 A literature study of belief systems, andragogy, pedagogy, and how these influence educational practices in adult education and teacher education settings.

2 A questionnaire adapted from Hadley (Quam, 1998) is used to establish the educational orientation of teacher educators in Botswana's colleges of education. This is to investigate the hypothesis that teacher educators in Botswana have a pedagogic rather than an andragogic orientation.

3 Semi-structured group interviews with a random sample of student teachers at two of the six colleges of education in Botswana.

Data and information obtained through these sources form the basis for analysis and discussion in subsequent chapters.

Chapter 6 Data analysis and discussion

In this chapter, data collected is systematically organised and analysed. The education orientation questionnaires are analysed as single mean scores with the independent variables being college type (whether Primary or Secondary College of Education), experience of the teacher educator, and gender. The data is analysed using the Statistical Products and Services Solutions (SPSS) to calculate T-tests and frequencies. The data is presented both descriptively and statistically. There is also a description and analysis of results of interviews.

Chapter 7 Conclusions and recommendations

This chapter outlines the conclusions and recommendations based on the findings. It also outlines some of the limitations encountered in the process of conducting this study and identifies other themes and areas for further research.

Chapter 2

Educational orientations and belief systems

2.1 Introduction

Chapter one provided an overview of the entire research process as well as projections of what was to follow. In this way, the chapter provided a basis for the review of literature that is related to the study that is presented in chapters two, three and four.

Chapter two presents a review of literature on beliefs and belief systems and how these are linked to the formation of educational orientations. This review is necessitated by the fact that teacher educators' day to day practices are influenced by their belief systems. The chapter concludes with an exploration of the interplay between beliefs and didactic behaviours so as to indicate the link between these two aspects that are central to this study.

2.2 The origins of educational orientations

Educational orientations are the implicitly and explicitly held subjective conceptions that the teacher holds to be true, that influence his or her behaviours in the teaching and learning process. Since their origins stem from what one believes to be true, it is necessary to explore the nature of beliefs and how these influence didactic practice.

2.2.1 Belief studies

Careful review of the psychological literature reveals that beliefs and belief systems are the foundation of a person's didactic perspective (Furinghetti & Pehkonen 2002:40). Beliefs and belief systems began to be explored at the beginning of 20th century, particularly by social psychologists (Leder *et al* 2002:12). Interest in behavioural psychology at the start of that century however diverted attention from belief related studies. It was not until the 1970s when new development in cognitive psychology triggered re-emergence of interest in belief studies (Furinghetti & Pehkonen 2002:39). Since its re-emergence in the 1970s, work on beliefs has found favour in diverse disciplines such as political sciences, history, psychology, sociology, anthropology and social psychology. In terms of education, belief and belief systems are central to educators' educational orientation and practices as it will be explained in the subsequent sections of this chapter and expanded on in chapter 4.

According to Bar-Tal (1990:86), social psychologists have studied different aspects of beliefs, as follows: (a) the acquisition and change of beliefs, (b) the structure and contents of beliefs, (c) the effects of beliefs on individual's affect and behaviours. The variety of disciplines and perspectives from which beliefs have been studied has contributed to a proliferation of different definitions and classifications of beliefs. Bar-Tal (1990:87) concludes that the study of beliefs can be classified into the following four areas: (a) acquisition and change of beliefs, (b) structure of beliefs, (c) contents of beliefs (d) the effects of beliefs. Richardson (1996:103) characterises beliefs as

psychologically held understandings, premises, or propositions about the world that are felt to be true.

On the basis of the forgone discourse, it can be argued that a teacher's educational orientations are the implicitly and explicitly held subjective conceptions that the teacher holds to be true, that influence his or her behaviours in the teaching and learning process. A proposition is believed when the proposition's meaning is represented in a mental system and is treated as if it is true. Thus, a teacher who engaged in teaching as an act of "transmission" may have framed this belief the moment he or she was told that teaching is like that, or the moment he or she perceived teaching to be this way. It is thus clear that a teacher's educational orientations stems from the teacher's beliefs and belief systems developed in respect of the teaching, learning and school processes (Quam 1998:16).

Gilbert (1991:107-115) argues that learners tend to implicitly accept a notion to be true the first time they perceive and understand it. Gilbert (1991:107-109) reasoned that this tendency of uncritically accepting, believing everything we see or hear, seems to be one of the basic mechanisms characterising the functioning of our mind. It is only at a later stage when new propositions conflict with initially held beliefs that we question such beliefs (Gilbert 1991:109). This means there is a possibility that the teaching approaches that teacher educators adopt may have been learned from their past experience as students and, or, informal learning from interaction with others.

2.2.2 The nature of belief and belief systems

Beliefs are viewed by social psychologists as units of cognition (Deurwaarder 2000:113). Beliefs constitute the totality of an individual's knowledge, including what people consider as facts, opinions, hypotheses, as well as faith (Deurwaarder 2000:113). They reflect an individual's understandings and feelings that shape the ways that the individual conceptualises and engages in the world. In other words, they are the individual's subjective knowledge. Silver (in Leder, Pehkonen & Torner 2002:3) explains that beliefs constitute the individual's subjective knowledge about self, and others. When looking at these different characterisations of beliefs, one observes that most of them refer to the static part of beliefs, saying: beliefs are, constitute, are contained, etc. However, Schoenfeld (1992:4) stresses the existence of a dynamic part of beliefs, that is, how beliefs function. Beliefs contain a cognitive, affective and psychomotor component (Thompson 1992:67). In research, there are representatives of these viewpoints. This is why it is often difficult to distinguish between beliefs and knowledge. Beliefs, themselves, however can be differentiated on the basis in which they are formed. In this regard, as Furinghetti and Pehkonen (2002:43) note, it is possible to distinguish: (a) *Descriptive beliefs:* which are formed on the basis of direct experience; (b) *Inferential beliefs*: which are based on rules of logic that allow inferences; (c) *Informational beliefs*: which are formed on the basis of information provided by outside sources. These different aspects of beliefs indicate that beliefs are shaped by experiencing.

Four characteristics of beliefs commonly shared in the literature (Deurwaarder 2000; Leder 1990) include the following: (a) confidence: differentiate beliefs on the basis of truth attributed to the beliefs; (b) centrality: reflects the extent of beliefs in a person's repertoire; (c) inter-relationship: reflects the extent to which one's belief is related to one another; (d) functionality: differentiate beliefs on the basis of the needs that they fulfil. In addition, from as early as 1948, Krech and Crutchfield (1948) recognised the need to identify and describe beliefs, and proposed the following as features to aid their description: kind, precision, strength, verifiability, content, specificity, and importance.

2.3 Interplay between beliefs and didactic behaviours

Beliefs have an influence on the day to day activities of educators. They influence their choice of teaching methods, their approach to classroom management and interaction as well as how assessment is done. An understanding of how this occurs will further inform and enrich this study.

2.3.1 The function of social context

At a very basic level, the belief systems that one holds may be seen as grounded in the social context in which one functions. Beliefs are the products of social life (Phehkhon & Torner 1996:103). Since beliefs frame the educational orientations of education practitioners (Quam 1998), it can be reasoned that the educational orientations that teachers develop are products of their social life. This means they are determined by the socio-cultural environmental one works and lives in. Teacher

educators' beliefs may thus be a function of the classroom practices in which they participated as students.

This does not imply that the individual subjectivity of the educator totally merges into the inter-subjectivity of the classroom. As members of different social contexts, teacher educators are subjected to a very complex and diverse network of influences that determines the "unique" ways in which they find themselves and look at the classroom, school, and teaching context (Pehkonen & Torner 1996:106).

According to Alexander *et al* (1991:315), the ways in which human beings view the world, and interact with it, reflect their understanding of the basic beliefs and fundamental knowledge shared with others: for example members of their family, the intellectual discipline, and other groups with whom they function. An educator's questioning of an initially accepted teaching method is therefore a function of the beliefs and knowledge he or she acquired in other contexts and, or, at an earlier time (Pehkonen & Torner 1996:103-104). Consequently, the same work context can lead to different teaching practices and beliefs by different educators. Prior knowledge and belief systems determine: (a) the choice and interaction with the social context, (b) definitions of the situation, and its consequences (Pehkonen & Torner 1996:103-104).

2.3.2 Educational orientations and knowledge

Arising from the preceding arguments, teachers' thinking, and their learning (as evidenced in their teaching and learning decisions), beliefs and knowledge operate together (Pehkonen & Torner 1996:108). Teachers' teaching behaviour is always directed by what they believe to be true – referring to knowledge as well as beliefs.

As such, from a psychological perspective, educational orientations, beliefs and knowledge are closely linked constructs. They determine, in close interaction, teachers' understanding of specific teaching problems or situations, and subsequent educational orientation choices (Pehkonen & Torner 1996:108). This understanding always implies more than what is made explicit in the knowledge about it (Power & Dalgleish 1997:67).

Ernest (in Leder *et al* 2002:156) takes the same perspective when he describes the three most important elements that influenced the practice of teachers' teaching. One of these elements is the teacher's mental contents or schemas. This incorporates the teacher's knowledge of subject-matter, as well as beliefs about that subject-matter and its modes of teaching or learning.

Although knowledge and personal beliefs about teaching are integrated in schemas or mental models, most authors still distinguish between both constructs (Ernest in Leder *et al* 2002:156). Nevertheless, as the holder of the beliefs, the individual is the only referent for its truthfulness. Beliefs refer to what one holds to be true, regardless of the fact that others agree or not, regardless of the fact that others "know" it to be true (Ernest in Leder *et al* 2002:156). One's educational orientations consist of both beliefs and knowledge. From an epistemological perspective, beliefs are an individual's constructs, while knowledge is essentially a social construct (Power & Dalgleish 1997:67). Knowledge requires a truth condition while beliefs are independent of this validity.

The truth condition entails an agreement in a community that a certain proposition is true, and has met the criteria of truthfulness in that social context (Power & Dalgleish 1997:67). This consensus gives it a higher epistemic standing. Knowledge, however, goes beyond the individual and is situated within communities of practice. This is not to suggest, however, that an individual cannot possess knowledge. Abelson (in Leder *et al* 2002:88) notes that consensuality is not a transparent feature of beliefs, thus one has to transcend the subjective point of view to find out if a proposition that one holds to be true is knowledge or belief. Within the context of this research of teacher educators' educational orientations (which by extension are influenced by their beliefs), it is necessary to bear in mind the mixture of beliefs and knowledge that constitute these orientations.

2.3.3 Educational orientations and choices

Furinghetti (1996:19-20) argues that when you examine an educational orientation that is different from your own, it helps you to "wrestle" with your own thinking. Sometimes this means you may change your mind. At other times it may strengthen your point of view; or be eclectic, selecting what seems best from different belief systems or philosophies (Power & Dalgleish 1997:67). Sigala (2002:29-30) argues that when teaching in a pluralistic society, a variety of views and approaches of teaching are needed. But in eclecticism, there is a danger of inconsistent thinking and choice decisions. Since this is the case, the extent that alternative methods are available to challenge the predominant method of teaching of teacher educators, and the influences of these on educators' teaching practice, should be explored.

From the foregoing discussion, it becomes apparent that one's system of belief shapes and informs one's educational philosophy. For this reason, the educational orientations of education practitioners can be traced to their belief systems. A teacher's educational philosophy is his or her beliefs about why, what and how you teach, whom you teach, and about the nature of learning. It is a set of principles that guides professional actions through events and issues that teachers face daily. Sources of one's educational orientations or philosophy are life experiences, values, the environment in which one lives, interactions with others, and the awareness of didactic approaches (Leder *et al* 2002:114).

2.4 Conclusion

This chapter investigated the concept of beliefs and belief systems as aspects that influence the educational orientation of educators. It was found that indeed an educator's orientation and practices are to a large extent guided by his or her beliefs but that these beliefs are influenced by the social context in which the educator functions as well as the knowledge of what alternatives are available to the educator. In the next chapter, the dimensions of educational orientation, pedagogy and andragogy are examined as a way of understanding how they influence educational practice.

Chapter 3

Dimensions of educational orientations: pedagogy versus andragogy

3.1 Introduction

This chapter discusses in detail the nature of educational orientation. Educational orientations are linked to an individual's theoretical assumptions – assumptions which guide an educator's practices and choice of methods. These often result from the collection of beliefs about the students, the teacher and the process of teaching and learning (Harris 2003:3). Orientations are formed over time as a result of life-experiences (Quam 1998:15). There are two basic (dominant) dimensions into which an educator's educational orientation may be divided, namely: pedagogically directed orientation and andragogically directed orientation (Furinghetti & Pehkonen 2002; Hadley in Quam (1998:18). In the extant literature, discussion about pedagogy and andragogy present the concepts as approaches to teaching and learning operating at two opposite ends of a continuum, based, on the different assumptions about the teaching and learning of children and adults (Arends 2004:5; Harris 2003:1). The two orientations are further discussed in the subsequent sections.

3.2 The nature of pedagogy

The pedagogic model of instruction was originally developed in the monastic schools of Europe in the middle ages. Pedagogy is derived from the Greek word "paid,"

meaning child plus "agogos" meaning leading. In the literature, there are differing views about this definition. While Knowles (1980a:54) defines pedagogy (sometimes referred to as pedagogics) as the art and science of helping children learn, Arends (2004:7) disagrees, and suggests that as an approach to teaching, pedagogy (pedagogics) is the study of the art and science of teaching.

A pedagogical approach may be described as a teacher dominated learning situation (Reece & Walker 2005:62). A large number of research studies have investigated the teacher's role in a pedagogic approach and concluded that it is predominantly active, and the students are rather passive (Curzon 2005:21; Gage in Curzon 2005:22). In the pedagogical model, the teacher has full responsibility for making decisions about what will be learned, how it will be learned, when it will be learned, and if the material has been learned (Bullen 2004:11). Pedagogy is characterised by teacher-directed instruction and places the student in a submissive role requiring obedience to the teacher's instructions (Deurwaarder 2000:114). It is based on the assumption that learners need to know only what the teacher teaches them. The result is a teaching and learning situation that actively promotes dependency on the instructor (Bullen 2004:11).

Woolfolk (2004:275) suggests that a distinguishing feature of pedagogy is the properties by which it is defined. Four key properties characterise pedagogy: the role of the student, the role of the teacher, student experiences, and the student's readiness to learn (Woolfolk 2004:275). In practice the student is generally seen as dependent and submissive; whereas the teacher is expected to be dominant,

determining what is to be learned, when it is learned and if it has been learned. These actions put the teacher in a vigorous posture. Furthermore, Deurwaarder (2000:113) found that the experience that learners bring with them to the learning and teaching process is of little use because it is often not tapped in this teaching process, resulting in the isolation of the new and the old learning.

Deurwaarder (2000:113) suggests that the main model of the teaching-learning interaction espoused in pedagogy is transmission. In this scenario, Reece and Walker 2005:64) found that teaching is about giving accurate information, being sequential and hierarchical, directing a one-way flow, structuring of the learning environment, and the rewarding of performance. They also found that society and curriculum developers determine what is learned. There is no learner differentiation, thus students of the same age have to learn more or less the same standardised curriculum. Furthermore, there is a uniform progression from one level of learning to another for all students. This leads students to see education as a process of acquiring subject matter content, which will have an instrumental value only at a later time in life (Reece and Walker 2005:64).

Leder *et al* (2002:74) concur with Reece and Walker (2005:64), and further argue that the pedagogical approach to teaching is consistent with a dualistic orientation. Leder *et al* (2002:74) report that a dualistic orientation toward teaching leads to two key practices, typical of the pedagogical approach: (1) an emphasis on product, such as the acquisition of procedures, and (2) an instructional style that is determined *a priori,* and is dominated by telling, to help ensure the certainty of

classroom events. This implies that the instructional style is preconceived. Thus, these styles are necessarily insensitive to the contexts in which they are used – contexts that are in part determined by what students know and believe about the subject (Furinghetti 1996:19; Woolfolk 2004:64). Determining the *a priori* aspect of teacher educators' teaching practices is an issue that should be explored.

3.2.1 Factors influencing decisions to teach from a pedagogical perspective

Although an educator's pedagogical approach is often traced in research to different origins, decisions about which method to apply is less easy to discern. Methods are the practical application of approaches (Curzon 2005:235). There is evidence to suggest that a number of factors combine to influence an educator's decisions on how to teach. Armitage *et al* (2005:94) found that decisions on how to teach are associated with the individual's understanding of his or her purpose in the fulfilment of the learning goals; the individual's relationship with the group; consideration of resources, time, and equipment; balance, variety and maintenance of student interest; as well as the individual's breadth of experience and willingness to experiment. Other studies however report that context mediates these factors (Deurwaarder 2000:113; Tabulawa 1997:56). The following are some of the factors as cited in the literature.

3.2.1.1 Social views and community values

It has been reported that the views of society and the community values influence how (and what) a teacher teaches as evidenced by beginning teachers attempting to model what society accepts as good teaching (Arends 2004:22).

3.2.1.2 Learner characteristics and the lesson objectives and content

Reece and Walker (2005:66) found that the choice of a teaching method depends on the following factors, linked to the educator, learner and classroom context:

(i) Lesson objectives and content: methods should suit the objective. A variety of methods can be used at different stages during a lesson.

(ii) The characteristics of students: methods should be suitable for student's ability, age, motivation and interest to ensure each person learns.

(iii) Resources availability: Sometimes equipment and materials required for a lesson prevent the choice of certain methods. In addition, time required to prepare for the lesson is a factor.

(iv)The educator's experience: The main issue in respect of teacher experience is teacher competence and qualification. Reece and Walker (2005:66) suggest that:

- If the teacher is not competent in the use of a particular method, he or she may not choose it.

- Sometimes a teacher has the competence, but refuses to use certain methods because of the volume of work involved. Such action reflects low professionalism on the part of the teacher. Deurwaarder (2005:11) also found out that this refusal may stem from the teacher's belief.

- Since teaching is about helping student learn, the best method should always be chosen, regardless of competence.

Educator experience was also found by Wilson (2005:189-190) to be negatively related to the educator's willingness to try new ways of teaching. The more years the

educator is in the profession, the less likelihood of experimenting with various teaching methods.

3.2.2 Pedagogic teaching models and methods

3.2.2.1 Pedagogic teaching models

The above discourse indicates that the pedagogical approach places much emphasis on what the teacher is doing, compared to the learners. Joyce and Weil (1992:62) were probably the first to research extensively into and write about methods and models of teaching. From their research, Joyce and Weil (1992:62) grouped a number of methods into four families as follows: (a) *The behavioural family*: This family is concerned with the careful sequencing of learning activities to shape behaviour, (b) *The personal family*: This family sees the individual as the source of ideas. Its models focus on non-directive teaching, (c) *The information processing family*: This family is concerned with the way the learner handle stimuli, organise, and generate concepts, or solve problems. (d) *The social interaction family*: This family focuses on the development of the learner and emphasises the way in which people relate to others and their roles in society. Although these families differ in the extent that the teaching models are teacher or student centred, their classification informs this study in that it helps to clarify the instructional practices that teacher educators adopt. In this way, the classification helps with an initial framework to discuss the methods the teacher educators may be using to teach.

Rogers (in Reece & Walker 2005:64) developed an alternative set of teaching models to that put forward by Joyce and Weil (1992:73). He finds four categories of teaching methods that teachers apply in the teaching and learning process. These include the *presentation methods* (lecture, discussion, demonstration); *participatory methods* (question and answering, debate, gaming, discussion, case study, brainstorming, small or large group work); *discovery methods* (projects, experiments, assignment); and evaluation methods (test, quiz, role play).

Mutasa and Wills (1995:40) however found it more convenient to divide teaching methods on a five point continuum, ranging from the lecture method at one extreme, followed by demonstration and discussion to independent study at the other extreme. Although Mutasa and Wills (1995:40) argue that these strategies vary in the amount of time and managing as well as operating work demands on the educator, their classification of teaching methods are similar in nature to the models of Rogers (in Reece & Walker 2005:68). It should be noted however that each of the three systems of classifying teaching methods noted above, is not purely pedagogic although many place the teacher at the centre of the teaching and learning process.

3.2.2.2 Pedagogically oriented teaching methods

There is an extensive body of literature in existence about, “how to teach”, and the methods thereof. Brown (2006:1) suggests that regardless of the subject matter, teachers have to choose a method(s) to deliver learning. A teaching method is an established way used to help a student learn (Brown 2006:2). Teaching methods reflect the way the learning experience is organised and delivered.

Jarvis (1996:114-122) and later Reece and Walker (2005:34) proposed the following as examples of teacher-centred methods: Demonstration, guided discussion, controlled discussion, lecture discussion, lecture, mentoring, and tutorial. A detailed description of these teaching methods based on Jarvis (1996:114-122) is provided in Annexure 5 and will be used in this study.

In concluding this review of literature about pedagogy, extant literature has provided a basis for the treatment of pedagogy as an area of study with its guiding principles. In pedagogical settings, the educator determines what to teach, how to teach it, when to teach it and how to evaluate whether learning has taken place. The learner therefore is dependent on what the educator has prepared. The lecture, demonstration, mentoring and tutorials are some of the teaching methods that characterise this approach to teaching. This is in sharp contrast to the andragogical approach that will be explored in the next section.

3.3 The nature of andragogy

A competing idea to pedagogy, in terms of teaching adult learners, and one that has gathered momentum within the past three decades, has been andragogy (Bullen 2004:1). Andragogy is an approach aimed at helping adults to learn (Reece & Walker 2005:62). Knowles (in Bullen 2004:1) defines andragogy as the art and science of adult learning. This means it is a system of ideas, concepts, and approaches to adult learning.

Prior to the emergence of the andragogic model on the education scene, the pedagogic model was applied equally to the teaching of children and adults. This observation illustrates a contradiction in both terms. The notion of an alternative model to teach adults as against children was justified by empirical evidence which indicated that: (a) As adults mature, they become increasingly independent and responsible for their own actions (Bullen 2004:2). (b) They are often motivated to learn by a sincere desire to solve immediate problems in their lives (Curzon 2005:60), (c) They have an increasing need to be self-directing (Armitage *et al* 2004:28). In many ways the pedagogic model does not account for such developmental changes on the part of adults, and thus produces tension, resentment, and resistance in adult individuals (Knowles in Bullen 2004:2).

Although Malcolm Knowles popularised the concept of andragogy in the 1970s, the term itself was not new. Burge (in Bullen 2004:3) reports that European adult educators had been using it consistently to refer to two spheres of adult schooling: (a) the practical aspects of adult teaching and learning, and (b) to the academic study of adult education. Knowles (in Bullen 2004:1) elaborates on two dimensions of andragogy. These dimensions relate to the assumptions about the characteristics of adulthood, and the process elements of adult education.

Leder *et al* (2002:13) argue that the andragogic approach to teaching is consistent with a relativistic view of teaching. They argue that a relativistic orientation toward teaching leads to two key practices, typical of the andragogic approach: (1) an emphasis on process; and (2) the dynamic view of teaching. Reece and Walker

(2005:22) found that a relativistic view of teaching is based on the context of teaching - the key aspect of which is student understanding. From a relativistic view, the question becomes less of whether a teaching strategy is good or bad, but more a question of the context in which a strategy facilitates student learning (Leder *et al* 2002:14). This means that the focus in the teaching and learning process shifts from being teacher dominated to student dominated. The emphasis is on learning rather than teaching. The instructional style, therefore, cannot be determined *a priori.*

3.3.1 Andragogic assumptions about adult learners and learning

Bullen (2004:1-3) suggests that the andragogic model as conceived by Knowles is predicated on four basic assumptions about adult learners, all of which have some relationship to the educators' notions about an adult learner's ability, need, and desire to take responsibility for learning. These are:

1. Their self-concept moves from dependency to independency or self-directedness.
2. They accumulate a reservoir of experiences that can be used as a basis on which to build learning.
3. Their readiness to learn becomes increasingly associated with the developmental tasks of their social roles.
4. Their time and curricular perspectives change from postponed to immediacy of application and from subject-centeredness to performance-centeredness.

The andragogic approach has been variously criticized as a teaching model for, *inter alia*, the following: (a) Its inconsistency in method and means (that is, educators conducting lectures on behalf of andragogy, which is a system opposed to the lecture), (b) The dichotomous view of teaching. (c) Being a mere set of beliefs concerning the characteristics of adult learners and not a theory. In general however, extant writings support the work of Malcolm Knowles' andragogic approach to adult learning (Knowles *et al* 2000:14-25). Knowles (1980b:57-58) concluded that andragogy is a model of assumptions about learners to be used alongside the pedagogical mode of assumptions, thereby providing two alternative models for testing out the assumptions as to their “fit” with particular situations.

One of the most important questions to consider in deciding the appropriateness of andragogy is whether its assumptions about the nature of adult learners are valid. The empirical evidence is inconclusive. Burge (in Bullen 2004:3) reviewed research which tested the andragogic-pedagogic orientations of learners and educators, and analysed the experiences of university students from an andragogic perspective. She concludes that, although most adult learners generally preferred andragogic approaches to learning, not all did. On the basis of this review of the literature, she further concludes that, "no assumption, therefore, should be made that self-direction is an evident need or style of adulthood. In the same way, life experiences may be a resource for learning, but they may also act as hindrances, especially where adults are not confident about themselves as learners” (Burge in Bullen 2004:3).

Robinson (1992:10-12) surveyed students at Ryerson Open College in Toronto and found that some, but not all, andragogic assumptions were supported. Students were found to be intrinsically motivated, and drew on life experiences in their assignments, but were not interested in self-directed learning.

Loesch and Foley (1988:224-228) who reviewed research on the learning preferences of adult students in the health professions found out that most students preferred learning situations that were teacher directed, with clearly organized coursework in which assignments were spelled out in detail. Most preferred to work in groups and not independently. There were two of the cases, however, where Loesch and Foley (1988:224-225) found deviations from this pattern. In these cases, students who selected the independent study versions of a nursing and a pharmacy programme were found to be more self-directed and independent than those students who selected the traditional version of these programmes. Loesch and Foley (1988:224-225) compared students in a non-traditional baccalaureate programme with those in a traditional programme and produced similar findings.

Knowles (1980:57-58) outlines the conditions that lead to superior learning and the teaching principles that underpin them among adults as summarised in Table 2.1.

Table 2.2: Adult teaching principles and the conditions of learning that underpin them (based on Knowles (1980a:57-58)

Superior condition for learning	**Principles of teaching**
The learners' need to learn	1. The teacher exposes learners to new possibilities for self-fulfilment.

	2. The teacher helps learners to clarify their own aspirations for improved behaviour. 3. The teacher helps learners to diagnose the gap between their aspirations and their present level of performance. 4. The teacher helps learners to identify life problems they experience because of the gaps in their personal equipment.
The learners' environment is characterised by physical comfort, mutual trust and helpfulness, freedom of expression and acceptance of differences,	5. The teacher provides physical conditions that are comfortable and conducive to interaction. 6. The teacher accepts and treats learners as persons of worth and respects their feelings and ideas. 7. The teacher seeks to build relationships of mutual trust among learners by encouraging cooperative activities, helpfulness and refraining from inducing competitiveness and judgemental. 8. The teacher exposes his or her own feelings and contributes resources as a co-learner in the spirit of mutual inquiry.
The learners perceive the goals of learning experience to be their own.	9. Involves learners in a mutual process of formulating learning objectives in which the learner, institution, teacher, subject matter and society are taken into account. The learners perceive the goals of learning experience to their goals.
The learners accept a share of the responsibility for planning and operating a learning experience and therefore have a feeling of commitment toward it.	10. The teacher shares his or her thinking about options available in designing of learning experiences and the selection of materials and methods and involves the learners in deciding among these options jointly.
The learner participates actively in the learning process.	11. The teacher helps learners to organise themselves (learning teams, independent study) to share responsibility in the process of mutual inquiry.
The learning process is related to and makes use of the experience of learners.	12. The teacher helps learners use their experiences as resources for learning through the use of such as techniques as discussions, role play, case method etc. 13. The teacher gears presentation of her/his own resources to the levels of experience of particular learners. 14. The teacher helps learners to apply new learning to their experience, and thus make the learning more meaningful and integrated.
The learners have a sense of progress towards their goals.	15. The teacher involves learners in devising criteria and methods to measure progress. 16. The teacher helps learners to develop and apply procedures for self-evaluation according to these criteria.

3.3.2 Factors influencing decisions to teach from an andragogical perspective

Whether or not adult learners fit the andragogic characteristics is a separate issue from whether or not they prefer an andragogic approach to teaching and learning. In other words, the advocates of andragogy not only make assumptions about adult characteristics, they also assume that these necessarily imply a particular style of teaching and learning. Pratt (in Bullen 2004:5) argues that appropriate teaching styles are determined by situational, learner and teacher variables, that self-directing and autonomous learners do not always choose to take control of all instructional functions, and that having control of these functions does not necessarily imply self-directedness or autonomy. Robinson's (1992:10-12) study tends to support this by showing that while adult students may fit the andragogic model in some respects, they may choose not to be self-directed. In terms of this study, the above findings have implications for educators' choice of teaching methods. Some of the factors that influence educators to teach from an andragogical perspective as discussed in the literature are cited below.

3.3.2.1. The relevance of andragogy to learners

Some advocates of applying andragogy to teacher education support their argument on the grounds that andragogic assumptions about adults are valid (Reece & Walker 2005; Jarvis in Bullen 2004). Clearly the empirical evidence does not support this. If andragogy is adopted on the strength of its underlying assumptions about adults, teacher educators must be sure to validate those assumptions in their own contexts.

Otherwise any benefits that may result from using this approach may be outweighed by the harm done to students who learn better in more directive situations. This means teacher educators may be tactical and respond to learners' needs when they teach in pedagogic rather than in andragogic ways.

3.3.2.2 Institutional philosophy

A point that is often overlooked in the debate about teacher educators' decisions about a teaching approach is the extent to which it must reflect the underlying philosophy of the educational institution. In other words, can teacher educators' decisions about a teaching approach in a conventional college adopt an approach to teaching that is based on a philosophy of education which contradicts that of the larger institution?

Tabulawa (1998:5) suggests that Botswana teacher education colleges are subject-centred and are informed by liberal and utilitarian conceptions of education. The utilitarian orientation is manifested in the professional schools, the liberal orientation in the humanities and sciences. However, the andragogic approach is learner-centred and based largely on humanistic conceptions of learning in which the curriculum is organised to suit the needs identified by the learner. Process, rather than content, is emphasised. Can these fundamentally different views of education coexist in one institution? It means therefore that the extent that work-context influences educators' approach to teaching should be investigated.

Deurwaarder (2000:113-114) suggests that college-based teacher education in Botswana has struggled to gain recognition and academic credibility. The extent to which it has achieved this is due largely to its rigorous adherence to the goals, regulations, guidelines and philosophical views of the University of Botswana which validates its operations (Hopkin 1999:697). To adopt an alternative approach to teaching such as andragogy would place this credibility at risk, because learners may not respond as well to instruction. In practical terms this means an andragogic approach may probably not be adopted "across the board" by all teacher educators, but perhaps may be adopted by those educators in courses which tended to be more process- than content-oriented. These sorts of considerations must be investigated in relation to educators' educational orientations.

3.3.2.3 The mass-production approach to education

The extent that andragogy can be applied to an educational enterprise which operates according to what has been called a factory model has been found to be related to choice of teaching approach (Peters 1989:3-4). Tabulawa (1998:249-252) suggests that government return on investment in teacher education is being questioned in many countries, including Botswana. Deurwaarder (2000:116) found in many parts of the world that the education sector is being pushed, for many years, to produce more at less cost. Hopkin (2000:360-361) questions whether this mass-production approach can be reconciled with andragogy which is an inherently more individualised approach to instruction and thus implies a more customised approach to course design and instruction. Deurwaarder (2000:118) concludes that it is

certainly not impossible to use an andragogical approach, but that cost implications have to be considered in this era of cost rationalisation.

3.3.2.4 The adult's emotional response

An educator's andragogical approach can be affected by the emotional disposition of the adult learner in the teaching and learning process. Dunn (2000:5) found association between how adults emotionally respond to formal educational settings with how they appraise or evaluate a new learning experience. For example: given two adults in a classroom where an exercise is about to begin, one individual may interpret the exercise in such a way that leads to a feeling of 'excitement', while the other person interprets the exercise in such a way that leads to the feeling of 'embarrassment'. Dunn (2000:5) concluded that the needs of the learner impact on the teaching approach adopted since the learners' approach to new learning contexts is influenced by how they appraise or evaluate the new experience.

Furthermore, Burns (1995b:16) suggests that teaching cannot be divorced from learning, consequently, adult learners' appraisals of self-efficacy, coupled with labels such as "fear" or "anxiety" can lead some learners to emotionally disengage from the source of discomfort that is the learning experience. However, when coupled with labels such as "excitement" or "challenge" the learner is led to take actions that focus on the task (Burns 1995b:16).

However, in another study Beder and Carrea (1988:75) investigated the effects of andragogic teacher training on adult students' attendance and evaluation of their

teachers. The authors examined two hypotheses with an experimental design: (a) teachers of adults trained in an andragogical mode will have higher rates of student attendance in their classes than teachers not trained in the andragogical mode; and (b) students will evaluate more positively teachers of adults trained in an andragogic mode than teachers not trained in the andragogical mode. The treatment was found to have a positive affect on attendance but not on student evaluations. Such a positive outcome could influence some teachers to adopt an andragogic approach. These findings highlight the value of context in instructional methods decisions (Deurwaarder 2000:121).

3.3.2.5 The role of teaching experience

There is also evidence in literature that teachers in their mid-careers are likely to be more experimental in their teaching as they seek new challenges, give “meaning” to their work or some may wish to change their careers completely (Harms & Knobloch: 2005: 99-122). In this way, despite their previous experiences, teachers in their mid-careers may adopt innovative methods when compared to those who have just joined the profession or those who have been teaching for many years.

3.3.3 Examples of andragogically oriented teaching methods

Reece and Walker (2005:62) argue that andragogically oriented methods of teaching are learner-centred in nature. The authors Jarvis (2005:122-136), Reece and Walker (2005:62) offered the following examples of learner-centred methods: Brain storming, buzz groups, debate, fish bowl, group discussion, interview, listening and observing, panel, project and case studies, role play, simulation and gaming,

seminar, snow balling, therapy (T) groups, visits, tours, field trips, workshops, assignments, computer assisted learning, contract learning, experiential learning, personalised system of instruction (PSI), personal tutorial and, self directed learning. A detailed explanation of what these methods entail is provided in Appendix 5 of this study. It is the frequency of use of these teaching methods that will be investigated in order to confirm the educational orientations of teacher educators during this research.

3.4 A comparative summary of the properties of pedagogy and andragogy

Table 3.1 summarises and compares the properties of pedagogy and andragogy. It is clear that in pedagogy the learner is a dependent one, with little or limited experience he or she brings into the learning encounter, is often extrinsically motivated, has little or no input in what is to be learned and often learns skills, concepts and gains knowledge that is likely to be used in the future. In andragogy, on the other hand, the learner is independent, often has vast experience in the field he or she is pursuing, is often intrinsically motivated and wants to use what is learned in the present or immediate future.

Table 3.1 A comparison of the properties of pedagogy and andragogy based on Knowles (1980a:54-61)

Themes	**Pedagogy**	**Andragogy**
The concept of the learner	The learner is a dependent one. The teacher is expected to determine what is to be learned, when it is learned and if it has been learned.	The learner is often independent and self-directed. Adults have a psychological need to be generally self-directed, though they may temporarily be dependent under certain situations.
The role of learner experience	The experience that learners bring with them is of little use. Though it is used, as a starting point, but the	As people grow and develop, they accumulate an increasing reservoir of experience that becomes an increasing

	experience, which he or she gains from most, is that of the teacher, textbook writer, audio-visual aids producer, and other experts. Accordingly, the main techniques in education are transmittal techniques: lecture, assigned reading, and audio-visual presentations.	source of learning; for themselves and others. Adults attach a lot of meaning to learning they gain from experience rather than those they acquire passively. Accordingly the main techniques used in their education are experiential for example laboratory experiments, discussions, problem solving cases, simulation exercises, etc.
Readiness to learn	Society and curriculum developers determine what is learned. Learners of the same age have to learn more or less the same standardised curriculum with a uniform progression for all learners.	Readiness to learn is a result of a perceived need in order to cope more satisfyingly with real life tasks or problems. The educator has the responsibility to create conditions and provide tools and procedures for helping learners discover their "need to know". Programs therefore should be organised around life application categories and sequenced according to the learner readiness to learn.
Orientation to learning	Learners see education as a process of acquiring subject matter content which most understand will be useful only at a later time in life. Accordingly the subject matter should be organised into subject matter units, which follow the logic of the subject. Pupils are subject centred in their orientation to learning.	Learners see education as a process of developing increased competence to achieve their full potential in life They want to be able to apply whatever knowledge and skill they gain today to living more effectively tomorrow. Learning experiences should therefore be organised around competency–developed categories. People are performance centred in their orientation to learning.

3.5 The pedagogy versus andragogy dichotomy

Extant literature, however, provides arguments for and against the pedagogy-andragogy dichotomy. Harris (2003:2), for example, suggests that pedagogy and andragogy target different audiences, with pedagogy seen mainly as concerned with the learning and teaching of youths, while andragogy is predominantly concerned with adult learning and teaching. Although researchers have found this distinction useful in practice (Furinghetti 1996:19-20; Woolfolk 2004:275), the dichotomy has been criticised for being too simplistic (Reece & Walker 2005:265).

Despite the criticism of the crude polarity that they create, Reece and Walker (2005:62) argue that both pedagogy and andragogy have an art and a scientific

basis. In part, this implies that the pedagogical and andragogical practices are based on research and scientific evidence. It further implies that both approaches have aspects that cannot be codified or guided by scientific knowledge alone. Instead, they depend on a complex set of individual judgements based on personal experiences. The educator's experiences and wisdom of practice is thus central (Arends 2004:5). Gage (in Arends 2004:5) views this as instrumental or practical art. Beliefs also play a crucial role in the artistic aspect of pedagogy and andragogy (Furinghetti 1996:192).

3.6 Conclusion

From the preceding discussions it is clear that the teacher educators' day to day practices are guided by the underlying beliefs they have about their students (whether they are regarded as children or as adults), their own disposition as teachers (whether they are providers of knowledge or facilitators accompanying students who are learning), and the process of teaching and learning (whether it is coaching, mentoring, transmitting information or guiding and facilitating). These beliefs then translate into educational orientations; whether pedagogic or andragogic which would in turn influence their choice of teaching methods. They would then model behaviours that reflect their deep seated beliefs about learners. It is the object of this study to explore these aspects among teacher educators in colleges of education in Botswana.

Chapter 4

The influence of pedagogy versus andragogy on educational practice

4.1 Introduction

The last three chapters discussed the concepts; beliefs, educational orientation, pedagogy and andragogy in terms of the way these concepts have an influence on how teaching and learning is carried out. In this chapter the influence of pedagogy and andragogy on educational practice in general and teacher education in particular is explored as a way of linking the theoretical aspects of teaching and learning to their practical application. An interrogation of the relationship between adult education as entailed in andragogy, with teacher education as reported in the literature reveals a link between adult education and teacher education. This link therefore situates this research on the orientation of teacher educators and their practices in the realm of adult education, and further presents the argument that both teacher education and adult education are guided by the same principles. Based on the preceding discussions of these principles, the interplay between andragogy and pedagogy in pre-service teacher education settings highlights the dilemma that is faced by teacher educators who prepare adults (student teachers) to be teachers of children.

4.2 Educational practice

Teacher education has two dimensions. The first dimension is the applied work that teachers perform every day. The second dimension is knowledge formation that gives understanding of the nature of the teacher's work. (Hansen & Wenestan, 2000:8-9) Educational practice in the context of this research refers to the former rather than the latter. It relates to the tasks that constitute the day to day activities that teachers perform in the process of teaching so that learning can take place. It includes all the processes that the teacher engages in while planning to teach, how actual teaching takes place and what the teacher does to evaluate the teaching. Educational practice is by necessity guided by theoretical as well as practical considerations. From the theoretical perspective, for example, an educator's belief in andragogy will influence the way a teacher prepares content to teach, how it is taught and how the evaluation of learning is to be done. From a practical point of view, the nature and content of the subject, the learner's readiness to learn and the environment in which learning is taking place does influence how teaching is done. For example, if the content to be taught is entirely new to the learner, a pedagogic approach may be preferred as opposed to an andragogic one.

Educational practice revolves around the teacher, the learner and the content. In literature this relationship is presented in the form of a triangle often referred to as the didactic triangle (Laccotte & Lenoir 1999:165). An understanding of this interrelationship provides insight into how teaching and learning takes place in different educational settings. In general child education, the teacher is an adult who determines what to teach, how to teach it and how to find out that learning has taken

place. These considerations are grounded in pedagogy. Conversely, in the adult (teacher) education situation, the educators teach adults (the student teachers) who (from an andragogical perspective) should be involved in some way in determining what to learn, how to learn it and how to find out that they have learned. In addition, teacher educators are also training the student teachers how to teach children. Teacher education practices have, therefore, to take into account the following aspects: (1) the student teachers learning the subject matter, (2) understanding the philosophical and sociological reasons for the learning and (3) developing competence in the delivery of the subject matter to the children they will teach (Krogh-Jespersen, 2000:18). These and other aspects of educational practice are further explored in the subsequent sections of this chapter.

4.3 Adults and children as learners

Stemming from the discussion on educational practice it is important to discuss the nature of learners, whether adults or children. It was noted earlier that adults and children approach learning differently in terms of reasons for learning, motivation to learn and the level of experiences that they bring into the learning encounter. These aspects warrant a further in-depth examination of the literature on adults and children as learners.

4.3.1 Assumptions about adults and children as learners: the debate.

Kerka (2002:1-4) suggests that adults learn differently from children. This implies that teaching adults is different, since adults learn differently than children do. Theories or perspectives on adult learning, such as andragogy, make a number of

assertions about the characteristics of adults as learners, such as: (a) adults need learning to be meaningful; (b) they are autonomous, independent, and self-directed; (c) prior experiences are a rich learning resource; (d) their readiness to learn is associated with a transition point or a need to perform a task; (e) their orientation is centred on problems, not content; (f) they are intrinsically motivated; (g) their participation in learning is voluntary (Draper 1998; Sipe 2001; Tice 1997; Titmus 1999). These characteristics make the orientation for teaching adults different from those of teaching children.

For many researchers, "the major difference between adults and younger learners is the wealth of their experience" (Taylor *et al* 2000:7). For others, the capacity for critical thinking or transformative learning is what distinguishes adult learners from children (Vaske 2001:17-20).

In contrast, pedagogy assumes that the child learner is: (a) a dependent personality, (b) has limited experience, (c) is ready to learn based on age level, (d) is oriented to learning a particular subject matter, and (e) is motivated by external rewards and punishment (Guffey & Rampp 1997; Sipe 2001).

If there are indeed "distinctive characteristics of adults, on which claims for the uniqueness and coherence of adult education are based, then one might expect them to be taken into account in all organised education for adults" (Titmus 1999:347). However, each of these characteristics is contested. Courtney *et al* (1999:4) assert that "characteristics of adult learners" refer to a small number of

identified factors with little empirical evidence to support them. Andragogy has been criticised for characterising adults as we expect them to be rather than as they really are (Sipe 2001:87). Both andragogic and pedagogic models assume a "generic" adult and child learner (Tice 1997:18).

Some scholars question the extent to which these assumptions are characteristic of adults only, pointing out that some adults are highly dependent, and some children independent; some adults are externally motivated, and some children intrinsically; adults' life experience can be barriers to learning; some children's experiences can be qualitatively rich (Merriam 2001; Vaske 2001). The questioning of the assumptions also raises questions for the approach to teaching these groups.

The emphasis on autonomy and self-direction is criticised for ignoring context. Adults in higher education can be marginalised and deprived of voice and power (Sissel *et al* 2001:17). Power differences based on race, gender, class, sexual orientation and disability can limit adults' autonomy and ability to be self-directed (Johnson-Bailey & Cervero 1997; Leach 2001; Sheared & Sissel 2001), which in turn can limit the way they can be taught.

Lifelong learning and teaching can be coercive and mandatory, contradicting the assumptions that adult participation is voluntary (Leach 2001:25). Adults do not automatically become self-directed upon achieving adulthood. Some are not psychologically equipped for it and need a great deal of help to direct their own learning effectively (Beitler 1997; Titmus 1999). Adults may be self-directed in some

situations but at other times prefer or need direction from others (Courtney *et al.* 1999:4-5).

Psychological studies suggest that differences in adult and child learning may not be dichotomies but qualitative and quantitative nuances along a continuum. Research shows that motivational, affective, and developmental factors are more crucial in adults than in younger learners. Adults are more able to be self-directed and reflective and to articulate learning goals, and they are more disposed to bring their life experiences to what and how they learn (Smith & Pourchot 1998:1-4). Studies of meta-cognition indicate that children and adults differ at each level due to acquired expertise and active use of expert knowledge (Draper 1998:3).

For Draper (1998:3-6), for example, pedagogy versus andragogy is a false dichotomy. He suggests that the differences are qualitative: the *kind* of experiences adults have and the *intent* of their learning are the distinguishing characteristics. Merriam and Caffarella (1999:138) agree that the *use* adults make of experience is different. These qualitative and quantitative differences are not only what distinguish adults from children, but also what distinguish adults from one another. Guffey and Rampp (1997:31) believe that technology is changing how humans learn, and how teachers teach; and is increasing intrinsic motivation, self-direction, and critical thinking at even younger ages. These concerns raised in the extant literature do influence teacher educators' approaches to their educational practice in that they are challenged to take them into consideration in their teaching despite the opposing views expressed in the literature.

4.3.2 The role of learner centredness

Furthermore, learner centeredness is promoted in the literature as another distinguishing characteristic of adult education and teaching. Cervero and Wilson (1999:29) identify a strong thread in the field: "At the heart of practice is the adult learner….The highest professional and moral principle for adult educators is to involve learners in identifying their needs". In traditional teacher-directed education as practiced in elementary, secondary, and post-secondary settings, passive learners receive knowledge transmitted by teachers (Tice 1997:18-19). Formal curricula reflect what powerful groups think students should learn and what kinds of knowledge are considered important (Sheared & Sissel 2001:38; Titmus 1999:343).

In contrast, learners are at the centre of policy and practice in adult learner-centred institutions, which are characterised by flexibility and individuation for self-directed, empowered adults (Mancuso 2000:4). Such a philosophy implies that traditional teaching practices, not considered appropriate for adults, are suited to the needs of children and adolescents.

Some scholars agree with the above assumption since "In teaching pre-school through primary school, pedagogy has a secure place. Before they can become involved in deciding their future learning activities, the children must first be taught to read, compute, communicate, and socialise" (Guffey & Rampp 1997:31). Others argue that the traditional model does not meet the needs of either children or adults. The learning enterprise as a whole is shifting from transmission of a fixed body of

knowledge to a focus on lifelong learning. They argue that if initial schooling continues to use traditional teacher-directed methods, adults will remain ill prepared for lifelong learning (Titmus 1999:343). Andragogical methods, which purport to provide "a relaxed, trusting, mutually respectful, informal, warm, collaborative and supportive learning environment" (Sipe 2001:89), are more conducive to learning at all ages (Guffey & Rampp 1997:31; Sipe 2001:89**).** In light of these emerging trends in the extant literature, to what extent are learner-centred practices actually used by adult (teacher) educators? This is one of the key questions raised when investigating the educational orientations of teacher educators in colleges of education in Botswana.

In the study by Kember *et al* (2001:393), educators viewed adult students as being at the andragogic end of the continuum, but teaching methods stemmed from their conception of good teaching: (a) as transmission of knowledge or (b) facilitation of learning. They also varied the use of teacher-directed and learner-centred approaches depending on which ones better served learner needs (for example designing teaching to be congruent with the relative strengths and weaknesses of students).

In the research by Beder (2001:46), adult literacy teachers expressed learner-centred intentions and orientations. Yet "observations portrayed a type of instruction that was the near antithesis of learner-centeredness" in that there was: (a) predominant use of teacher-prepared lessons, (b) elementary-school-style elicitations, and (c) virtually no substantive learner input. Beder (2001:46) concluded

that, although instruction itself was teacher directed, teachers were learner-centred in their affective relationships with learners. Learner centeredness was thus an expression of values, not a teaching method. This question leads to issues of teachers' beliefs, and their role in determining educational orientation. In this case , the adult literacy teachers' intention were andragogic while their practices were pedagogic, probably because of other factors such as the curriculum, their past experiences or a need to cover a certain amount of content within a given time.

Do adult learners prefer learner-centred approaches? Beitler (1997:218) found mid-career adult students were more concerned with teacher character than appropriate teaching methods. They, for example, preferred teacher direction in courses with a clearly defined body of knowledge to master, such as accounting. In the study of Donaldson *et al* (1993:147-165), adult students' conceptions of good teaching included a mix of teacher-directed and learner-centred characteristics. These issues individually and collectively could be influenced by the teaching orientations of the educators.

How much autonomy do learners or teachers have in formal contexts? In the current climate of accountability and quality assurance in the educational sector in many parts of the world, including Botswana, learner experience may be valued in class discussions, but not in assessment (Leach 2001:25). Learning contracts are a typical learner-centred approach in many Western societies but post-secondary institutions control what credit will be given for them (Leach 2001:25). Teacher educators with a transformative or emancipatory philosophy may therefore find institutional limits on

their ability to challenge inequities and teaching styles (Leach 2001:25-45; Sissel *et al* 2001:17-27).

At the same time, teacher educators' focus on raising learner awareness can be disorienting and painful for adults, rather than nurturing and supportive (Leach 2001:25-45). The educator's role as a facilitator in learner-centred approaches does not account for the intersecting power dynamics that "privilege some, silence some, and deny the existence of others" (Johnson-Bailey & Cervero 1997:240). These dynamics cannot be ignored in any investigation of the teacher educator's educational orientations.

4.4 The influence of belief systems on pedagogic and andragogic decisions

It was noted earlier that learner and teacher beliefs lie at the centre of educational practice. To further assess the interplay between the learner and the educator, learner and educator beliefs are discussed in the subsequent sections so as to indicate their influence on educational practice.

4.4.1 Learner beliefs

Katz (1976:129) explored the belief in andragogy and the development of self-actualisation. The study was designed to determine whether extrinsic learning (belief in andragogy) or intrinsic learning (development of self-actualisation) do occur in the same learning experience. It assessed whether a particular andragogic process of

teaching was effective in the growth of participants' beliefs in andragogy and in their development of self-actualisation. Belief in andragogy increased throughout the learning experiences but the development of self-actualisation did not increase. These studies indicate that if learners are exposed to and are therefore aware of andragogic principles, they may have a greater affinity to believe in themselves and their ability to acquire new knowledge or learn new skills. This is important for teacher education in Botswana where graduates of colleges of education have been found to be unable to take up innovations (Prophet, 1994, Marope, 1997). As Conner (2004:1) suggests, it may be necessary for learners (student teachers) to unlearn the belief in teacher-reliance if they are to meet their own learning needs and demand training providers (teacher educators) to do the same.

4.4.2 Educator beliefs

Brookhart and Freeman (1992:37) suggest that both pre-service and practising teachers have deep-rooted ideas about teaching and how learners learn. Much of these ideas have developed from their own educational experiences as well as from beliefs expressed in the society. Research evidence strongly relates past educational experiences to the teaching strategy that beginner teachers employ in the classroom (Pajares 1992:307; Richardson 1996:107). In studies in Botswana, Deurwaarder (2000:114) found that teachers' classroom practice is greatly influenced by their beliefs with respect to teaching and learning, and concluded that change in classroom practice will not occur if no attention is paid to the belief systems held by the teacher.

In a study by Paola (1999:217-221), belief was investigated. Teaching mathematics was carried out through discussion. The teacher involved in the investigation was very enthusiastic about this method of working. In the study, the teacher held two conjectures: a belief that this method is efficient and suitable for making students learn mathematics with understanding, and the belief that the input to be used in the mathematics activity should come only from the teacher. This latter point was a central belief, while the former was peripheral. Paola (1999:217-220) observed that during the teaching and learning process, the former belief (enthusiasm about the method) was abandoned in favour of the latter (mathematics activity only from the teacher). Paola (1999:219) concluded that the discussion-style (learner-centred) lesson shifted to the traditional teacher driven (pedagogic) lesson – a factor attributed to the central beliefs that the teacher held.

Leder *et al* (1990:12) suggest that teacher beliefs about good teaching have been so deeply rooted that surface changes, such as changing outer conditions, like the curriculum or teaching materials, cannot influence them. If teachers are compelled to undergo change, they will adapt to the new curriculum, possibly by interpreting their teaching in a new way, and absorb some of the ideas of the new teaching material into the old style of teaching. In fact, there seems to be a gap between teachers' expressed beliefs, and their teaching practices (Paola 1999:221). This is as opposed to the teachers' innermost "true" beliefs which eventually manifest themselves in their teaching practices.

Shaw (in Jones *et al* 1991:2596) found for example that although a teacher expresses a belief that exploring a mathematics situation is more important than rote practice, the teacher often assigns 50% of exercises for students to work during class. In a similar example, Paola (1999:219) observed that although a teacher believes in allowing students' ideas to guide classroom discourse, in reality the teacher only recognises those ideas that fit into the prepared plan. This discrepancy between "accepted beliefs" and "beliefs in action" generates what Furinghetti (1996:19-20) terms "ghosts in classroom", that is, hidden beliefs in action.

Harris (2003:3) found that when confronted with the actual classroom experiences, new teachers generally revert to their original belief systems about teaching and set aside knowledge from their training. Harris concluded that the technical aspects of their teacher preparation were of little use to them. Furthermore, in a study by Bullough, Knowles and Crow (in Harris 2003:2), the researchers described how three novice teachers structured their teaching based on perceptions of themselves and their students, rather than relying on the knowledge learned through the teacher education programme. These findings leave open the possibility that teacher educators in colleges of education in Botswana may have similar influences on their educational practices.

The need for a conscious reflection on beliefs in order to make change possible in the teaching process was investigated by Hiemstra (1985) among adult learners and later by Korthagen (in Deurwaarder 2000:115) among pre-service teachers. Hiemstra (1985) found that reflection helped learners to develop positive attitudes

and feelings of independence relative to learning. It also improved their own learning and professional development. Korthagen (in Deurwaarder 2000:115) on the other hand found that in a course that emphasised self-reflection, those pre-service teachers with high reluctance to participate either dropped out of the programme or did not change their teacher-centred views of teaching after the programme, compared to those who engaged in self-reflection. This suggests that if individuals are confronted about their beliefs, they may be open to the possibility of re-examining those beliefs and possibly change their actions. In the context of this research, determining educational orientation of teacher educators in colleges of education in Botswana should offer these educators a platform for reflection on their beliefs and therefore their practices.

4.5 The relationship between andragogy and teacher education

Extant literature indicates that there is a close relationship between adult education and teacher education since the two disciplines are guided by related principles. This relationship is further underscored through the analysis of the work of Bollough (1997), Northfield and Gunstone (1997), Knowles (1980b) and Rogers (1996). This analysis takes the form of a comparison of the adult education principles developed by (Knowles, 1980b) and Rogers (1996) with the teacher education principles developed by Northfield and Gunstone (1997) and by Bollough (1997),

4.5.1 A comparison of andragogical assumptions, adult education principles and teacher education principles

Bollough (1997:21) developed the following teacher education principles. The teacher educator should:

- Recognise that student teacher identity is vital as a starting point.
- Recognise “selves” in the context of the wider world of education.
- Understand the “social philosophy” and aims of education in a democracy.
- Be supportive and respectful of an individual as an adult learner fully capable of making reasonable judgment about his or her own learning and the direction of that learning.
- Build trust and respect through open articulation of reasons behind programme decisions and allow for criticism.
- Accept that learning is only possible if the “learner is willing to learn”. Learning is the responsibility of the learner.
- Recognise that educational outcomes are unpredictable and aims are flexible. While a few can be measured, most learning is idiosyncratic and probably not measurable. The competency model therefore impoverishes teachers and teacher education.
- Appreciate that each person makes teacher education meaningful in his or her own way.
- Accept that programme continuity is only possible through continuous systematic reflection, for example using Personalised Teaching Texts.
- Recognise that sharing is central to one’s professional development.

- Accept that on-going data driven self-evaluation is important in professional development.

On the other hand, Northfield and Gunstone (1997:48-72) identified two purposes of teacher education. The first is for teachers to learn and apply important ideas about teaching and learning. The second is to present teacher education in ways that achieve a balance between the existing context and role of teaching and the possibility of improving teaching and learning. They then go on to advocate that teacher education should enhance the value of teacher knowledge and the generation of such knowledge**.** Hansen and Wenestam (2000:8) state that teacher knowledge has two dimensions. One dimension is the knowledge that accumulates from everyday events, situations and problems which eventually forms a personal database of world knowledge. The second dimension is "documented knowledge" or "frozen knowledge" which is secure, valid and defendable, one that can be controlled and investigated. Such knowledge constitutes the curriculum, official documents, teaching guides and so on.

From the above purposes, Northfield and Gunstone (1997:49) developed a set of principles based on the following assumptions about teacher education.

Teacher education should:

- Model the teaching and learning approaches that it advocates.
- Promote the vision of the teaching profession.
- Recognise prior and present experiences of (student) teachers.
- Encourage respect for teacher knowledge and understanding.

- Maintain a close relationship with schools and the profession.
- Support teacher's efforts to understand and improve learning opportunities for their students.
- Recognise that learning about teaching is a collaborative activity conducted with others in small groups and networks.
- Be involved in personal, social and professional development of teachers.

From these assumptions Northfield and Gunstone (1997:48-56) developed the following set of teacher education principles:

1. The (student) teacher has needs and prior experiences that must be considered in planning and implementing a teacher education programme. The nature and intensity of these needs should shift through the teacher education programme.
2. The transition of the (student) teacher as a learner is fundamental and difficult. This transition can be facilitated by the teacher working in collaboration with colleagues through introducing teaching as a collaborative process, through group work and team teaching.
3. The (student) teacher is a learner who is actively constructing ideas based on personal experience.
4. Teacher education should model the teaching and learning approaches that it advocates for in schools.
5. The (student) teacher should see the teacher education programme as a worthwhile experience in its own right.

6. Teacher education programmes are by nature incomplete. They are only a starting point because teacher education is a life-long, career-long study of teaching and learning.

Placing the andragogical assumptions (Knowles, 1980b) side by side with the adult education principles (Rogers, 1996) and the teacher education principles proposed by Bollough (1997) as well as Northfield and Gunstone (1997), the relationship between adult and teacher education emerges. The relationship is with particular reference to the purpose, motivation and methods used in both adult education and teacher education, as illustrated in Table 4.1

Table 4.1 A comparison of andragogic assumptions (Knowles 1980b), adult education principles (Rogers 1996) and teacher education principles (Bollourgh 1997; Northfield & Gunstone 1997).

Andragogic assumptions (Knowles (1980b: 43-44).	**Adult education principles (Rogers 1996: 60-70).**	**Teacher education principles (Bollough 1997:21-22).**	**Assumptions about teacher education (Northfield & Gunstone 1997:49).**
Adult learners tend to be self directed.	Adult learners have a balanced judgment about themselves and others. They have perspective and tend to exercise autonomy.	Teacher education must use the identity of the (student) teacher as a starting point for learning. Teacher education must be supportive of and respectful of the individual as an adult learner fully capable of making reasonable judgment about his or her own learning and the direction of that learning.	The (student) teacher is a learner who is actively constructing ideas based on personal experience.
Adult learners have experiences that they value as a learning resource for them and others.	Adult learners bring a range of experiences and knowledge relevant to the learning tasks.	To teach is to testify and also to care about, converse and connect with others whose experiences differ from our own.	Teacher education must be based on the recognition of prior and current experiences of (student) teachers, and should encourage respect for teacher

			knowledge and understanding.
Adult learners have a need to satisfy real life tasks or problems.	Adult learners come to education with set intentions. Each person makes education meaningful in his or her own way.	Teacher education should aim at creating means that enable students to forge their own sense of continuity through attending systematically over time, to their experience of teacher education and development as teachers.	Teacher educators need to be advocates for the profession and supporters of (student) teachers' attempts to improve teaching and learning opportunities for their students.
Adult learners see education as a process of developing increased competence to achieve their full potential.	Adult learners bring certain expectations about education itself.	The purposes of teacher education must be explicit and open to scrutiny in order to make them meaningful to (student) teachers.	Teacher education involves the personal, social and professional development of (student) teachers.

At the theoretical level, the assertion that adult education is analogous to teacher education can be established. This is supported by the fact that those who join teacher education programmes are adults. Furthermore, the review of literature has revealed that the principles that underpin adult education are similar to those that guide teacher education. This means, therefore, that adult education and teacher education practices have a lot in common. This is because student teachers are adults and should therefore be respected for their own self worth; and that they should be helped to use their own experiences as a major source of their own learning. The student teachers should be assisted to recognise the need to continually reflect on their learning, seek new knowledge and devise new methods of teaching and learning throughout their lives.

Having established this important link between adult education and teacher education, it is imperative that teacher educators should be aware and be well informed about this link. It is the object of this research to reveal this awareness (or

the lack of it), by establishing the educational orientation of teacher educators in Botswana. A pedagogical orientation would indicate lack of awareness of this link**.** Further investigation should reveal whether the approaches, methods and techniques used by teacher educators in Botswana are akin to andragogy or pedagogy.

Andragogic orientation of teacher educators is important since it has been found to increase learner motivation to attend teacher education courses (Beder & Carrea, 1988:75-88). As Beder and Carrea (1988:85) conclude, “training in andragogic methods can have a positive effect on attendance.” This has both theoretical and practical implications. Voluntary attendance means that motivation to learn is intrinsic, and that andragogy as a learning technology has the power to hold students in courses.

4.5.2 Andragogy in pre-service teacher education settings

Research in the approaches and methodologies used in pre-service teacher education is scanty. Sato and Ushawata, (1990:38) found out that few studies evaluated the curriculum or teaching methods in pre-service education in Japan. Tisher, (1990:73) reported that in Australia, teacher education programmes placed a lower emphasis on the personal development of the (student) teacher.

However, McNamara (1990:136) reports that the participation of student teachers in course design, organising and directing their own programme, with course tutors as facilitators resulted in the student teacher having confidence in their own teaching

and their having high levels of motivation. In the Netherlands, where some research on didactics of teacher education was done, Kieviet (1990:52) found out that reflective methods improved the self -image of student teachers.

Calderhead and Shurrock (1997:208) have acknowledged that research in the area of didactics has until recently played a minor role in the design of pre-service teacher education programmes. Their research of 20 student teachers highlighted the need to explore the type of learning in which student teachers engage and how this learning can be fostered. They noted that the transition from student to student teacher to teacher was dependent upon the value position of the teacher educator. If the teacher educator has a value position that is andragogic, he or she is likely to adopt methods and practices that respect the student teacher, use the student teacher's experience as a source of learning as well as involve the student teacher in planning and evaluation of learning.

In sharing their experiences on teacher education, Russell (1997:32-45), Chin (1997:117-129), Northfield and Gunstone (1997:48-58) and Hoban (1997:133-147) have all attested to the need to consider student teachers as adults, capable of bringing to the learning encounter their own experiences, motivated by their own desire to be good teachers. They view the role of the teacher educator as a guide, coach and mentor. As teacher educators themselves, they experienced what they advocate and involved their student teachers in learning activities that were stimulating and involving. They emphasised the need for reflective practice and learning by both the teacher educator and the student teacher.

Nicol (1997:231), however, cautions that teacher educators should be careful about learning from their student teachers. She asserts that a teacher educator should “remain suspended and attentive on a fine balance between accomplishing her own teaching goals and experiencing teaching from prospective teachers’ eyes.” In this way the teacher educator will be able to “accompany” the student teacher with a clear view of the way ahead, but ready to adjust when the situation requires it. Similar views on adult learning were expressed by Brookfields (1991:52).

One example of an andragogic approach to pre-service teacher education is provided by Harris *et al* (2008:318-326). Working with student teachers who had joined an alternative-certification teacher training programme at a University and in an effort to reduce "reality shock," Harris *et al* (2008:318-326) encouraged their pre-service student teachers to voice their personal belief system about education through reflective writing. At the same time, students were asked to focus on critical incidents within the classroom and construct possible solutions that would openly contribute to a connection between the classroom practicum and the knowledge base being formed within the university setting. The key andragogic elements in this approach was the use of real experience gained by the student teachers, coupled with the challenge posed on the student teachers’ deeply held beliefs about teaching and learning. They conclude that this approach to teacher preparation enhanced learning and encouraged “real talk from real teachers”.

4.6 Conclusion

It has been established in the literature reviewed that assumptions about whether learners are children or adults influence the day to day practices of educators. It has also been noted that adult education and teacher education are guided by a similar set of principles. The dilemma lies in the application of these principles in practice in the pre-service teacher education environment where, as earlier stated, teacher educators are required to not only cater for the needs of their students who are adults, but also have to demonstrate to them those teaching approaches and methods that are most suitable for the teaching of children. The empirical investigation on the influence of teacher educator orientations on their educational practice should shed light on how to resolve this dilemma.

Chapter 5

Research design and methodology

5.1 Introduction

Chapters 2, 3 and 4 presented literature on educators' educational orientations, and the links of these to educators' decisions about teaching practice. This chapter provides an outline of the main methods used to collect data for the research. The instruments used in the study are described in detail and the justification for their use is provided. There is also an explanation of how data collected during the research was analysed.

The main methods of investigation used in this research were:

- A literature study of belief systems, andragogy and pedagogy as well as the nature of educational orientation. Literature on adult education, adult teaching principles and teacher education principles plus the relationship between adult teaching principles and teacher education principles was also investigated as a way of situating the research in the realm of adult education and pre-service teacher education. This was done in detail in chapters 2, 3 and 4. The purpose for reviewing literature for a research has been highlighted by Thomas (1998:80) as improving the quality of the research by discovering what other investigators have done in the area that is being investigated. It is this in-depth study that formed the basis for the choice, and to a large extent the design, of the data collecting

instruments that are to be described in this chapter. During the literature study a variety of sources were consulted. These sources included books and journals (both print and on-line) in the areas of belief systems, adult education, educational orientations, teacher education, and higher education.

- A survey of the educational orientation of teacher educators in Botswana using a structured Educational Orientation Questionnaire (EOQ) adopted from Hadley (Quam 1998:36-41) to collect data from teacher educators at the six colleges of education in Botswana. This is to ascertain their educational orientation.

- A semi-structured group interview to a stratified random sample of student teachers at two of the colleges of education, namely, Tonota College of Education and Francistown College of Education. This was to seek the student teachers' opinion on the educational orientation of their lecturers. In the same interviews student teachers were asked to indicate the most common teaching methods their teacher educators use.

5.2 Research aim and questions

The following general aim and specific objectives were pursued in this study. The aim was to determine the nature of the educational orientations of teacher-educators in the colleges of education in Botswana.

The following specific objectives relate to the general aim:

(1) To explore the life experiences that may contribute to the development of the educational orientations of teacher educators.

(2) To determine the role that teaching experience has on the educational orientations that teacher educators have framed for themselves.

(3) To investigate how student teachers experience the learning and teaching process as carried out by the educators.

(4) To determine the most common teaching methods used by teacher educators as perceived by the student teachers.

(5) To recommend how present and future teacher educators can adapt to take into account educators' educational orientations.

(6) To recommend how present and future teacher education programmes can be adapted to take into account educators' educational orientations.

In the light of the above objectives, the following research questions were developed and investigated:

(1) What are the educational orientations of teacher-educators in the colleges of education in Botswana?

(2) How do these orientations influence the teaching approaches adopted by these educators?

These questions beg the following specific sub-questions, which were addressed in the study:

(a) Does the length of teaching at a college of education have an influence on the educational orientations of the teacher educators?

(b) Does the educational orientation of a teacher educator influence his or her choice of teaching methods?

(c) How can present and future teacher educators adapt to take into account educators' educational orientations?

(d) How do existing teacher education programmes need to adapt to take into account educators' educational orientations?

(e) What experiences do student teachers, taught by teacher educators have during the teaching and learning process?

The following problem statement and null hypothesis was developed in order to statistically analyse sub-question (*a)* above,

Problem statement:

Is there a significant difference in the educational orientations held by teacher educators with different levels of teaching experiences in the colleges of education?

Null hypothesis:

There is no significant difference in the educational orientations held by teacher educators with different levels of teaching experiences in the colleges of education.

Answers to the other sub-questions would be drawn from analysis of both the quantitative and qualitative data gathered through the EOQ and interviews respectively. An overview of the research strategies considered and followed in the investigation is set out below.

5.3 Research strategy

Research needs to have a clearly defined strategy for it to have theoretical worth (Brown & Schulze 2001:3). A research strategy or approach is a guide that dictates how the research can be carried out, and that underpins the philosophical and ontological assumptions of a research. Before choosing a research approach for this investigation, it was deemed necessary to assess the range of alternative research philosophies and approaches that inform empirical studies.

Based on the extant research literature, two broad research philosophies prevail, namely: positivism (quantitative) and interpretivism (qualitative) research. A combination of these philosophies has provided a third paradigm, called emancipatory (mixed) research, in recent years (Polit & Hungler, 1997:258). Positivistic research strives to discover laws that are generalisable and that can govern the universe. It is informed mainly by realism, idealism, and critical realism. Within this paradigm, as Saunders *et al* (2003:37-38) notes, precise, measurable and verifiable observations are counted as truth. Research designs in a positivistic approach are usually quantitative, co-relational, experimental, and causal comparative. Techniques in data gathering can be questionnaires, observations, tests, and experiments (Polit & Hungler, 1997:258). This means, if this approach is chosen for this investigation, the above tools must be used.

The interpretive research paradigm strives to understand and describe human nature. It is underpinned by heuristic and phenomenological ideologies. In this paradigm, knowledge is subjective and ideographic because what counts as truth is

context dependent. There are therefore multiple realities, which are constructed. Research designs or strategies in the interpretive approach are usually qualitative, phenomenological, ethnographic and naturalistic (Polit & Hungler, 1997:258). Thus, data gathering is achieved through interviews, participant observation, case-studies, diaries, pictures, and documents.

The emancipatory approach is developed from a combination of the positivistic (quantitative) and interpretative (qualitative) paradigms. This is therefore a mixed philosophical approach. Within this paradigm, aspects of both the quantitative and qualitative techniques are applied on a phased basis (De Vos, 1998:37-38). Charlinger (in De Vos, 1998:38) developed a dominant-less-dominant framework for carrying out research using the mixed paradigm. This implies that data are collected using the principles of each paradigm (positivism and interpretivism) but either the quantitative or the qualitative aspect assumes a dominant or less dominant stance when the research is carried out. Saunders *et al* (2003:340-350) provides a comprehensive framework of these research paradigms. The mixed paradigm of quantitative and qualitative methods of data collection and analysis forms the framework that guided this study. The quantitative design was used to address sub-question (a) the qualitative design was used to address sub-question (b), (c) and (d) while sub-question (e) was addressed by both quantitative and qualitative designs.

5.4 Research design

The research design is a blue-print of how the investigation is conducted (De Vos 1998:37-38). Due to the nature of this investigation it was deemed necessary to use teacher educators in colleges of education as the main source of data, since it concerns their educational orientations. The adult learners (student teachers) whom these educators train were also deemed to have valuable data to inform this study. These data are mainly process and context specific. As such, the most suitable design to solicit these data was a combined exploratory qualitative-quantitative research design (De Vos 1998:37-38). Two reasons justified this choice.

Firstly, the quantitative paradigm was suitable for predicting and explaining causal relations among variables. It however excludes participants' meanings and interpretations from the data collected (Gephart 1999:1-9). This is why combining it with the qualitative approach was the best way to investigate the issues involved as it enabled the collection of rich data.

Secondly, a qualitative approach was deemed suitable as it allowed the researcher to enter the participants' life-worlds and study their lived experiences (De Vos 1998:38). This was the case of the student teachers who were commenting on the teaching methods their educator's use, as experienced by them. This means the dynamic, holistic and individual aspects of the human experiences was emphasised. This research was keen to capture this holistic aspect of educational orientation experiences, in its entirety, within the context of those who are experiencing them.

The phenomenological type of qualitative design was adopted since this approach is directly concerned with the lived experiences of people (Brown & Schulze 2001:1-20). In contrast, a survey was adopted for the quantitative phase. The research was designed to be exploratory and descriptive in nature, thus no attempts were made to establish cause and effect connections under experimental conditions (Steyn & Van Wyk, 1999:37-39). The central aim of the investigation was to *describe* the educational orientations of teacher educators and the influence of these on their choice of teaching methods and practices.

5.5 Research methodology

Research methodology describes the population from which data is collected and the strategies used to obtain samples during the quantitative and qualitative phase of the research. It also entails a description of how access to participants and to research sites was gained.

5.5.1 Population

The study population for this study was teacher educators in colleges of education in Botswana. This means all teacher educators in the six of these colleges fall within this scope. In July 2005, the total number of educators in the six colleges was 402 as outlined in Table 2.1. The student teachers in each of these colleges also fall within the study population. There were approximately 1960 student teachers in all six colleges in July 2005. The four colleges training teachers for primary schools share about half of this number, while the other half are in the two colleges training teachers for secondary schools **(**see Table 2.2).

5.5.2 Sampling

Since this research involved both a quantitative and qualitative phase, separate sampling procedures were followed. The sampling procedures followed for the quantitative and qualitative phase, respectively, are explained below.

5.5.2.1 Quantitative phase

In the quantitative phase, educators involved in the training of teachers were used. The active involvement of these teacher educators in the teaching and learning process means that they are likely to use their educational orientations in their professional tasks. Since belief systems and knowledge rest in the individual's mind, and are often embedded in organisational routines, processes, practices, systems, software and norms (Tiwana 2002), soliciting views from as many educators as possible at different levels of operation was the best approach to understand the nature of influences on educators' didactic practices.

The sample for the quantitative phase was drawn conveniently by the researcher. Convenient sampling is a non-probability sample. This sampling method suits the nature of this research because it was exploratory**.** Cluett and Bluff (2000:56) identified one guiding principle when selecting convenient samples, which is that all participants must have experienced the phenomenon under investigation. Thus, in this study all teacher educators were asked to participate. All those who agreed and

were judged information-rich by the researcher were included. A total of 123 teacher educators volunteered.

5.5.2.2 Qualitative phase

For the qualitative phase a sample comprising third year student teachers at Francistown College of Education and Tonota College of Education, two of the six colleges of education, was conveniently drawn and interviewed. This group of pre-service teachers was deemed information-rich because they had experienced the methods that teacher educators use in the process of teaching and learning. Their views were deemed vital to corroborate, or refute, the teacher educators' views on teaching methods and approaches used.

Twenty six participants comprised the sample for this phase**.** Brown and Schulze (2001:3-4) suggest that in qualitative research, broad coverage of a sample is unimportant given that the intention is to understand and describe a phenomenon rather than establish cause and effect relationships under rigorous conditions. Thus, the number of participants chosen for this phase was deemed adequate.

5.5.3 Access to participants and research sites

The researcher used the Principal in each of the colleges of education as *gatekeeper* (Cormack 2000:78). This was after seeking permission from the Botswana Ministry of Education (see Annexure 6). The researcher used the student confirmation letter obtained from his supervisor to obtain permission from the Ministry of Education (see Annexure 6). The gatekeepers had a duty to be aware of

research taking place within their organisation so that the effects of the research project may be monitored. Gatekeepers had the power to protect the participants from researchers who do not adhere to ethical principles (Lee 2005:458)**.** Gatekeepers also help to remove prospective obstacles that would otherwise inhibit the investigation. These notions motivated the use of gatekeepers in this research.

The gatekeepers have to be convinced that the research is credible and that the researcher is competent. Therefore, in this research, the researcher wrote to the key gatekeepers explaining the purpose of the research (see Annexure 7). In the case of Francistown College of Education and Tonota Colleges of Education, the researcher met with the gatekeepers in person to explain the research in more detail. These meetings helped to gain their trust (Polit & Beck in Lee 2005:458-459).

5.6 Data collection instruments

Data was collected through the use of The Educational Orientation Questionnaire and an interview schedule. Their structure, design and contents are now described.

5.6.1 The Educational Orientation Questionnaire

In the quantitative phase, data was collected through the use of the adapted Educational Orientation Questionnaire (see Annexure 2). The Educational Orientation Questionnaire (EOQ) is a standardised questionnaire that was developed by Hadley (Quam 1998:36-41**)** to determine the educational orientation of adult educators at Boston University in the USA (see Annexure 1). Permission to

modify the questionnaire was sought from the publishers, Nova Science (see Annexure 3)

The EOQ was adapted by the researcher for this research in order to determine the educational orientations of teacher educators. The questionnaire incorporates six attitudinal dimensions of a teacher educator's role as follows: (1) the purpose of education, (2) the nature of learners, (3) characteristics of learning experiences, (4) management of learning experience, (5) evaluation, and (6) the relationship of the teacher educator to learners as well as among learners.

The abovementioned dimensions are also the basis on which Knowles's adult education principles are based (Harris 2003:1-7). On these six dimensions, the questionnaire estimates the nature of the educational orientations of teacher educators, whether they are andragogic or pedagogic as explained in section 2.3.

The EOQ has been applied in different research contexts. It was used by Hopkins (1983:43a) to determine the educational orientation of nurse educators in Virginia, USA, and by Beder and Carrea (1988:75) to determine whether teachers of adults who were trained in an andragogic mode had a higher student attendance than those who were not so trained. In addition, Grubbs (1981) as well as Jones (1982) used the EOQ to investigate whether there was a relationship between educational orientation and gender, teaching experience, and teaching department among selected faculty at Oklahoma State University in the USA and North Carolina State University, respectively. These examples illustrate that the instrument is a well

developed and widely accepted tool for measuring the educational orientations of educators.

In adapting the EOQ, the researcher had to make modifications to the instrument so that the statements measuring educational orientations are restated to capture educational orientations of teacher educators specifically, instead of adult educators in general, as indicated in Table 5.1.

The EOQ has 60 statements that relate to the six dimensions of educators' educational orientations. The responses to the statements are scored on a five point Likert scale, ranging from: strongly agree, agree, uncertain to the statements, or, disagree to strongly disagree. One half (30) of the items measured andragogic characteristics. These items indicate an educational orientation that is akin to respondents using adult education principles. The other 30 items on the EOQ measured pedagogical characteristics. They indicate an orientation akin to the respondents' using pedagogic (child or youth) education principles.

The direction of scoring of responses to the andragogic and pedagogic related statements on the EOQ is not the same. The 30 statements measuring pedagogic characteristics are scored as: strongly agree (1), agree (2), uncertain (3), disagree (4) and strongly disagree (5). In contrast, the other 30 statements measuring andragogic characteristics are scored as strongly agree (5), agree (4), uncertain (3), disagree (2) and strongly disagree (1). Thus, 30 items are positive for an andragogic orientation, while 30 items are positive for a pedagogic orientation. Hadley (Quam,

1998:36-41) denoted statements numbered: 2, 4, 6, 8, 10, 12, 14, 18, 22, 24, 25, 26, 28, 30, 31, 33, 35, 36, 38, 40, 43, 45, 47, 49, 50, 51, 52, 55, 57 and 59 as positively andragogic**.** The other 30 statements are positively pedagogic. They indicate an orientation akin to the respondents' using pedagogic education principles against the above six dimensions. The researcher modified and revised the statements to suit this research, but retained their numbering as they appear in the original EOQ.

Before final distribution of the revised EOQ, it was piloted to establish the reliability of the questions. The questionnaire was administered to ten lecturers from all the six colleges of education attending a workshop on educational management. Further editing was done after comments from four of the researcher's peers at one college of education training secondary school teachers. Final editing was done to incorporate comments from the researcher's supervisor**.**

The researcher developed Table 5.1 to indicate the relationship of the statements in the questionnaire with the adult teaching principle(s) of Knowles (1980b) that were earlier tabulated in Table 5.1. A detailed description of why the statement is positively andragogic or positively pedagogic is also given in the table.

Table 5.1 The relationship of the statements in the questionnaire with adult teaching principles based on Knowles 1980b.

ADULT TEACHING PRINCIPLE	POSITIVELY ANDRAGOGIC	POSITIVELY PEDAGOGIC
1. Exposes learners to new possibilities for self-fulfilment.	**18. A lecturer's primary responsibility is helping students choose and develop their own direction for learning.** *This statement presupposes independence, voluntary and self*	**1. Education should focus on what is sure, reliable, and lasting.** *This statement presupposes that knowledge is static and therefore can only be transferred and not*

	direction to learn.	*created.*
2. Helps learners to clarify their own aspirations	**2. Teaching effectiveness should be measured by students' increase in examination of their own feelings, attitudes, and behaviour.** **4. It is hard to keep people from learning.** **8. Organization of the content and sequence of learning activities should grow out of students' needs, and with their participation...** **28. Educational objectives should define changes in behaviour, which the student desires, and the teacher help him or her to undertake.** **30. Students are quite competent to choose and carry out their own projects for learning.** **43. Maturity depends more on continuing growth in self-understanding than on growth in knowledge.** *These statements relate to self-examination, active participation and self -direction.*	**5. Learning is an intellectual process of understanding ideas, (concepts) and acquiring skills.** *This statement pre-supposes that all learning is external and that concepts and skills must be transferred from the teacher to the learner.* **13. A lecturer should help students understand the values of our society.** *The statement presupposes that it is the lecturer who knows the values of society and that the student has no knowledge of it*.
3. Helps learners to diagnose the gap between their aspirations and their present level of performance	**22. Emphasizing efficiency in teaching often blocks development of an effective learning climate.** *This statement takes into account individual needs of the learner and is therefore positively andragogic.* **31. A lecturer should help student free themselves of fixed habits and patterns of thought that block their growth.** *This statement is positively andragogic since it encourages flexibility in learning.*	**3. Students need a strong teacher who can direct their learning.** **27. A lecturer should be sure that his or her questions lead students towards the truth.** **32. The major requirement of a lecturer is the grasp of subject matter and the ability to explain (demonstrate) it clearly and interestingly.** *These statements imply lecturer directed learning and transmission of knowledge.* **16. It is the lecturer's responsibility to motivate students to learn what they ought to learn.** *This statement implies external motivation is the main driving force to learn*
4. Helps learners to	**10. The best sources of ideas for**	

identify life problems resulting from their learning needs	**improving teaching and education are students.** *This statement implies self-motivation and respect of learners.* **28. Educational objectives should define changes in behaviour, which the student desires, and the teacher helps him or her undertake.** *This statement assumes that the students voluntarily want to learn.*	
5. Provides physical conditions conducive to (adult) learning	**22. Emphasizing efficiency in teaching often blocks development of an effective learning climate** *The statement implies flexibility through creating a comfortable and conducive learning environment for learners*.	
6. Accepts and treats learners as persons.	**12. A lecturer by his/her behaviour should show each student that his/her abilities and experiences are respected and valued. 35. Use of a course (topical) outline often blocks a lecturer's perception of students' needs** *These statements assume that the teacher values and respects the learners' experiences*.	**15. Students tend to be much alike.** **29. Most students are able to keep their emotions under good control.** *These statements do not take into account the diversity of learners including emotional diversity*. **44. Students often "get off the subject" either intentionally or unintentionally.** *This statement does not indicate respect for the students as being able to manage their own learning.* **58. It is a good rule in teaching to keep relationships with students impersonal.** *This statement denotes lack of interest on the part of the lecturer in what the student does. It ignores the need to understand the unique needs and circumstances of individual learners*.
7. Seeks to build relationships of trust and co-operation between	**25. Competition among students develops conceit, selfishness, and envy.** **38. A lecturer should provide opportunities for warm relationships**	**11. Competition among students encourages keen learning.** *This statement encourages competition among learners which*

learners	**with students and among students.** **55. Without a cooperative climate, encouraging students to risk and experiment, significant learning is unlikely.** **57. To use students' experiences and resources for learning requires group activities rather than such methods as lectures.** *These statements emphasise trust, cooperation and respect between learners.*	*often leads to lack of trust and co-operation among learners.*
8. Becomes a co-learner in the spirit of mutual inquiry.	**55. Without a cooperative climate encouraging students to risk and experiment, significant learning is unlikely.** **59. Students and lecturers together should do planning units of work.** *These statements dwell on mutual respect and cooperation.*	**7. Giving examinations regularly motivates students to learn.** **17. Clear explanation by the lecturer is essential for effective learning.** **21. A lecturer should not change his/her expressed decision without unusually good reasons.** **53. If the teacher is not careful, student take advantage of his /her weaknesses.** **54. Considering the nature of students, a lecturer should never take chances but always play it safe.** *These statements assume external motivation through regular examinations and the absence of mutual respect between the student and the lecturer. The lecturer therefore cannot learn any thing from the student and cannot therefore afford to be viewed as being capable of making mistakes.*
9. Involves learners in a mutual process of formulating learning objectives.	**6. Effective learning occurs most often when students actively participate in deciding what is to be learned and how to learn it.** **28. Educational objectives should define changes in behaviour, which the student desires, and the teacher helps him or her undertake.** **51. The goals a student sets for**	**5. Learning is an intellectual process of understanding ideas, (concepts) and acquiring skills.** **19. A good lecturer makes the decision on what is to be taught, when, and how.** **41. Students do not often know what is good for them to learn.**

	himself/herself are the basis of effective learning (not the lecturer's goals). **52. A lecturer's mission is to help each student learn what he /she decides and to aid the student in achieving his/her personal goals.** *These statements are about involving learners in planning, and acknowledge learners' needs are paramount and that learners are capable of setting their own goals.*	*Statement 5, 19 and 41 presuppose that all learning is external and that it is the lecturer who knows what is best for the student and must therefore transfer knowledge and skills to the student.*
10. Shares with learner's methods to achieve these objectives.	**45. Educational programs, which tell what should be learned and how, rarely help students learn.** **52. A lecturer's mission is to help each student learn what he /she decides and to aid the student in achieving his/her personal goals.** **59. Students and lecturers together should do planning units of work.** *These statements emphasise the involvement of the learner in the planning of methods to use in learning.*	**56. A lecturer who does not plan the work for a class carefully is taking advantage of the students' ignorance.** **60. Good teaching is systematic. The lecturer should set up of a clear plan and schedule that he/she must stick to.** *These statements assume that a lecturer should rigidly stick to his/her plans since it is he/she who knows what to teach, when and how to teach it. It is therefore not necessary to involve learners in deciding on methods to use to learn.*
11. Helps learners to organise themselves to understand their tasks.	**18. A lecturer's primary responsibility is helping students choose and develop their own direction for learning.** **33. It is better for students to create their own learning activities and materials than for the lecturer to provide them.** *These statements denote the learner's self direction*	
12. Helps learners to exploit their own experiences on learning resources.	**10. The best sources of ideas for improving teaching and education are students.** **57. To use students' experiences and resources for learning requires group activities rather than such methods as lectures.** *These statements indicate that learner experience is a valuable source of*	

	learning. **14. To see education as a transmittal of knowledge is obsolete.** *This statement emphasises that knowledge is not static. And that it can be created and/or changed. It also denotes that there are other methods of learning other than transmission.*	
13. Gears presentation of her/his own resources to the levels of learner experience, and integrate learning in their own experience.	**47. The primary concern of a lecturer should be the immediate concerns of the student.** *This statement indicates that the lecturer aims at meeting the student's needs rather than those of society or his or her own needs.*	**20. A lecturer seldom needs to know the average students as separate individuals.** **39. Education should lead people to goals that lead to orderly, reasonable lives.** *These statements ignore learner diversity and the unique individual needs of students.*
14. The teacher helps learners to apply new learning to their experience, and thus make the learning more meaningful and integrated.	**24. Evaluating achievement should be primarily a responsibility of the student since he/she has the necessary data.** **28. Educational objectives should define changes in behaviour, which the student desires, and the teacher helps him/her undertake.** **52. A lecturer's mission is to help each student learn what he /she decides and to aid the student in achieving his/her personal goals.** *These statements denote that students are capable of evaluating their own learning and apply it to other circumstances and conditions.*	
15. Involves learners in devising criteria and methods to measure progress.	**24. Evaluating achievement should be primarily a responsibility of the student since he/she has the necessary data.** **26. A lecturer should discuss his or her blunders and learning with students.** **49. Assignments by a lecturer tend to restrict students' significant learning.** **50. Tests prepared by students are just as effective as those prepared by**	**7. Giving examinations regularly motivates students to learn.** **9. It should be the lecturer's responsibility to evaluate student achievement and assign grades.** **48. Grades should reflect the student's grasp of the subject or skill taught.** *These statements emphasize external motivation and the non-*

	the student. *These statements are about learners participating in the evaluation of their own learning*	*involvement of learners in evaluating their own learning.*
16. Helps learners to develop self-evaluation procedures	**40. Education should increase students' critical evaluation of our society and encourage them to try new, creative satisfying behaviour.** **49. Assignments by a lecturer tend to restrict students' significant learning.** **50. Tests prepared by students are just as effective as those prepared by the student.** *These statements recognise the learners as self critical and reflective persons capable of being able to direct their own learning.*	**23. A teacher education programme should be evaluated by the same standards as those of other educational programmes.** *This statement assumes that students and lecturers are not capable of developing their own self-evaluation procedures.*

5.6.1.1 Distribution and sampling of the revised EOQ

The procedure for distributing and sampling of the revised EOQ was as follows:

- The researcher personally distributed questionnaires to all lecturers at two colleges of education (Tonota College of Education and Francistown College of Education). These are the main sites of the research. The two colleges are representative of the other four colleges in terms of staff and student characteristics, subjects offered and programme structure as explained in section 1.7.3 ,1.7.4 and Table 5.2 of this research report

- At the other four colleges, questionnaires were hand delivered to reliable persons for distribution to all lecturers. Completed questionnaires were then collected and sent back by hand or post to the researcher. All responses were analysed.

The poor response rate associated with questionnaires was reduced through the

researcher's personal appeal to all respondents at Francistown College of Education and Tonota College of Education. Reliable persons were asked to distribute and collect the questionnaires at the other four colleges. However, the issue of poor completion was not anticipated due to the professional integrity and collegial atmosphere among staff at the colleges.

5.6.1.2 Procedure for data analysis of the EOQ

Data from the questionnaires was to be analysed using the Statistical Package for Social Sciences (SPSS) programme. The programme allows for the performance of a variety of statistical methods. Most of the data was to be analysed by means of cross-tabulation. According to Miles and Huberman (1996), the critical question in analysing quantitative data is whether the results and meanings one finds are valid, repeatable and right. Bearing this in mind, the data collected was to be also crosschecked with the literature.

5.6.1.3 Procedure for scoring and data analysis

The steps below were to be followed in the analysis of the revised EOQ:

- Scoring all items with a positive andragogic orientation as: Strongly agree (5), Agree (4), Uncertain (3), Disagree (2) and Strongly disagree (1).
- Scoring all items with pedagogic orientation as: Strongly agree (1), Agree (2), Uncertain (3), Disagree (4) and Strongly disagree (5).
- Entering the scores in the Statistical Package for Social Sciences (SPSS) programme.

- Respondents with mean scores greater than 3 were considered positively andragogic while those with a mean score of less than 3 were considered to be positively pedagogic. A mean score of 3 was considered neutral on the pedagogic-andragogic continuum.
- Means were to be statistically analysed for significance against teaching experience at a college of education (5 years or less, 6-9 years, more than 10 years).

5.6.2 The semi-structured group interview

The interview schedule had three sections (see Annexure 4). Section A recorded the college, gender year group and subject group of the interviewee. Section B required respondents to rate their lecturers on the eight adult education principles as proposed by Knowles (1980b). Respondents were asked to rate how often their lecturers:

- Used student experiences as a starting point when teaching.
- Respected their opinion.
- Involved them in planning their own learning.
- Allowed them to evaluate their own work.
- Involve them and their peers in their own assessment.
- Let them know why they are learning something.
- Get a chance to evaluate their lecturers.
- Allow them to observe their lecturers teach.

The interviewer then recorded the responses against a continuum of very often, often, rarely and never. The researcher also required respondents to give reasons and examples to support their answers. Section C required interviewees to indicate how often the following teaching methods are used by their lecturers. The methods were grouped in three categories, namely:

- Teacher centered methods (Demonstration, guided discussion, controlled discussion, lecture discussion, lecture, mentoring, tutorial).
- Learner centered methods (Brain storming, buzz groups, debate, fish bowl, group discussion, interview, listening and observing, panel, project, case studies, role play, simulations, gaming, seminar, snow balling, Therapy (T) groups, visits, tours, field trips, workshops).
- Individual student centered methods (assignments, contract learning, personalised system of instruction (PSI), the practical, self directed learning)

The interviewer recorded the responses against a continuum of very often, often, rarely and never.

5.6.2.1 Piloting and standardisation of the interview schedule

The first draft of the semi-structured interview schedule was discussed with the researcher's peers who made initial comments regarding the structure and wording of the questions. The edited version was then sent to the researcher's supervisor for editing and comment. Further editing and restructuring was then done after the supervisor's comment and consulting more literature on interviews especially Fraenkel and Wallen (2006:447-451). Four student teachers from each of the two colleges (Francistown College of Education and Tonota Colleges of Education) were

interviewed as a pilot group using the interview schedule. Results from the pilot were used to improve, revise and edit the schedule.

5.6.2.2 Sampling and conducting the interview

A stratified random sample of 26 students from a population of 250 third year students (13 from the humanities based teaching subjects, 5 from the practical subjects and 8 from the science based teaching subjects) from Tonota College of Education were interviewed. At Francistown College of Education a stratified random sample of 9 students from a population of 100 third year students (3 from humanities based teaching subjects, 3 from the practical subjects and 3 from the science based teaching subjects) was to be selected. The sampling was by use of numbered and blank papers in three boxes marked: HUMANITIES, PRACTICAL SUBJECTS and SCIENCE BASED SUBJECTS. The numbered papers were to be folded and mixed up with folded blank ones to make up the numbers in a subject group. At the end of a Foundations in Education lecture, the researcher placed the boxes at front of the lecture room and request each student to pick one folded paper from a box that corresponded to his or her teaching subject group. Those who picked up the numbered papers were the ones interviewed. The teaching subject groups in the colleges are illustrated in Table 5.2.

Table 5.2 Teaching subject groups in the colleges

Humanities based teaching subjects	Science based teaching subjects	Practical subjects
English Setswana Religious Education Moral education* Social studies Guidance and Counselling* Library Studies*	Science Mathematics Computer Studies*	Agriculture Home Economics. Art*, Art and Craft** Physical Education.* Design Technology*. Business Studies*

** Teaching subjects only offered at a college awarding a Diploma in Secondary Education.*

*** Teaching subjects only offered at a college awarding a Diploma in Primary Education.*

The interview schedule included open directional questions about the students' views on whether teacher educators exhibit andragogic tendencies in their teaching by using student teachers' experience, respecting student teachers' opinions, involving them in the planning of their learning, allowing them to evaluate their own work, involving them in their own assessment, telling them why they are learning a certain topic, allowing student teachers to evaluate their teaching or observing them teach. It also required respondent to indicate the most common teaching methods used by teacher educators.

These questions were to capture the diversity of the interviewees' evaluation of these two aspects in order to verify the educational orientation of their educators and therefore establish whether teacher educators use adult education principles in their teaching or not.

The sites for the interviews were secluded lecture rooms within each of the colleges. The researcher interviewed each student separately. During the interview, a copy of Annexure 5 (Teaching Methods used in Adult Education) was given to the student teacher to consult if he or she was not familiar with the teaching method being referred to. Efforts were taken not to reveal the final version of the schedule to the students prior to the interview by gathering all interviewees in one classroom and releasing only those who had completed the interview. This was to guard against extensive discussion of the interview questions prior to the interview itself.

Each student teacher was interviewed separately and his or her responses recorded on a separate interview schedule. This was to ensure that each interviewee response and opinions were recorded and analysed separately. It also helped them to feel comfortable and at ease to talk about the issues (Polit & Hungler, 1997:57). Each interview lasted about 15- 20 minutes. Morse and Field (1996:41) suggest that the interview should not last more than one hour as it can be tiring for both the participants and the interviewer.

Permission to conduct the interviews was sought by the researcher by visiting the college's Principal and Dean of Students. During these visits, the time and venues for the interviews were agreed upon.

All responses to questions in the interview schedule were recorded by the researcher. In addition, the researcher made an audio tape recording and wrote down notes during the interviews.

5.6.2.3 Procedure for analysis of the interview schedule

Thematic content analysis was used for data analysis for data collected in the qualitative phase. This was done to identify prominent patterns and themes. Where present, patterns and themes were pooled together to form categories and were used to answer the research questions. This required a careful reading of the data. It also entails identifying, coding and categorising patterns in the interview data (Corbin & Strauss, 1998:88; Miles & Huberman, 1996:142). In the execution of the process, the transcribed data of the interviews were read and reread in order to gain familiarity with the contents (Steyn & Van Wyk, 1999:38). Cluett and Bluff (2000:56) suggest that before data can be analysed, it must first be transcribed verbatim. This means that data obtained by interviews must be written word-for-word.

One transcript was analysed first to identify any emerging themes or category; these themes were coded and categorized accordingly. Criteria for including or excluding data within and across thematic-category were developed. This analysed transcript was then used as reference point in the analysis of subsequent scripts. Following this initial process, each theme and category that emerged was then compared to eliminate repetitions. This went on until independent and distinct categories were left. Cross validation of the categories with the literature and personal experience facilitated the final categories.

The results were then compared to those of the EOQ by noting the general and specific perceptions of student teachers within a college type and subject groups. The frequency of use, and examples of teaching methods most frequently applied

were to indicate whether adult teaching principles are used by teacher educators. The results were also compared to what is reported in literature. This was to increase the validity and reliability of collected data through the questionnaire.

5.7 Ethical Considerations

In a research of this nature it is important to ensure that participation is voluntary and that the information given remains confidential and anonymous.

5.7.1 Informed consent

De Vos (1998:25-26) postulate that informed consent relates to the communication of all possible information, as accurately as possible, about the research to the research participants. The participants of this research are adults, who have the capacity to give informed consent, directly. Consequently, the researcher provided information about the research to the teacher educators and student teachers, and formally requested their permission to participate in the investigation through the Ministry of Education (Annexure 6) and the college principals (Annexure 7). Issues related to the study such as its goal, procedures of investigation, possible advantages or disadvantages were shared with the respondents.

5.7.2 Voluntary participation

Participation in this study was strictly voluntary, with participants having the freedom to withdraw at any time. This was explained to them before the research commenced.

5.7.3 Anonymity and confidentiality

Strict anonymity and confidentiality of the subjects is maintained in this study, even if findings are to be published in future (Coetzee in Moll 2000:1-2). This was communicated to participants formally. To achieve this, the names and addresses of data sources were not recorded, and every attempt was made to group the data collected so that personal characteristics or traceable details of the participants were not possible (Robinson in Strydom 1998:28).

5.8 Summary

A detailed description of the methods of investigation used in the research with particular attention being paid to the description of the research strategy, design and methodology has been presented. This description has provided a scientific basis for the empirical investigation. The educational orientation questionnaire and the interview schedule, as tools used to collect data have been described in detail and justification for their use in the study has been provided. The need to follow the procedures in order to access respondents as well as issues relating to ethical considerations while conducting the research has been highlighted and the these procedures were strictly adhered to during the data collection phase of the research. A description of techniques for analysing the quantitative and qualitative data provides a basis for the analysis of the results of the empirical investigation that are presented and discussed in the next chapter.

Chapter 6

Data analysis and discussion

6.1 Introduction

Based on the design and methodology discussed in chapter 5 the findings obtained from the research are now presented starting with an overview of the specific research problem and their corresponding hypotheses for the quantitative phase of the study. Using statistical techniques the orientations of teacher educators; whether pedagogic and andragogic are determined. Finally, the qualitative results are presented and discussed separately and the chapter ends with a brief summary.

6.2 The quantitative results

This section presents data from the quantitative phase of the research. Specific research problem statement and corresponding hypothesis are first presented as outlined in Chapter 5.

6.2.1 The specific research problem statement and hypothesis

Problem statement

Is there a significant difference in the educational orientations held by teacher educators with different levels of teaching experiences in the colleges of education in Botswana?

Null hypothesis

There is no significant difference in the educational orientations held by teacher educators with different levels of teaching experiences in the colleges of education in Botswana.

6.2.2 Statistical techniques

In answering the research questions, data from secondary (literature) and primary sources (study participants) was analysed quantitatively and qualitatively, respectively. The quantitative data was loaded and analysed in the SPSS programme. Frequency tables generated from cross-tabulation of variables are presented below. The findings obtained from the qualitative methods were cross-checked with the literature. The demographic data of the sample is first described.

6.2.3 Quantitative results and discussion

6.2.3.1 Demographic characteristics

The demographic characteristics of the educators who participated in the research are displayed in Table 6.1 below. A total of 123 educators participated in the investigation. These participants were taken from the six colleges of education across the country. Although all six colleges offered courses in teacher education, the programme that they offered differed in scope. Two of the six colleges offered a three year Diploma in Secondary Education programme while the remaining four institutions offered a three year Diploma in Primary Education programme.

Table 6.1 Respondents demographic data

Variables	Responses	
	Frequency	Response (%)
Gender:		
Male	59	48.0
Female	64	52.0
Years of teaching at college level:		
Below 5 years	22	17.9
5-10 years	27	22.0
Above 10 years	74	60.1
College where working:		
Molepolole College of Education	11	8.9
Tonota College of Education	40	32.5
Francistown College of Education	9	7.3
Serowe College of Education	14	11.4
Lobatse College of Education	34	27.7
Tlokweng College of Education	15	12.2
Participants by college type		
Primary education	72	58.5
Secondary education	51	41.5
Subject group of specialisation:		
Humanities based teaching subjects	45	36.6
Science based teaching subjects	30	24.4
Practical teaching subjects	23	18.7
Core (Educational Foundations, Communication and Study skills, Special Needs Education, Educational Technology)	25	20.3

As Table 6.1 shows, the proportion of male (48.0%) and female (52.0%) educators who participated were about the same. The majority (60.2%) of these participants had over 10 years experience working as educators at the College of Education level, and worked at colleges which offered the three year programme in Primary Education (58.5%). The majority of participants were from the colleges which train teachers for the primary school level since those colleges are in the majority (four out of six).

However, in terms of subject area of specialisation, the majority of the respondents were from the Humanities based teaching subjects (36.6%), followed by the Science based teaching subjects (24.4%), Core subjects (20.3%), and the Practical subjects (18.7%). The Science based teaching subjects included Mathematics, Science (Biology, Chemistry, and Physics); the Practical subjects included Agriculture, Home Economics, Art and Craft, Design and Technology, Music, Computer Studies, Physical Education, and Business Studies; the Core subjects included Education Foundations, Communication and Study Skills, Special Needs Education, Educational Technology; and the Humanities based teaching subjects included the English, Setswana, Religious Education, Guidance and Counselling, Moral Education, and Library Studies.

6.2.3.2 Educational orientation factor analysis of positively pedagogic behaviours

Based on the extant literature discussed in Chapter 2 and 3, the educational orientations of educators may take either of two broad dimensions, namely: pedagogy or andragogy. Variation of each of these aspects is also possible within this broad dimension. Responses to the factors that were used to measure the educational orientations of educators in the colleges of education are shown in Table 6.2a and Table 6.2b, respectively. The statements in Table 6.2a measured the pedagogical aspects of educators' educational orientations.

Table 6.2a: Educational orientation factor analysis of positively pedagogic behaviours

Variables ***Positively pedagogic behaviours***	**% Responses**			
	Strongly agree/ agree	Un-decided	Strongly disagree/ disagree	**Total**
Education should focus on what is sure, reliable, and lasting	**81.3**	10.6	8.1	100
Students need a strong teacher who can direct their learning	**86.9**	9.8	3.3	100
Learning is an intellectual process of understanding ideas, (concepts) and acquiring skills	94.3	3.3	2.4	100
Giving examinations regularly motivates students to learn	58.5	13.8	27.7	100
It should be the lecturer's responsibility to evaluate student achievement and assign grades	89.4	2.4	8.1	100
Competition among students encourages keen learning	73.2	6.5	20.4	100
A lecturer should help students understand the values of our society	97.5	1.6	0.8	100
Students tend to be much alike	19.5	15.4	**65.1**	100
It is the lecturer's responsibility to motivate students to learn what they ought to learn	**86.2**	4.1	9.7	100
Clear explanation by the lecturer is essential for effective learning	**98.4**	0.8	0.8	100
A good lecturer makes the decision on what is to be taught, when, and how	65.8	7.3	26.9	100
A lecturer seldom needs to know the average students as separate individuals	34.1	17.1	**48.8**	100
A lecturer should not change his or her expressed decision without good reasons	64.2	16.3	19.5	100
A teacher education program should be evaluated by the same standards as those of other educational programs	39.1	14.6	**46.3**	100
A lecturer should be sure that his or her questions steer students towards the truth	82.1	12.2	5.7	100
Most students are able to keep their emotions under good control	52.1	13.0	34.9	100
The major qualifications of a lecturer are his or her grasp of subject matter and ability to explain (demonstrate) it clearly and interestingly to others	82.1	6.5	11.4	100
A lecturer should require assignments and grade them	83.7	11.4	4.9	100
Competition among students develops courage, determination and industry	66.7	12.2	21.1	100
Education should lead people to goals that result in orderly, reasonable lives	**94.3**	4.1	1.6	100
Often students do not know what is best for them	51.2	10.6	38.2	100
When a lecturer makes a mistake, he or she is likely to lose students' respect	37.4	12.2	**50.4**	100
Students often "get off the subject" either intentionally or unintentionally	55.3	31.7	13.0	100
Letting students determine learning objectives wastes too much time in irrelevant discussion	35.0	16.3	**48.8**	100
Grades should reflect the student's grasp of the subject matter	84.6	6.5	8.9	100
If the teacher is not careful, student can take advantage of him or her	78.0	17.1	4.9	100
Considering the possible effects on students, a lecturer should	55.3	22.8	22.0	100

usually play it safe rather than take chances				
A lecturer who does not plan the work for a class carefully is taking advantage of the students' ignorance	**82.9**	9.8	7.3	100
It is a good rule in teaching to keep relationships with students impersonal	56.5	21.1	20.3	100
Good teaching is systematic, so the lecturer should set up a clear plan and schedule that he/she must stick to	**79.6**	10.6	9.7	100

Each statement in Table 6.2a reflects a positively pedagogic orientation. Table 6.2a indicates that, in general, the majority of educators are in *agreement* with the statements. Over three-quarters of the educators agreed that good teaching is a systematic process which requires that plans and schedules must be followed (79.6%); that lecturer who does not plan the work for a class carefully is taking advantage of the students' ignorance (82.9%); that education should lead people to goals that result in orderly, reasonable lives (94.3%); and that education should focus on what is sure, reliable, and lasting (81.3%). They also agreed that educators are responsible for motivating students to learn (86.2%); and that an educator should be sure that his or her questions steer students towards the truth (82.1%); and that students need strong educators to direct their learning (86.9%); and to make the decision on what is to be taught, when, and how. This level *of agreement to these statements reflects a strongly pedagogic orientation.*

Of the 30 statements measuring the pedagogical orientations (or lack thereof) of educators, only five had a percentage of disagreement higher than agreement. In this regard, the majority of educators disagreed that students tend to be alike (65.1%), or that teacher education programmes should be evaluated by the same standards as those of other educational programmes (46.3%). They also disagreed that to let students determine their learning objectives wastes a lot of time and

results in irrelevant discussion (48.8%); furthermore, although they agreed that a clear explanation by the lecturer is essential for effective learning (98.4%), one half of the educators disagreed that when a lecturer makes a mistake, he or she is likely to lose students' respect (50.4%)

6.2.3.3 Educational orientation factor analysis of positively andragogic behaviours

The statements in Table 6.2b measured the andragogic aspects of educators' educational orientations. Each statement reflects a positively andragogic orientation. In general, the majority of educators are in *disagreement* with the statements. The majority (19 out of 30) of the statements had over 50 percent of the respondents disagreeing with them. The disagreement means that the majority of educators *reject* an andragogic perspective to their teaching.

Table 6.2b: Educational orientation factor analysis of positively andragogic behaviours

Variables ***Positively andragogic behaviours***	**% Responses**			
	Strongly agree/ agree	Un-decided	Strongly disagree/ disagree	**Total**
Teaching effectiveness should be measured by students' increase in examination of their own feelings, attitudes, and behaviour	18.7	24.4	56.9	100
It is hard to keep people from learning	22.0	17.1	61.0	100
Effective learning occurs most often when students actively participate in deciding what is to be learned and how to learn it	16.2	4.9	78.9	100
Organisation of the content and sequence of learning activities should grow out of students' needs, and with their participation	6.5	11.4	82.1	100
The best sources of ideas for improving teaching and education are students	21.1	13.8	65.0	100
A lecturer by his or her behaviour should show each student that his/her abilities and experiences are respected and valued	3.3	6.5	90.3	100
To see education as a transmittal of knowledge is obsolete	30.9	24.4	44.7	100

A lecturer's primary responsibility is helping students choose and develop their own direction for learning	11.4	4.1	84.6	100
Emphasising efficiency in teaching often blocks development of an effective learning climate	**47.9**	17.1	35.0	100
Evaluating achievement should be primarily a responsibility of the student since he or she has the necessary data	**59.3**	9.8	30.9	100
Competition among students develops conceit, selfishness, and envy	**60.1**	6.5	33.3	100
A lecturer should discuss his or her blunders and learning experiences with students	**42.3**	20.3	**37.4**	100
Educational objectives should define changes in behaviour, which the student desires, and the teacher helps him or her undertake	6.5	9.8	83.8	100
Students are quite competent to choose and carry out their own projects for learning	43.1	13.0	43.9	100
A lecturer should help student free themselves of fixed habits and patterns of thought that block their growth	3.3	8.1	88.6	100
It is better for students to create their own learning activities and materials than for the lecturer to provide them	27.6	12.2	60.2	100
Use of a course (topical) outline often blocks a lecturer's	**52.8**	13.0	34.2	100
A teacher education program should be evaluated only in terms of its own objectives	34.2	6.5	59.3	100
A lecturer should provide opportunities for warm relationships with students and among students	0.8	4.9	94.3	100
Education should increase students' critical evaluation of our society and courage them to try new, creative satisfying behaviour	0.8	5.7	93.5	100
Maturity depends more on continuing growth in self-understanding than on growth in knowledge	16.2	12.2	71.6	100
Educational programs, which tell what should be learned and how, rarely help students learn	**42.3**	17.9	39.8	100
The primary concern of a lecturer should be the immediate concerns of the student	21.1	15.4	63.5	100
Assignments by a lecturer tend to restrict students' significant learning	**68.2**	13.8	17.8	100
Tests prepared by students are just as effective as those prepared by the lecturer	**47.2**	43.1	9.7	100
The goals a student sets for himself or herself are the basis of effective learning (not the lecturer's goals)	20.3	14.6	65.1	100
A lecturer's mission is to help each student learn what he /she decides and to aid the student in achieving his or her personal goals	27.6	10.6	61.8	100
Without a cooperative climate encouraging students to risk and experiment, significant learning is unlikely	8.1	22.8	69.1	100
To use students' experiences and resources for learning requires group activities rather than such methods as lectures	6.5	9.8	83.7	100
Planning units of work should be done by students and lecturers together	31.7	21.1	47.2	100

Only the following four positively andragogic statements had 50 percent or more of the respondents in agreement with them: (a) Assignments by a lecturer tend to

restrict students' significant learning (68.2%); (b) Competition among students develops conceit, selfishness, and envy (60.1%); (c) Evaluating achievement should be primarily a responsibility of the students since they have the necessary data (59.3%); and (d) The use of a course (topical) outline often blocks a lecturer's perception of student needs (52.8%). The educators may have agreed with these statements because they have some inclination to a pedagogic view of teaching. The fact that more than 50% of the respondents disagreed to the other positively andragogic statements indicates that most teacher educators at colleges of education in Botswana have a pedagogic orientation.

6.2.3.4 Comparison of educational orientations by gender

A test of the educational orientation by gender revealed different results. This is shown in Table 6.3.

Table 6.3: Comparison of educational orientations by gender

Educational orientations	**Responses**				
	Percent of educators agreeing with the statements			**Compared proportions**	
	Male	**Female**	Total	**X^2 (1df)**	**P-value**
Pedagogic	93.9	85.1	88.6	2.234	0.135
Andragogic	44.9	56.8	52.0	1.661	0.197

Table 6.3 indicates that the majority of male (93.9%) and female (85.1%) held a *pedagogic orientation* with respect to the positively pedagogic statements. Just

under one half (44.9%) of males and a slightly higher proportion of females (56.8%) held andragogic orientations with respect to the positively andragogic statements.

No gender differences were found for any of the educational orientations (p-value ranged from 0.135 to 0.197). This means the percentage of males with pedagogic orientation (93.9%) did not differ significantly from that of females (85.1%). Similarly, although small, the percentages of males with andragogic orientation (44.9%) did not differ significantly from those of females (56.8%).

Although overall, the male and female educators did not differ significantly when their responses to positively pedagogic statements (p-value 0.135) or to positively andragogic statements (p-value 0.197) are compared, they however differed significantly when the cohort is compared collectively on the pedagogic-andragogic dimension. Collectively, the male and female cohort is highly pedagogic (88.6%).

6.2.3.5 Educational orientation and teaching experience at a college of education

Data collected through the EOQ was analysed to find out whether there was a significant difference in the educational orientations held by teacher educators with different levels of teaching experiences in the colleges of education. Table 6.4 shows the overall pattern of responses in respect of educators' work experience at a college of education. Over 60 percent of **all** the educators agreed to the statements which depicted a pedagogical orientation to their teaching, regardless of the number of years they had worked at a college of education. In contrast, over 50% of **all** the educators disagreed to any of the positively andragogic statements regardless of their work experience at a college of education. This was true even when the type of

college where the teacher educator is working or the subject he or she teaches were taken into consideration.

Table 6.4 Educational orientation in terms of teaching experience at a college of education.

Variables	Educational orientations					
	Positively pedagogic % response			Positively andragogic % response		
	SA/A	U	SD/D	SA/A	U	SD/D
Years of work experience:						
Less than 5 years	**64.1**	13.4	22.5	30.5	15.1	**54.4**
Between 5 and 10 years	**73.7**	11.6	14.7	28.4	12.5	**59.1**
Above 10 years	**68.6**	10.7	20.7	24.8	13.9	**61.3**
College type:						
- Diploma in Primary Education	**69.9**	11.1	19.0	25.2	12.5	**62.3**
- Diploma in Secondary Education	**67.6**	11.8	20.6	28.5	15.8	**55.7**
College of work:						
Molepolole College of Education	**69.7**	10.0	20.3	30.0	12.1	**57.9**
Tonota College of Education	**67.0**	12.3	20.7	28.2	16.7	**55.1**
Francistown College of Education	**70.3**	8.5	21.2	32.2	10.8	**57.0**
Serowe Co0llege of Education	**69.0**	13.1	17.9	24.5	16.0	**59.5**
Lobatse College of Education	**70.3**	12.7	17.0	22.3	12.9	**64.8**
Tlokweng College of Education	**69.3**	7.2	23.5	28.5	9.1	**62.4**
Subject groups:						
Humanities based	**67.2**	11.0	21.8	25.3	13.2	**61.5**
Science based	**72.4**	11.1	16.5	27.2	15.7	**57.1**
Practical based	**68.8**	13.4	17.8	27.4	15.1	**57.5**
Core (FoE, CSS, EduTech, SNE)	**67.8**	10.7	21.5	27.5	11.6	**60.9**

However, an analysis of the calculated **mean scores** for the positively pedagogic statements [Strongly agree (1), Agree (2), Uncertain (3), Disagree (4) and Strongly disagree (5)] and positively andragogic statements [Strongly agree (5), Agree (4), Uncertain (3), Disagree (2) and Strongly Disagree (1) was done, it was noted that there were significant differences between teacher educators with different years of teaching experience regarding the pedagogical and andragogic orientation factors, $F(2)=3.264$; $p<0.05$ and $F(2)=3.442$; $p<0.05$), as shown in Table 6.5.

This therefore means that we reject the Null hypothesis, which states that *there is no significant difference in the educational orientations held by teacher with different*

levels of teaching experiences in the colleges. We accept the alternative hypothesis which states that *there is a significant difference in the educational orientations held by teacher educators with different levels of teaching experiences in the colleges.*

Table 6.5 Differences between educational orientations for teacher educators of different teaching experiences

Educational orientations	N	Mean	df	F-value	Significance
Pedagogic orientations:					
Less than 5 years	22	**1.73**			
Between 5 & 10 years	27	1.30			
Above 10 years	74	**1.73**	2	3.264	p<0.05
Total	123	1.63			
Andragogic orientations:					
Less than 5 years	22	**1.73**			
Between 5 & 10 years	27	1.26			
Above 10 years	74	**1.53**	2	3.442	p<0.05
Total	123	1.50			

Tukey's post hoc test (Hall 1988:1) which calculates the variance in the mean scores of more than two groups revealed the following for **the average pedagogic orientation factors**:

(a) The mean of teacher educators with less than 5 years teaching experience(1.73) is significantly higher, on the 5%-level, than that of teacher educators with between 5 and 10 years teaching experience (1.30).

(b) The mean score for teacher educators with above 10 years of teaching experience (1.73) is significantly higher, on the 5% level, than that of teacher educators with between 5 and 10 years teaching experience (1.30).

This then leads to the assertion that teacher educators with less than 5 years teaching experience, or with above 10 years teaching experiences are significantly more motivated to adopt a pedagogical orientation in their teaching than teacher educators with between 5 to 10 years teaching experiences.

Similarly, the Tukey's post hoc tests (Hall 1988:1) revealed the following for the average andragogic orientation factors:

(a) The mean of teacher educators with less than 5 years teaching experience is significantly higher, on the 5%-level, than that of teacher educators with between 5 to 10 years teaching experiences (1.26).

(b) The mean of teacher educators with less than 5 years teaching experience is significantly higher, on the 5%-level, than that of teacher educators with above 10 years teaching experiences (1.53).

(c) The mean of teacher educators with above 10 years teaching experience is significantly higher, on the 5%-level, than that of teacher educators with between 5 and 10 years teaching experience (1.26).

This means that teacher educators that have less than 5 years teaching experience were significantly more motivated to reject an andragogic orientation in their teaching than educators with between 5 to 10 years of teaching experiences. Likewise, educators with over 10 years teaching experience were more likely to reject an andragogic teaching approach than educators with between 5 to 10 years teaching experience.

6.2.4 Discussion of the quantitative results

Extant literature suggests that the educational orientations of educators may be of two forms, that is, pedagogic or andragogic. The extant literature also suggests that these approaches to teaching are generally aimed at different audiences, with pedagogy seen as an approach for teaching children and andragogy as an approach

for teaching adults. This research has shown that the most prevalent approach to teaching among teacher educators in the colleges is pedagogical. This is consistent across college type and subject area of specialisation of the educators. One reason for this generally consistent teaching posture seems to be teaching history and educators' beliefs, both of which have been shown in previous research to influence choice of teaching methods (see section 2.3).

The research has also shown that the majority of male (93.9%) and female (85.1%) respondents held a pedagogic orientation in their teaching. Significantly fewer males (44.9%) and female (56.8%) held andragogic orientations. However, in terms of gender, there is no significant difference in the educational orientations held by the male and female teacher educators in the colleges. This means both genders approach teaching from a pedagogical perspective.

No significant difference emerged in the approach that male and female educators take to their teaching. Pedagogy is a process of educating and training that is teacher-focused, rather than learner-focused. The teacher assumes accountability for the process, choosing which instructional methods are used, determining when to delve deeper and/or proceed to new topics, and evaluating progress and completion. This practice seems endemic in the education system in Botswana, and the educators themselves may have learned that this is how teaching is to be undertaken. As several studies have shown (see section 2.3.2), changing this deep-rooted history often means changing the belief systems of these educators. By virtue of this, educators continue to teach the way they were taught as students. Another

explanation, however, is that many of the educators in the colleges were teachers of children in the previous employment. They may have difficulty making the transition from teaching children and youths to teaching adults (see section 2.3.3).

The implication that teacher educators are teaching adults using approaches that are best suited for children also raises important questions. Several studies have argued that adults and children approach learning differently. Therefore, each group should be taught using different teaching methods. Adults have been shown to be more likely to assume accountability for their learning process, choose which instructional methods are used, determine when to delve deeper and/or proceed to new topics, and evaluate progress and competency. Teaching and learning situations in which these features are absent have shown in previous research to cause conflict between learners and educators (see section 3.3.2). This implication needs to be further explored.

In terms of work experience, the study found a significant difference between teacher educators with different years of teaching experience regarding the pedagogic and andragogic orientation factors, separately. Teacher educators with less than five years teaching experience, or with more than 10 years teaching experiences were significantly more motivated to adopt a pedagogical orientation in their teaching than teacher educators with between five and ten years teaching experiences. This may be related to career transition factors. Previous research in career development and transition of teachers has suggested that educators often

consider career change after five years of work. During this period, many of these educators experiment a lot on the job (see section 3.3.2).

The above mentioned assertion is supported by the fact that teacher educators who have less than 5 years teaching experience were significantly more motivated to reject an andragogic orientation in their teaching than those educators with between 5 and 10, or over 10 years of teaching experiences. But, educators with more than 10 years teaching experience were more likely to reject an andragogic teaching approach than educators with between 5 and 10 years teaching experience at a college. This could be because those in their mid careers are more confident and tend to experiment as compared to those who have just joined the colleges or those who are older and have already entrenched routines. This may be one reason why educators with less than 5 or over 10 years of teaching experience have less enthusiasm to change their teaching approaches.

Although the above results provide key evidence regarding the educational orientations of teacher educators, the reaction of the students whom they teach to the teaching approaches adopted by educators is unclear. The qualitative results explored below revealed much of this issue.

6.3 The qualitative results

The qualitative phase of investigation was undertaken among student (trainee) teachers who were pursuing the Diploma in Primary Education and the Diploma in Secondary Education programmes. The aim was to answer the following question:

What experiences do the student teachers, taught by educators in the colleges, have during their learning and teaching process? It was necessary to gather this data to verify the results obtained in the quantitative phase of this study.

6.3.1 Realisation of the sample

The planned interview sample was fifty-eight teacher trainees but due to a variety of reasons, only 35 participated in the interview. Twenty six were from Tonota College of Education and nine from Francistown College of Education. The two colleges were selected as a representative sample of the six colleges since Francistown College of Education represented the colleges offering a Diploma in Primary Education and Tonota College of Education represented colleges offering a Diploma in Secondary Education.

The thirty five teacher trainees were selected randomly from the graduating year, following a preliminary informal discussion of the quantitative results with them and their teacher educators. The decision to include these teacher trainees was based on the researcher's judgment that they had experienced the teaching styles and methods of the teacher educators who participated in the quantitative survey, and thus, they were information-rich and could inform the study. Thirty of the teacher trainees were female. All the selected teacher trainees were in the third and final year of the programme and represented various teaching subjects.

6.3.2 Qualitative Findings

Two issues were investigated in this phase of the study, namely: (a) student teachers' experiences of the teaching and learning process with their teacher educators; and (b) the teaching methods used by teacher educators (see Annexure 4).

6.3.2.1 Student teachers' experiences of the teaching and learning process

Whether lecturers use the student teachers own experiences as a starting point

In addition to concerns about the methods their educators used to introduce lessons, many of the student teachers also talked about how their unique experiences as individuals are used during the teaching and learning process. It was generally felt among interviewees that educators used their experiences especially when teaching, *"…a topic students are familiar with"* or *"as an introduction to a topic."* Another student teacher suggested that *"…the practice is very often done when we are introduced to a topic, especially in languages and Social Studies".*

However, the notion that the teacher educators capture and use their learners' experiences while teaching was challenged. Some interviewees remarked that they had no such experience. This is well echoed by one respondent:

"…They rarely use my experience. I struggle a lot, such that I catch up and be at the level that is expected…sometimes you would even think that they do not consider it at all; that all of us are young people."

A number of the interviewees seem to think that one reason for the lack of interest in their experiences is their educators' lack of respect for them as learners.

"…*Lecturers come with what they know/what they believe is correct, so when a student comes up with something that the lecturer does not have, it is regarded wrong."*

Respect your opinion

One respondent echoed a sentiment which summed up how many of the respondents felt about the issue of respect. They claimed that the educators only give the impression that they respect their opinions, by saying that they want to hear from them:

"…In the lessons we would be given time to air our views and experiences especially in Special Needs Education; we will talk about people with exceptional needs that we have been exposed to and how they cope in life. But not much time is given to this."

It needs to be noted that the number of respondents who felt that their educators had no respect for their opinion was few. Much seems to depend on the college and subject that the respondent was attending. Respondents pursuing the Diploma in Secondary Education programme in the Humanities based subjects (Guidance and Counselling, Moral Education) were more likely to have their opinions respected than those in the other subject groups. However, for the majority of student teachers, their opinions were respected.

Involvement in the planning of your own learning

The student teachers in the two colleges of education appeared to have had mixed experiences with their educators during their teaching and learning process. A key aspect of their experience that was first assessed was the extent that their educators

involved them in the planning of their learning. In general involving learners in their planning appeared to have had low priority for teacher educators in the two colleges. This sentiment is well echoed by one respondent, who noted:

"…Most of the times we are given what is already planned, lecturers rarely have us participate in what they are doing for us. This is strange because we are supposed to learn from them…"

Although sentiments of teacher educators' non involvement of their learners prevailed, it seems that the student teachers' level of involvement in planning their learning differed with the subject department, or their subject major-minor combinations. Some students in the Science based and Practical subjects reported some level of participation compared with learners in the Humanities based subjects. This notion is shared by several student teachers in the college offering a Diploma in Primary Education:

"…I think some of the subjects demand that we are involved in the planning of learning. Very often in Home Economics, and Agriculture we are involved. But for Religious Education most of the times we are not…as for Foundations in Education and English rarely; but never in Setswana".

Many of the student teachers appeared to believe that the low level of their involvement in the planning of their learning in some of their subjects is a result of the academic curriculum. This point is well captured by one student teacher who remarked that "…*the course outline comes structured and does not encourage flexibility in planning…the problem has to be addressed at that (course outline) level*". This observation implies that the non-involvement of student teachers in the planning of their learning is a problem. However, the extent to which this perceived

problem is shared by the entire student-teacher population was not explored. It is outside the scope of the present study.

Allow you to evaluate your own work

Most respondents said that they are rarely or never involved in evaluating their own work as explained by one who remarked "*Evaluation is done by the lecturer in the absence of the student*" A few student teachers however felt that this depended on the subject or module as noted from this remark: *"…in some modules yes, in others not at all. In Physical Education during practicals."* Or *"…only during Teaching Practice to see our strengths and weaknesses."*

Involve you and your peers in your own assessment

The responses to this practice were mixed with many saying that this is rarely done while others felt that this was done only during Micro-teaching. One notable comment was by one interviewee studying Physical Education who said, *"In Physical Education they need assistance to estimate practical skills."*

The responses here again seem to point to the fact that involving peers in evaluation was more characteristic to practical skills training than with other subject areas or educational endeavours.

Whether educators tell you why you are learning a certain topic, skill or concept

One of the key elements of effective learning is informing the learners of the "what" and "why" they are to learn (see section 3.4). Student teachers were asked about

their experiences in this regard. Reactions were mixed concerning the extent that teacher educators inform their student teachers at the start of a lesson of the topic, skills or concepts that they would learn about:

"…Topics are introduced but I don't remember anyone stressing why we are learning them…this never happened…We learn in order to pass examinations, that's the truth about what goes on in our lessons…Like for example in most courses taught, we are just lectured to without being told why do we learn a certain topic".

Another student teacher echoed similar remarks but suggested that it is more likely to find the practice in certain subject areas:

"…It is more often in Agriculture but rarely in Home Economics". One said *"rarely"* and yet another one commented that this is never done.

Despite the notion among some student teachers that their educators seldom or never inform them prior to the start of a lesson or topic, or skill or concept to be learned, the general view among the interviewees is that their educators do tell them why they are learning a topic, skill or concept:

"…*This is done very often in terms of the methodology components so that we know the application part of it…In Guidance and Counselling we are told that we need to make sure that pupils have a strong foundation. All topics teach us on how we can make that possible, for example self esteem, self-concept - they all talk about love and acceptance".*

The above observation points to variations in the way different educators in the different subject areas approach their teaching tasks. It seems that the nature of the

topic or skill being taught and whether the topic or skill is being introduced for the first time or is a continuation of previously introduced topic or skill influences what the educators do at the start of each lesson. This issue was quite pronounced during the interviews; a number of student teachers remarked:

"…this is done often by lecturers when topics relate to our daily lives." One however said *…"they do this very often especially when starting a new topic…when taught a topic; they inform you how to match it to the JSS (junior secondary school) level and the common errors."*

Another student teacher remarked that: *"This is very often done"* and that *"Most times it is part of the introductions in Moral Education and Guidance and Counselling."*

Give you a chance to evaluate their teaching or allow you to observe them teaching pupils

Almost all student teachers interviewed said their educators rarely give them a chance to evaluate their teaching or observe them teaching others. Many of the student teachers pointed to contradictions in their educators teaching practice:

> *"…What we are told to do is not what is being done to us. It's very rare for lecturers to let us air out our views concerning their teaching. It's like what they do is perfect …Maybe the curriculum does not allow it*." And yet another said*," It is vice versa. They observe us during teaching practice. Even in tutorials or methodology, we do the work practically, but for the lecturer it is just theory."*

The above observations and the general experiences shared by the student teachers point directly to the teaching approaches adopted by the educators. Issues of involving learners in the planning of their learning, using learners' experiences as starting point in teaching, allowing learners to evaluate themselves and the educators, and respecting learners' opinion during the teaching and learning process are linked to the andragogic perspective of teaching. The views shared in the interviews by the student teachers regarding their experiences in the teaching and learning process, suggest that an andragogic approach is not embraced by most educators.

6.3.2.2 Perceived teaching methods used by educators

The student teachers spoke about the teaching methods that their educators used during their lessons. This data informs this research in the sense that it allows the researcher to determine the extent to which the educators' orientation is pedagogical or andragogic. A number of the student teachers indicated that their educators used both teacher-centred and learner-centred methods of teaching. It was clear however that teacher-centred methods dominated the educators' teaching practice. The majority of student teachers from the sample colleges indicated during the interviews that the two teacher-centred teaching methods very often used were (a) lecturing, and (b) controlled or guided discussion. These were followed by occasional tutorials and mentoring.

In contrast, the student teachers indicated that group discussions, listening and observing, and brainstorming were the common learner-centred methods. Although these methods are often used, their frequency was minimal, compared to the lecture and discussion methods. The least used learner-centred methods of teaching were debate, role play, buzz groups, gaming, simulation, field trips and workshops. The only widely used individual learner-centred method most frequently used was assignment. Experiential learning was rarely used. Self-directed learning and the personal tutorial were the least used individual learner-centred methods. Tables 6.6a and 6.6b show the distribution of student teachers' rating regarding their lecturer's frequency of using various teaching methods at Francistown College of Education and Tonota College of Education respectively.

Table 6.6 a Distribution of Francistown College of Education student teachers' perceptions regarding their lecturer's teaching methods.

Teaching Method	Very Often		Often		Rarely		Never		Total	
Teacher centred	**Count**	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**
Demonstration	1	11.1	3	33.3	3	**33.3**	**2**	**22.3**	9	100
Guided discussion	**1**	**11.1**	**8**	**88.9**	0	0	0	0	9	100
Controlled discussion	**1**	**11.1**	**8**	**88.9**	0	0	0	0	9	100
Lecture discussion	**3**	**33.3**	**6**	**66.7**	0	0	0	0	9	100
Lecture	**4**	**44.5**	**3**	**33.3**	1	11.1	1	11.1	9	100
Mentoring	1	11.1	2	22.2	2	**22.2**	**4**	**44.5**	9	100
The tutorial	1	11.1	3	33.3	4	**44.5**	**1**	**11.1**	9	100
Learner-centred										
Brain storming	**3**	**33.3**	**3**	**33.3**	2	22.3	1	11.1	9	100
Buzz Groups	**3**	**33.3**	**3**	**33.3**	3	33.4	0	0	9	100
Debate	0	0	1	11.1	6	66.7	2	22.2	9	100
Fish bowl	0	0	0	0	0	0	9	100	9	100
Group discussion	**4**	**44.5**	**5**	**55.5**	0	0	0	0	9	100
Interview	0	0	2	22.2	2	22.2	5	55.6	9	100
Listening and observing	1	11.1	2	22.2	1	11.1	3	33.3	9	100
Panel	1	11.1	2	22.2	2	22.2	4	44.5	9	100

Project and Case Studies	7	77.8	4	44.4	2	22.2	2	22.2	9	100
Role play, simulation and gaming	0	0	0	0	8	88.9	1	11.1	9	100
Seminar:	0	0	0	0	6	66.7	3	33.3	9	100
Snow balling	0	0	0	0	2	22.2	7	77.8	9	100
Therapy (T) groups	0	0	4	44.5	3	33.3	2	22.2	9	100
Visits, tours, field trips	**3**	**33.3**	**3**	**33.3**	3	33.4	0	0	9	100
Workshops	0	0	2	22.2	1	11.1	6	66.7	9	100
Individual student – centred										
Assignments	**9**	**100**	0	0	0	0	0	0	9	100
Computer assisted learning	0	0	0	0	1	11.1	8	88.9	9	100
Contract learning	0	0	0	0	2	22.2	7	77.8	9	100
Experiential learning	0	0	4	44.5	2	22.2	3	33.3	9	100
Personalised system of instruction – (PSI)	1	11.1	2	22.2	3	33.4	3	33.3	9	100
Personal tutorial	0	0	2	22.2	1	11.1	6	66.7	9	100
Self directed learning	2	22.2	1	11.1	0	0	6	66.7	9	100

The data in Table 6.6a shows the three broad categories of teaching methods, and the distribution of student teachers' responses thereof. Of the seven *teacher-centred methods*, the student teachers at Francistown College of Education felt that the following were very often or often used: lecture (77.7%), lecture discussion (100%), controlled and guided discussion (100%). The three teacher-centred methods that were rarely used were mentoring (66.6%), followed by demonstration (55.6%) and tutorial (55.6%).

On the other hand, the *learner-centred methods* which student teachers of Francistown College of Education judged to be very often or often used by their lecturers were: group discussion (100%), brainstorming (66.6%), visits or tours (66.6%), and buzz groups (66.6%). As data in Table 6.6a indicates, over 50% of the students felt that other learner centred methods were rarely or never employed by

their lecturers. The same sentiments were expressed about the frequency of use of individual-centred teaching methods.

Table 6:6 b Distribution of Tonota College of Education student teachers' perceptions regarding their lecturer's teaching methods.

Teaching Method	Very Often		Often		Rarely		Never		Total	
Teacher centred	**Count**	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**
Demonstration	**5**	**19.2**	**11**	**42.3**	6	23.1	4	15.4	26	100
Guided discussion	**3**	**11.5**	**20**	**76.9**	3	11.6	0	0	26	100
Controlled discussion	**6**	**23.1**	**12**	**46.2**	2	7.6	6	23.1	26	100
Lecture discussion	**16**	**61.5**	**10**	**38.5**	0	0	0	0	26	100
Lecture	**21**	**80.8**	**3**	**11.6**	2	7.6	0	0	26	100
Mentoring	2	7.6	2	7.7	**10**	**38.5**	**12**	**46.2**	26	100
The tutorial	1	3.9	1	3.9	**4**	**15.3**	**20**	**76.9**	26	100
Learner-centred:										
Brain storming	**3**	**11.6**	**16**	**61.5**	3	11.6	4	15.3	26	100
Buzz Groups	**6**	**23.1**	**11**	**42.3**	2	7.7	7	26.9	26	100
Debate	4	15.4	2	7.7	**5**	**19.2**	**15**	**57.7**	26	100
Fish bowl	3	11.6	2	7.7	**3**	**11.5**	**18**	**69.2**	26	100
Group discussion	**16**	**61.5**	**9**	**24.6**	1	3.9	0	0	26	100
Interview	0	0	1	3.9	7	**36.9**	**18**	**69.2**	26	100
Listening and observing	**5**	**19.2**	**11**	**42.3**	3	11.6	7	26.9	26	100
Panel	0	0	1	3.9	**10**	**38.4**	**15**	**57.7**	26	100
Project and Case Studies	2	7.6	6	23.1	**10**	**38.5**	**8**	**30.8**	26	100
Role play, simulation and gaming	5	19.2	6	23.1	**11**	**42.3**	**4**	**15.4**	26	100
Seminar	1	3.8	0	0	**6**	**33.1**	**19**	**73.1**	26	100
Snow balling	0	0	4	15.4	**2**	**7.7**	**20**	**76.9**	26	100
Therapy (T) groups	0	0	1	3.9	**6**	**23.1**	**19**	**73.0**	26	100
Visits, tours, field trips	0	0	5	19.2	**9**	**34.6**	**12**	**46.2**	26	100
Workshop:	0	0	1	3.9	**5**	**19.2**	**20**	**76.9**	26	100
Individual student – centred										
Assignments:	**23**	**88.5**	**3**	**11.5**	0	0	0	0	26	100
Computer assisted learning	0	0	4	15.4	0	0	22	84.6	26	100
Contract learning	0	0	2	7.7	**4**	**15.4**	**20**	**76.9**	26	100
Experiential learning	0	0	5	19.2	**10**	**38.5**	**11**	**42.3**	26	100
Personalised system of instruction – (PSI)	0	0	7	26.9	**2**	**7.7**	**17**	**65.4**	26	100
Personal tutorial	0	0	2	7.7	**5**	**19.2**	**19**	**73.1**	26	100
Self directed learning	0	0	4	15.4	**3**	**11.6**	**18**	**69.2**	26	100

The data in Table 6.6b shows the three broad categories of teaching methods and the distribution of student teachers' responses thereof in Tonota College of Education. Of the seven *teacher-centred methods*, the student teachers at Tonota College of Education felt that the following four were very often or often used: lecture discussion (100%), lecture (92.4%), guided discussion (88.4%), controlled discussion (69.3%) and demonstration (61.3%). The two teacher-centred methods that were rarely used were tutorial (92.2%) followed by mentoring (84.7%).

On the other hand, the *learner-centred methods* which students teachers of Tonota College of Education judged to be very often or often used by their lecturers were: group discussion (86.1%), brainstorming (73.0%), listening and observing (61.3%), and buzz groups (65.4%). As data in Table 6.6b indicates, over 50% of the students felt that the other learner centred methods were rarely or never employed by their lecturers. The same sentiments were expressed about the frequency of use of individual centred teaching methods.

Regarding The individual student-centred methods, all the student teachers interviewed felt that: assignment was the main teaching method very often or often used by their lecturers. However, other teaching methods such as experiential learning (80.8%), computer–assisted learning (80.7), personalised system of instruction (73.1%) and the personal tutorial (94.3%) were rarely or never used.

The data shows clearly that students interviewed in both colleges felt that individual student-centred teaching methods were not popular among their lecturers.

6.3.3 Discussion of qualitative findings

In general, the results of the qualitative investigation suggest that the student teachers had diverse experiences during their learning and teaching encounters with educators. The student teachers indicated that the educators emphasised teaching methods that have a pedagogic orientation. This finding is consistent with findings from the quantitative phase of the study which found the prevalence of a pedagogic orientation in teacher educators' teaching.

This pedagogic orientation manifests in the fact that aspects of involving learners in the planning of their learning and using learners' experiences as starting point in teaching is not regularly experienced by student teachers. It is also reflected through not allowing of learners to evaluate themselves and their educators, and not respecting learners' opinion during the teaching and learning process. These aspects, which are linked to andragogic perspective of teaching – are not frequently experienced by student teachers during the teaching process. The views shared in the interviews suggest that an andragogic approach is not embraced by most teacher educators (Shown in Table 6.6a and 6.6b).

6.4 Summary

Findings that have emerged from both the quantitative and qualitative investigation have indicated that the majority of teacher that responded to the EOQ had a pedagogic rather than an andragogic orientation to teaching and learning. This assertion is further supported by the qualitative results from interviews with student teachers who affirmed that the majority of their educators had pedagogical rather

than andragogical tendencies in their educational practices. Further evidence of this is shown by the responses of student teachers when asked about the frequency of use of teacher-centred, learner-centred or individual student-centred teaching methods by their lecturers. It has emerged that the most frequently used methods were those that are teacher-centred and therefore pedagogically oriented. Based on these findings, conclusions and recommendations arising from this study are presented in the next chapter.

Chapter 7

Conclusions and recommendations

7.1 Introduction

The quantitative and qualitative analysis of data collected during the research and the subsequent discussion points to the following conclusions and recommendations.

7.2 Conclusions drawn from the research

This research set out to investigate the possible reasons why the current approaches to educational practices by teacher educators in Botswana are not congruent with the national educational strategy of imparting learner centred teaching methods. It was postulated that the reason for this was related to the educational orientations of the teacher educators. This research, confirmed that indeed that this is a significant reason since the majority of teacher educators have been shown to have a pedagogical rather than an andragogical orientation in terms of beliefs and practice. This assertion is supported in the literature as indicated by Pehkonen and Torner (1996) who argued that teachers' teaching behaviour is directed by what they believe to be true. The findings are also consistent with the researcher's initial postulation that teacher educators in colleges of education Botswana have a pedagogical rather than an andragogical educational orientation.

With regard to how these orientations are manifested in terms of teaching experience at a college of education, the study found that there is no significant difference among teacher educators with less than 5 years of teaching experience at a college of education or those with more than 10 years of teaching experience at a college of education. These two groups exhibited a highly positive pedagogic orientation when compared with those with between 5 and 10 years teaching experience.

It was also established that experience may have a positive or negative effect on educational orientations. Positive in that those in their mid-careers are likely to experiments in their educational practice than those with little or a lot of experience. This experimental phase however, does not seem to last, before they revert to their original orientations. This conclusion is consistent with that made by Wilson's (2005) who researched the application of andragogy in a post-secondary school setting in the United States of America. She found out that length of teaching experience had a negative correlation to acceptance of change. The more experienced the educator is, the greater likelihood of resisting "*changing the way they have always done things*". It can therefore be concluded that the longer a teacher educator is at a college, the less likely he or she is to change her or his teaching style. It was also confirmed that that experience further entrenches deeply held beliefs since these beliefs are often based on what the experienced educator *"perceives"* to work best.

When looked at more closely, teaching experience plays a much more important role in influencing education orientation of educators than either subject specialisation or

type of college that the educator teaches in. This has special significance to this research since the training background and experiences of most educators in colleges offering a Diploma in Primary Education were initially trained to teach and actually taught at primary school level while most of those in colleges offering a Diploma in Secondary Education were initially trained to teach and actually taught at senior secondary school level.

When looking at students' perception of educational orientation of their educators and the frequently used teaching methods, the findings from the interviews further confirm the researcher's initial postulation that educational orientation does influence the practices of teacher educators. This argument however should not be looked at in isolation. The methods that teacher educators adopt are further influenced by the structure of programmes, curriculum content, and methods of assessment, nature of certification, organisational culture as well as the resources available to the educators. The influence of these factors however, could be reduced if there is a general consensus among educators and decision makers that teacher education should embrace an andragogical rather than a pedagogical approach to teaching and learning.

It can finally be concluded that the current approaches to educational practices of teacher educators in Botswana are not congruent with the national educational strategy of using learner centred teaching methods at all levels of education. This is due to a large extent to the lack of alignment of teacher educator orientations to national education imperatives. The teacher educators themselves do not practice

what they preach. The dilemma is further compounded by the argument among teacher educators that their role is to prepare teachers who will be teaching children in future. This argument neglects the fact that teacher educators should also ensure that the student teachers' needs as adult learners are met. The fact that the majority of teacher educators have a pedagogic rather than an andragogical orientation compounds the dilemma even further. In light of the conclusions drawn from the research, the following recommendations are advanced.

7.3 Recommendations arising from the research

This study has clearly shown that teacher educators in Botswana have a pedagogic rather than an andragogical orientation to their teaching practice. As earlier pointed out, this orientation is more suitable for the teaching of children and youth rather than young adults who are the students at colleges of education. It is therefore recommended that:

- All teacher educators at colleges of education should be exposed to andragogic principles and approaches to teaching through in-service workshops and short courses.
- All academic staff joining colleges of education should be inducted into the use of andragogical approaches to teaching and learning. Since the majority of those who are recruited as teacher educators have never been exposed to these approaches, it is suggested that this induction should be done in their first year of joining the colleges. In this way, the newly recruited teacher

educators will not need to only rely on their Secondary school or Primary school teaching experiences where pedagogic approaches predominate.

- Both the Diploma in Primary Education and the Diploma in Secondary Education programmes should be revised to include aspects of andragogy as a way of exposing student teachers to this approach to teaching and learning. The incorporation of competency based assessment including assessment using portfolios would ensure to some extent the use of andragogically orientated approaches in instruction .
- To ensure that teacher educators use learner-centred and individual learner-centred methods, the Quality Assurance Instrument (QAI) for colleges of education should include a standard that monitors the use of these methods in teaching and learning.
- The Teaching and Learning Policy for Affiliated Colleges of the University of Botswana should be implemented forthwith, since at the heart of the policy is the principle of “Learner-centeredness”. The policy therefore is consistent with the principles of andragogy.

7.4 Limitations encountered during the research

The main limitation that was encountered was the size of samples used for the qualitative phase of the study. The researcher had intended to initially have an interview sample of 50 student teachers. For a variety of reasons beyond the control of the researcher, the actual number of student teachers interviewed was 35. This represented about 11.6% of the graduating students in the two colleges selected for the quantitative phase of the research. It is however felt that this did not adversely

affect the validity of the results and the reliability of the data collected since the qualitative phase was confirmed by the findings obtained in the quantitative phase.

Secondly, the study could have included observation of teacher educators actually in teaching-learning situations in order to ascertain the methods they employ. Observation could have further validated the findings from the questionnaire and interviews.

Lastly, while the EOQ questionnaire was administered to samples of teacher educators in all the six colleges of education in Botswana, only student teachers from two of the colleges of education were interviewed. The findings therefore may not necessarily be generalised to all colleges of education in Botswana. As a result of this, generalisation of the findings to other teacher educators within and outside Botswana requires further research.

7.5 Further Research

Further research on pedagogical and andragogical orientations should include observation of teacher educators carrying out teaching and learning activities. Data collected during these observations would further validate that collected by questionnaire and interviews. Further research could also include teacher educators from the University of Botswana, Botswana College of Agriculture as well as the Vocational and Technical Education Teacher Training College which are also teacher education institutions in Botswana. This would allow for a countywide generalisation of the results.

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ANNEXURE 1

Educational Orientation Questionnaire (from Quam, K.F. 1998). With permission from Nova Science Publisher

Name:_____
Address:_____

Below are statements about education, teaching and learning. These have been chosen to express different viewpoints.

Please note: In completing this questionnaire keep in mind that the word "student" means adult student, and the word "teacher" means yourself - the person filling out the questionnaire. In other words, your answers indicate your educational orientation in working with adults.

For each statement please put an "X" in one of the five boxes in front of the statement. Choose the box that indicates your attitude or position best – how much you agree or disagree with that statement. The five positions from which to choose are:

SA- I strongly agree with this statement.
A – I agree with this statement
U – I'm not certain about this statement to agree or disagree.
D – I disagree with this statement.
SD – I strongly disagree with this statement.

	SA	A	U	D	SD
1. Education should focus on what is sure, reliable, and lasting.					
2. Teaching effectiveness should be measured by students' increase in examination of their own feelings, attitudes, and behavior.					
3. Students need a strong teacher who can direct their learning.					
4. It is hard to keep people from learning					
5. Learning is an intellectual process of understanding ideas, (concepts) and acquiring skills.					
6. Effective learning occurs most often when students actively participate in deciding what is to be learned and how.					
7. Giving examinations regularly motivates students to learn.					

8. Organization of the content and sequence of learning activities should grow out of students' needs, and with their participation.					
9. It should be the teacher's responsibility to evaluate student achievement and assign grades.					
10. The best sources of ideas for improving teaching and education are students.					
11. Competition among students encourages keen learning.					
12. A teacher by his/her behaviour should show each student that his/her abilities and experiences are respected and valued.					
13. A teacher should help students understand the values of our society.					
14. To see education as a transmittal of knowledge is obsolete.					
15. Students tend to be much alike.					
16. It is the teacher's responsibility to motivate students to learn what they ought to learn.					
17. Clear explanation by the teacher is essential for effective learning.					
18. A teacher's primary responsibility is helping students choose and develop their own direction for learning.					
19. A good teacher makes the decision on what is to be taught, when, and how.					
20. A teacher seldom needs to know the average students as separate individuals.					
21. A teacher should not change his expressed decision without unusually good reasons.					
22. Emphasizing efficiency in teaching often blocks development of an effective learning climate.					
23. An adult education program should be evaluated by the same standards as other accredited programs of education.					
24. Evaluating his achievement should be primarily a responsibility of the student since he has the necessary data.					
25. Competition among students develops conceit, selfishness, and envy.					
26. A teacher should discuss his or her blunders and learnings with students.					
27. A teacher should be sure that his questions steer students towards truth.					
28. Educational objectives should define changes in behaviour, which the student desires, and the teacher					

helps him/her undertake.					
29. Most students are able to keep their emotions under good control.					
30. Students are quite competent to choose and carry out their own projects for learning.					
31. A teacher should help student free themselves of fixed habits and patterns of thought that block their growth.					
32. The major qualifications of a teacher are a grasp of subject matter and ability to explain (demonstrate) it clearly and interestingly.					
33. It is better for students to create their own learning activities and materials than for the teacher to provide them.					
34. A teacher should require assignments and grade them.					
35. Use of a topical outline often blocks a teacher's perception of students' needs.					
36. An adult education program should be evaluated only in terms of its own objectives.					
37. Competition among students develops courage, determination and industry.					
38. A teacher should provide opportunities for warm relationships with students and among students.					
39. Education should lead people to goals that result in orderly, reasonable lives.					
40. Education should increase students' critical evaluation of our society and courage to try new, creative satisfying behaviour.					
41. Often students do not know what is best for them.					
42. When a teacher makes a mistake, he is likely to lose students' respect.					
43. Maturity depends more on continuing growth in self-understanding than on growth in knowledge.					
44. Students often "get off the subject" either intentionally or unintentionally.					
45. Educational programs, which tell what should be learned and how, rarely help students learn.					
46. Letting students determine learning objectives wastes too much time in irrelevant discussion.					
47. The primary concern of a teacher should be the immediate concerns of the student.					
48. Grades should reflect the student's grasp of the subject or skill taught.					

49. Assignments by a teacher tend to restrict students' significant learning.					
50. Tests prepared by students are usually just as effective as those prepared by the lecturer.					
51. The goals a student sets for himself are the basis of effective learning and not the teacher's goals.					
52. A teacher's mission is to help each student learn what he decides and to aid the student in achieving his personal goals.					
53. If the teacher is not careful, student can take advantage.					
54. Considering the possible effects on students, a teacher should usually play it safe rather than take chances.					
55. Without a cooperative climate encouraging students to risk and experiment, significant learning is unlikely.					
56. A teacher who does not plan the work for a class carefully is taking advantage of the students' ignorance.					
57. To use students' experiences and resources for learning requires group activities rather than such methods as lectures.					
58. It is a good rule in teaching to keep relationships with students impersonal.					
59. Planning units of work should be done by students and teacher together.					
60. Good teaching is systematic- set up a clear plan and schedule that he/she must stick to.					

Annexure 2

A questionnaire on Educational Orientation of Colleges of Education lecturers

Introduction

I am a student of UNISA doing research on the use of adult education principles by teacher educators in Botswana. The information you give will only be used for purposes of educational discourse and your identity or that of others will in no way be revealed. You will require approximately 15 to 20 minutes to complete this questionnaire. Thank you very much for your time.

SECTION A General information about the respondent

Instructions

Please place a cross (X) in the box next to the appropriate response.

College TCE ☐ MCE ☐ FCE ☐ SCE ☐ LCE ☐ TkCE ☐

Gender Male ☐ Female ☐

Subject group
Humanities ☐
Science ☐
Practical ☐
Core ☐

Number of years teaching at a college of education
Less than 5 years ☐
6 to 9 years ☐
10 or more years ☐

PLEASE TURN OVER THE PAGE FOR SECTION B

SECTION B
Educational Orientation Questionnaire

Instructions:
Place a cross (X) in the appropriate box after each statement if you STRONGLY AGREE (SA), AGREE (A), are UNDECIDED (U), DISAGREE (D) or STRONGLY DISAGREE (SD) with respect to the given statement.

	SA	A	U	D	SD
1. Education should focus on what is sure, reliable, and lasting.					
2. Teaching effectiveness should be measured by students' increase in examination of their own feelings, attitudes, and behaviour.					
3. Students need a strong teacher who can direct their learning.					
4. It is hard to keep people from learning					
5. Learning is an intellectual process of understanding ideas, (concepts) and acquiring skills.					
6. Effective learning occurs most often when students actively participate in deciding what is to be learned and how to learn it.					
7. Giving examinations regularly motivates students to learn.					
8. Organization of the content and sequence of learning activities should grow out of students' needs, and with their participation.					
9. It should be the lecturer's responsibility to evaluate student achievement and assign grades.					
10. The best sources of ideas for improving teaching and education are students.					
11. Competition among students encourages keen learning.					
12. A lecturer by his/her behaviour should show each student that his/her abilities and experiences are respected and valued.					
13. A lecturer should help students understand the values of our society.					
14. To see education as a transmittal of knowledge is obsolete.					
15. Students tend to be much alike.					
16. It is the lecturer's responsibility to motivate students to learn what they ought to learn.					

17. Clear explanation by the lecturer is essential for effective learning.					
18. A lecturer's primary responsibility is helping students choose and develop their own direction for learning.					
19. A good lecturer makes the decision on what is to be taught, when, and how.					
20. A lecturer seldom needs to know the average students as separate individuals.					
21. A lecturer should not change his/her expressed decision without unusually good reasons.					
22. Emphasizing efficiency in teaching often blocks development of an effective learning climate.					
23. A teacher education program should be evaluated by the same standards as those of other educational programs.					
24. Evaluating achievement should be primarily a responsibility of the student since he/she has the necessary data.					
25. Competition among students develops conceit, selfishness, and envy.					
26. A lecturer should discuss his or her blunders and learnings with students.					
27. A lecturer should be sure that his or her questions steer students towards the truth.					
28. Educational objectives should define changes in behaviour, which the student desires, and the teacher helps him/her undertake.					
29. Most students are able to keep their emotions under good control.					
30. Students are quite competent to choose and carry out their own projects for learning.					
31. A lecturer should help student free themselves of fixed habits and patterns of thought that block their growth.					
32. The major qualifications of a lecturer are a grasp of subject matter and ability to explain (demonstrate) it clearly and interestingly.					
33. It is better for students to create their own learning activities and materials than for the lecturer to provide them.					
34. A lecturer should require assignments and grade					

them.					
35. Use of a course (topical) outline often blocks a lecturer's perception of students' needs.					
36. A teacher education program should be evaluated only in terms of its own objectives.					
37. Competition among students develops courage, determination and industry.					
38. A lecturer should provide opportunities for warm relationships with students and among students.					
39. Education should lead people to goals that result in orderly, reasonable lives.					
40. Education should increase students' critical evaluation of our society and courage them to try new, creative satisfying behaviour.					
41. Often students do not know what is best for them.					
42. When a lecturer makes a mistake, he /she is likely to lose students' respect.					
43. Maturity depends more on continuing growth in self-understanding than on growth in knowledge.					
44. Students often "get off the subject" either intentionally or unintentionally.					
45. Educational programs, which tell what should be learned and how, rarely help students learn.					
46. Letting students determine learning objectives wastes too much time in irrelevant discussion.					
47. The primary concern of a lecturer should be the immediate concerns of the student.					
48. Grades should reflect the student's grasp of the subject matter.					
49. Assignments by a lecturer tend to restrict students' significant learning.					
50. Tests prepared by students are just as effective as those prepared by the lecturer.					
51. The goals a student sets for himself/herself are the basis of effective learning (not the lecturer's goals).					
52. A lecturer's mission is to help each student learn what he /she decides and to aid the student in achieving his/her personal goals.					
53. If the teacher is not careful, student can take advantage of him or her.					

54. Considering the possible effects on students, a lecturer should usually play it safe rather than take chances.					
55. Without a cooperative climate encouraging students to risk and experiment, significant learning is unlikely.					
56. A lecturer who does not plan the work for a class carefully is taking advantage of the students' ignorance.					
57. To use students' experiences and resources for learning requires group activities rather than such methods as lectures.					
58. It is a good rule in teaching to keep relationships with students impersonal.					
59. Planning units of work should be done by students and lecturers together.					
60. Good teaching is systematic. The lecturer should set up a clear plan and schedule that he/she must stick to.					

Thank you for your assistance.

ANNEXURE 3

PERMISSION LETTER FROM NOVA SCIENCE PUBLISHERS

Dear Mr. Kasozi,

Good morning. Thank you for your email message. Permission granted.

Sincerely yours,
Frank Columbus

Nova Science Publishers, Inc.
400 Oser Avenue, Suite 1600
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Tel: 631- 231-7269, Fax: 631-231-8175
email: novaeditorial@earthlink.net, novascience@earthlink.net
Web: www.novapublishers.com

At 12/8/2003 Monday, you wrote:

I am an adult student of the University of South Africa (UNISA) current undertaking MEd. studies in Didactics. I would like to request permission to use and modify Hardey's (1975) Educational Orientation Questionnaire as reproduced by Quam, KF (1998) in his book Fundamentals of Teaching and Learning published by Nova Science Publishers.

My supervisor is Prof. MP van Rooy in the Department of Educational studies at UNISA. My area of interest is the relationship between pre-service teacher education and andragogy.

Grateful for a prompt response.

Joseph Amooti Kasozi
P.O Box 30156
FRANCISTOWN BOTSWANA
TELEFAX:+2672410297
email: jakasozi@botsnet.bw

ANNEXURE 4

INTERVIEW SCHEDULE FOR STUDENT TEACHERS

Introduction
The researcher will introduce himself to each interviewee as follows:

I am a student of UNISA doing research on the use of adult teaching principles by teacher educators in Botswana. The information you give will only be used for purposes of educational discourse and your identity or that of others will in no way be revealed. This interview will take approximately 15 minutes. I will be using a tape recorder as well as writing down a few notes as we proceed with the interview.

SECTION A General information

This information is to be filled in by the researcher at the beginning of the interview.

1. College……

2. Gender : Male ☐ Female ☐

3. Year Group ☐ **Subject group** Humanities ☐ Science ☐ Practical ☐

SECTION B Use of Adult Education Principles by teacher educators

Please rate your lecturers on how often they:

4.1 Use your own experiences as a starting point? Very often/Often/Rarely/Never
Please give examples:
……
……
……

4.2 Respect your opinion? Very often/Often/Rarely/Never
Please give examples
……
……
……

4.3 Involve you in planning your own learning? Very often/Often/Rarely/Never
Please give examples
……
……
……

4.4 Allow you to evaluate your work? Very often/Often/Rarely/Never
Please give examples.
……
……
……

4.5 Involve you and peers in your own assessment? Very often/Often/Rarely/Never
Please give examples.
……
……
……

4.6 Tell you why you are learning a certain topic, skill or concept? Very often/Often/Rarely/Never
Please give examples.
……
……
……

4.7 Give you chance to evaluate their teaching? Very often/Often/Rarely/Never
Please give examples
……
……

4.8 Allow you to observe them teaching pupils? Very often/Often/Rarely/Never
Please give examples
……
……
……

SECTION C Teaching methods used in teacher education

Instructions: Using Annexure 5 which explains the main characteristics of teaching methods used in adult education, please indicate how often your lecturers use particular teaching method.

How often do your lecturers use the following teaching methods?

5.1 Teacher centred:

5.1.1 Demonstration : Very often/Often/Rarely/Never

5.1.2 Guided discussion: Very often/Often/Rarely/Never

5.1.3 Controlled discussion: Very often/Often/Rarely/Never

5.1.4 Lecture discussion: Very often/Often/Rarely/Never

5.1.5 Lecture: Very often/Often/Rarely/Never

5.1.6 Mentoring: Very often/Often/Rarely/Never

5.1.7 The tutorial: Very often/Often/Rarely/Never

5.2 Learner-centred:

5.2.1 Brain storming Very often/Often/Rarely/Never

5.2.2 Buzz Groups: Very often/Often/Rarely/Never

5.2.3 Debate: Very often/Often/Rarely/Never

5.2.4 Fish bowl: Very often/Often/Rarely/Never

5.2.5 Group discussion: Very often/Often/Rarely/Never

5.2.6 Interview: Very often/Often/Rarely/Never

5.2.7 Listening and observing Very often/Often/Rarely/Never

5.2.8 Panel: Very often/Often/Rarely/Never

5.2.9 Project and Case Studies: Very often/Often/Rarely/Never

5.2.10 Role play, simulation and gaming: Very often/Often/Rarely/Never

5.2.11 Seminar: Very often/Often/Rarely/Never

5.2.12 Snow balling: Very often/Often/Rarely/Never

5.2.13 Therapy (T) groups. Very often/Often/Rarely/Never

5.2.14 Visits, tours, field trips: Very often/Often/Rarely/Never

5.2.15 Workshops: Very often/Often/Rarely/Never

5.3 Individual student – centred

5.3.1 Assignments: Very often/Often/Rarely/Never

5.3.2 Computer assisted learning: Very often/Often/Rarely/Never

5.3.3 Contract learning: Very often/Often/Rarely/Never

5.3.4 Experiential learning: Very often/Often/Rarely/Never

5.3.5 Personalised system of instruction – (PSI): Very often/Often/Rarely/Never

5.3.6 Personal tutorial: Very often/Often/Rarely/Never

5.3.7 Self directed learning: Very often/Often/Rarely/Never

Thank you.

Annexure 5

Teaching Methods Used in Adult Education
(Adapted from Jarvis, 1995: 114-139)

A Teacher centred methods

Method	Main characteristics
The demonstration	The teacher shows how a specific procedure is undertaken and then they are expected to emulate the teacher.
Guided discussion	The teacher has a carefully prepared sequence of questions that are directed towards the end of drawing from the learners the knowledge that they have implicitly but which they may not have articulated, crystallised or related to a wider perspective.
Controlled discussion	The teacher sets the theme for the class and begins to talk about it but the students are encouraged to contribute to the learning process or to elicit information. The teacher however, remains at the centre of the scene to which most questions are directed.
Lecture discussion	This could be a short lecture/address followed by discussion. The teacher however controls the learning process and its content.
Lecture	A carefully prepared oral presentation of a subject by a (qualified) person. The teacher controls the timing, content and pacing of the lecture.
Mentoring	A one to one situation where the experienced person (mentor) seeks to assist the learners (protégé) to reflect upon their practice and improve it.
The tutorial	This may involve a teacher (tutor) meeting one or up to six or seven students to discuss a peace of work, assignment or topic.

B Learner centred methods

Method	Main characteristics
Brainstorming	This is an intensive discussion situation where views (on possible solution to a problem) raised by individual participants of a group are recorded over a period of time. There is no criticism of the idea or comments made until closure at the agreed time. After this, participants are free to critique the contributions and arrive at a consensus.
Buzz groups	Small groups of two to six members are used, for a short period of time during a lesson in order to discuss a particular item or

	topic.
Debate	This when a group of students with sharply contrasting viewpoints engage in a structured argument to demonstrate how their different opinions can be analysed and assessed.
Fish bowl	The aim of this method is to get as many people in a group to participate and discuss their views on a given subject. Participants are seated in two concentric compact circles. The inner circle is much smaller and seats those involved in the discussion. Those in outer circle remain silent. Any member in the outer circle who wishes to participate in the discussion can do so by replacing a member in the inner circle whoever is not talking by tapping him/her on the shoulder.
Group discussion	This could be in the form of “free discussion” which is a learning situation. The topic and direction are controlled by the student group.
Interview	This is sometimes referred to as the witness session where a resource person is the subject of the interview. The topic and sometimes the questions are prepared in advance. The aim is for the interviewer to elicit information from the resource person by means of the questions that the learners want answered. The students often prepare the questions and submit them to the interviewer in advance, so that the session is to their interests and learning needs.
Listening and observing	In this method, an individual or a group view and listen to an aspect of a lecture, film, play or speech and then report their findings to the whole group in a plenary session. Different individuals or groups can observe or listen for different aspects of the lecture, film play or speech.
Panel	In this method, resource persons or selected members of a class are required to give short addresses to the whole group and at the end of 3 to 4 talks there is a period of questions and answers. Alternatively, panel members can discuss aloud a specific topic for a specified length of time while the class listens to their deliberations. The class is then asked to raise questions. In other instances, a panel may be made up to just answer questions.
Projects and case studies	This when an individual or group undertake to study in detail a specific problem, phenomenon or concept and later make a written report on it. They often involve learning by doing and then use the results in a practical manner.
Role-play. simulations and gaming	In role-play the students act out roles that they are aware of cognitively. These roles could be the students’ future careers or from somebody else’s life. Simulation is similar to role-play only that students are involved in a more complex problem which may even relate to their occupational role e.g. student teachers may act out the role of chairing a departmental meeting. In both role-play and simulation a follow up debriefing is necessary to reflect and crystallise ideas role-played or simulated. Gaming involves

	the learning of a concept through playing a game (e.g. Playing "monopoly" to demonstrate the working of the capitalist system or playing "The Cattle Trek Game" to demonstrate marketing of beef cattle in Botswana.
Seminar	In this method, one or more specialists or selected students present an introductory statement of paper to a group that forms the basis for a group discussion. The statement or paper can be controversial, provocative topical or relevant to ensure or provoke a discussion. The presenters are active learners while the listeners are passive learners.
Snowballing	In this method, individual learners are initially asked to reflect upon a task or proposition and to reach some conclusion about it. Then they are asked to form pairs and reflect upon their original conclusions and reach a joint conclusion. Then the pairs form groups of 4 and repeat the process. The conclusions of the four are then summarized and presented to the whole group. This method ensures that everybody's are brought on board.
Therapy (T) groups	This is a method of teaching self-awareness and interpersonal relations based upon therapeutic techniques in which individual group members discuss their relationships with each other. It is useful when the object is to learn to tolerate others and to build team spirit.
Visits, tours and field trips	These methods are meant to provide personal experience for the individual or group of learner by visiting places relevant to the topic, phenomenon or concept that is being learned. They involve a briefing before the visit, taking down notes and asking questions during the visit and finally an evaluation and reflection after the trip. Individual or group reports summarising the learning experiences can be made.
Workshops	A group of students are encouraged to apply theory to practice in some area of their interest or occupation. The process and product of the work of the individual or group is then subjected to the scrutiny of the class for discussion and appraisal.

C Individual student centred method

Method	**Main characteristics**
Assignments	This involves assigning students a specific topic, a set of questions, a research topic or case study in order for the student to work on their own and later submit a record or product of the work they have done.
Computer assisted learning	This involves individual learning using a programmed computer package developed for the purpose. It may or may not be necessary to have contact with the tutor.

Contract learning	The learner enters a contract with his/her teacher. This contract is jointly developed by the teacher and learner; incorporating what is to be learned, why it is to be learned, how it to be learned, for how long and how it is to be assessed.
Experiential learning	This when teachers provide opportunities for “hands-on experience” to learning a skill or concept.
Personalized systems of instruction (PSI)	This involves of units of work which students study at their own pace and in their own time without a teacher. Each unit must be passed successfully before they proceed to the next one. Lectures and other learning activities are provided but attendance is not compulsory since they are regarded as an additional and occasional stimulus.
Personal tutorial	This is similar to the tutorial but in this case it is the student who prepares a set of questions arising from his/her study. It is the student who initiates the tutorial. The tutor answers the questions but the student guides the tutorial session.
Self-directed learning	In this method the learner determines what he/she wants to learn, how to learn it, and how to evaluate the learning. It is the learner who determines what help he/she needs from tutors and peers.

ANNEXURE 6
PERMISSION LETTER FROM MINISTRY OF EDUCATION

TELEPHONE: 3655400
TELEX: 2944 THUTO BD
FAX: 351624/3655408
REFERENCE: E 11/17/XXXVI(17)

REPUBLIC OF BOTSWANA

MINISTRY OF EDUCATION
PRIVATE BAG 005
GABORONE
BOTSWANA

13 March 2006

To: Joseph Amooti Kasozi
Tonota College of Education
Private Bag T3
Tonota

RE: PERMISSION TO CONDUCT RESEARCH

We acknowledge receipt of your application to conduct research that will

- *Establish the extent to which adult teaching and learning principles guide teacher educators in the methods and practices.*

You are granted permission to conduct research in the Colleges of Education entitled:

ADRAGOGY VS PEDAGOGY: THE TEACHER EDUCATOR'S DILEMMA. THE USE OF ADULT TEACHING PRINCIPLES BY COLLEGEES OF EDUCATION LECTURERS IN BOTSWANA.

You are how ever informed that the findings of your research should only be used to form part of the dissertation to fulfil the award of Master's degree at the University of South Africa. **This permit is valid until 31st July 2006**

You are reminded to submit a copy of your final report to the Ministry of Education, Botswana

Thank you,

M.L. Phiri
For Permanent Secretary

ANNEXURE 7

REQUEST TO COLLEGE PRINCIPAL TO ADMINISTER A QUESTIONNAIRE TO COLLEGE LECTURERS

Tonota College of Education
Private Bag T 3
Tonota

29 March 2006

The Principal
Tlokweng College of Education

Dear Sir

REQUEST TO ADMINISTER A QUESTIONNAIRE TO COLLEGE LECTURERS

I wish to request your office to assist me in administering a questionnaire on the use of adult teaching principles by colleges of education lecturers in Botswana. This is part of the research I am conducting for the award of a Masters degree of the University of South Africa.

Attached is the permission letter from the Permanent |Secretary authorizing me to conduct the research.

Grateful for your kind assistance.

Joseph A Kasozi