CHAPTER FOUR
METHODOLOGY AND CONTENT VALIDATION OF RESEARCH INSTRUMENTS

4.1 INTRODUCTION

This chapter focuses on presenting the methodology of the study and content validation of the research instruments. It therefore specifically covers:

- The plans carried out in preparation for the field work
- The different instruments used in the study and the reasons for using each of them
- Content validation of the research instruments
- Data collection and data analysis procedures.

4.2 RESEARCH STRATEGY AND DESIGN

There are various kinds of research and the choice of what type of research to carry out will depend on the purpose of research, the research question(s) being explored and the kind of data required (Johnson 2002:5, Scott and Usher 2000:3). This particular study was both descriptive and evaluative and hence involved the gathering of largely qualitative data. According to Ritchie (2003:28), descriptive research concerns itself with '*…identifying **what** exists in the social world…'* In so doing, such studies focus on:

- describing phenomena,
- identifying the different issues, and
- establishing how issues are understood.

These were the concerns of this study, to establish what is going on in the provision of INSET through distance education in Uganda. In addition, the study also concerned itself with describing the Makerere University B.Ed (External) programme. All this was established by reviewing various literature, interviewing policy makers and by use of questionnaires given to former, current and prospective students, tutors and managers of the B.Ed (External).

At the same time, the study attempted, by identifying the strengths and weaknesses of the programmes and by suggesting ways of addressing the weaknesses, to carry out a summative evaluation of especially the B.Ed (External) with a view to improving the programme. According to Ritchie (2003:39), evaluative research concerns itself with establishing how well a system, institution or programme works. This is the same

sentiment expressed by Patton (2002:224) who says that such studies focus on the '*…strengths and weaknesses of the specific program…'*

The study then utilised interviews, questionnaires and documentary analysis so as to understand INSET programmes provided in Uganda using distance education and to evaluate particularly the B.Ed (External) of Makerere University.

4.3 SCOPE

Distance Education is being used for various purposes; however, this study focused on Distance Education for In-Service Education of Secondary School teachers in Uganda. To gather the relevant data, the study sampled various stakeholders from the different regions in the country; section 4.6 details out the sample and the rationale for including each category.

However, since it was not possible to cover the entire country, eight districts were sampled from four regions in the country – Western, Central, Northern and Eastern Regions. The Southern Region was not visited because of the challenges of access and cost. Districts with National Teachers' Colleges were particularly targeted so as to reach students and tutors in these colleges. In addition, since majority of the students on the Bachelor of Education (External) come from Kampala, Entebbe, Wakiso and Mpigi, these districts were also included in the sample. Ultimately, the study therefore involved respondents from: Mbarara, Masindi, Tororo, Soroti, Kampala, Entebbe, Wakiso and Mpigi Districts.

4.4 PLANNING FOR RESEARCH

4.4.1 Review of instruments by experts

The research instruments used in this study were all self-developed after reflecting on the research problem and the literature reviewed. The literature reviewed was particularly useful in clarifying issues that the instruments needed to explore. Self-developed instruments are open to bias and could include questions that may be either unclear or open to different interpretation. So, to minimise this effect, all the instruments were reviewed by experts which, as Johnson (2002:180) and Yegidis and Weinbach (2002:209) say, is critical in ensuring the validity of research instruments. The questionnaires and interview schedule that were designed for this study were reviewed by both supervisors and were also discussed with the research support team from the Department of Statistics, University of Pretoria. In this review the focus was on:

- Content of the instruments and the relevance of the items included to the research problem and the research questions asked
- The language used in the instruments; particularly readability of the instruments and the appropriateness of the language
- The structure and layout of the instruments

Their views and comments were incorporated in both the draft instruments that were pilot tested and the final instruments used in the study.

4.4.2 Pilot testing of instruments

a) Selection of Participants in the Pilot Study and administration of the instruments

To ascertain the reliability of the instruments that were used, a pilot test was carried out. The different instruments were given to a sample of respondents who had been non-randomly selected. Although the B.Ed (External) draws its tutors, writers and reviewers from other higher institutions of learning as well, all the tutors and managers of the B.Ed (External) who participated in the pilot study were drawn from Makerere University alone. The researcher decided to focus on only those from Makerere University for ease of access. It would have been both costly and time consuming to attempt to sample participants in the pilot study from a wider area. Nevertheless, those reached were the tutors and managers the researcher considered most likely to give critical input on the instruments.

As far as the policy makers were concerned, only officials in the Ministry of Education and Sports headquarters were reached. This ensured that participants with good knowledge and interest in the subject of the study were reached but at minimum cost and time. Six officials from the Departments of Teacher Education, Higher Education and Secondary Education were approached to give their views on the draft questionnaire.

B.Ed (External) students are scattered across the entire country and are therefore difficult to reach since it was not possible to visit areas far from Makerere University. Based on this reality, students that visited the Department for various other reasons were invited to participate in the pilot test. Eight students accepted to participate in this exercise.

All the instruments were hand delivered and the participants given one week in which to respond to the instrument. All the students were then asked to return the instruments to the Department of Distance Education while the tutors, managers, and policy makers were followed up for the return of the instruments. Altogether 15 questionnaires were given to tutors and managers of the programme and 9 (60%) returned; 8 given to students on the External Degree programme and 4 (50%) returned while 6 were given to officials of Ministry of Education and Sports and 3 (50%) of the questionnaires were returned. Johnson (2002:95) says that a return of 60% is a desirable one for questionnaires. The rate of return of 50% for the students and the Ministry of Education and Sports officials is therefore not very good.

It should however be pointed out that at the pilot stage, policy makers were also given a questionnaire but this was later transformed into a structured interview schedule because questionnaire returns was relatively poor (only 3 were returned), besides, some officials expressed a willingness to be interviewed rather than fill out a questionnaire. In addition to all this, the answers received were brief so the questionnaire was transformed into a structured interview schedule so as to explore the different issues much more.

Apart from the poor return rate, the comments and results received from all the pilot study participants were helpful in the improvement of the final instruments.

b) Lessons Learnt

A number of lessons were learnt from this pilot testing and key among these were:

- Many of the respondents complained that the questionnaires were too long.
- Some of the items in the questionnaires were not relevant. For example, nearly all the students who participated in this pilot test could not respond to questions on 'Payment of tutors, writers, reviewers etc' because according to them, this information was not available to them.
- Another set of questions that were felt irrelevant by all the respondents were questions relating to some ICTs such as teleconferencing and video conferencing On the one hand, these were not understood by some of the respondents and on the other hand, it was felt that these were currently inapplicable to Uganda because of costs and lack of infrastructure to support it.
- Some of the terms/concepts used in the questionnaires were not understood by some of the respondents. For example the concept student support. As one tutor queried, *'what exactly do you mean by student support'.*

- The structure and format of the instruments needed to change so as to ensure logical flow and to provide for coding of responses.
- The questions in all the instruments were general to INSET distance education programmes with no focus on the B.Ed (External), which was one of the major intentions of the research. Other important issues like access to ICTs had not been explored in the instruments.

c) Adjustments made to the instruments

Following the pilot test results, a number of adjustments were made to the instruments. For example,

- Irrelevant items were excluded from the final instruments. All questions relating payment of tutors, writers and reviewers were deleted from the students' questionnaire.
- Concepts that were found to be unclear were explained. For example, an explanation of the concept student support was provided in brackets (see appendix II items 15c, 23e and 24e; appendices III and V items 16c, 21e and 22e; appendix IV item 16c; appendix VI items 15c, 22d and 23d).
- All the instruments were restructured to ensure coherence and logical flow. The format of the instruments was also changed so as to accommodate a column for entry of the variable numbers (as seen in appendices II – VI) included this column.
- Instead of asking respondents an open-ended question on which factors impact distance education in Uganda, the respondents were asked a YES/NO question (see items 10 of appendix II; item 11 of appendix III, IV and V). Using the responses from the pilot study and from literature reviewed, a list of factors was listed.
- A section focusing on the B.Ed (External) was introduced in all the instruments (see section D in appendices II, III, IV, V and VI).
- Questions relating to access to ICTs were also included in the final instruments (see items 25, 26 appendices II and IV, and 23, 24 appendices III, V).
- The policy makers' questionnaire was transformed into a structured interview schedule.

4.4.3 Securing permission to carry out research

To carry out any research in Uganda, a researcher has to get permission and an identity card from the National Research Council. The Council also writes letters of introduction to all the Chief Administrative Officers in the districts in which the research is undertaken.

The researcher therefore secured permission from the National Research Council and obtained an identity card and letters of introduction to the districts. See appendix IX for a copy of the identity card.

In order to get permission from each interviewee to hold and record the interview, it was vital to explain the nature and purpose of the research. Each interviewee was also assured of the confidentiality with which his/her responses would be handled. The same strategy was adopted for those who responded to questionnaires although, in addition, each questionnaire had an explanatory letter attached to it. See appendices II – V and also section 4.7.4.

4.5 CONTENT VALIDATION OF THE RESEARCH INSTRUMENTS

In chapters two and three a lot of literature was reviewed to establish what has already been researched and or written with regard to distance education, teacher education especially In Service Teacher Education (INSET) and with regard to distance education teacher education programmes. This review informed the formulation of research questions and the content of the research instruments. The next sections are an attempt to relate this review with the content of the research instruments.

4.5.1 Bio data of respondents

Yegidis and Weinbach (2002:85) say that background information (bio data) on the sample could be important although they also that, there is no rule this must always be included in every instrument. However, in this study, all the questionnaires and the interview schedule had questions pertaining to the background of the respondents. The questionnaires had questions on gender, age, work place and position while the interview schedule had questions on gender, work place and position only. It was deemed unwise to embarrass these officials with the very personal question of age considering there is sometimes unwillingness to reveal age (Yegidis and Weinbach 2002:86). However, since the questionnaires had an element of anonymity it was assumed this personal question could be safely answered.

This background information on the respondents particularly for students, tutors, managers and administrators of B.Ed (External) is important because any distance programme planned should take into account the age of its students. For as Verduin and Clark (1991:5) say, '*successful study at a distance requires certain traits that are more typical of adult than pre-adult learners.'* Also INSET programmes are meant to

address specific teacher and school needs so, B.Ed (External) needs to take this factor into careful consideration while designing the curricula.

4.5.2 Viability of Distance Education

Belief in the viability of distance education for purposes of training teachers in general and for INSET in particular is important for the growth of any distance education teacher education programmes. Like in any other business, the providers must be convinced of this viability for them to be willing to invest in it. Customers must be convinced that the goods or services on offer are worthwhile and only then can they be willing to spend time and money on them. For example, today's university student wants university programmes that are convenient in terms of what is offered and how the programmes are offered (Bates 2000:10, Epper 2001:3).

All respondents in the study were therefore asked to indicate whether they believe DE is a viable option for meeting education needs in the country and to indicate which courses could be run using the same. In addition, policy officials were in particular asked to explain why in their opinion they believe DE is viable.

According to the literature reviewed in chapters two and three, the following are some of the reasons for taking distance education as viable:

- Distance education can be used to meet the growing demand for education (Perraton 2000:3, Peters 1996:42, and Saint 1992:xi,)
- Distance education can be used to address issues of equal access because of its potential to reach the disadvantaged (De Wolf 1994:1558, Holmberg 1986:30, Holmberg 1995b:13, Rumble 1992:19)
- The typical university student has changed and now includes a lot of working adults whose needs can no longer be met by traditional type university programmes. So distance education can be used to meet these changing needs (Bates 2000:10, Berge 2001a:6, Epper 2001:3, Peters 1994:28, Robinson 1996:6,)
- Distance education has and can be used to meet urgent professional needs and has greatly been used for the training of teachers (Brande 1994:54, Perraton 1993a).
- A number of authors have argued that distance education is a more cost efficient alternative than conventional education and is therefore an attractive option in the face of dwindling and/or scarce resources (Bates 2000:128, Berge 2001a:9, Orivel 1994:1567, Perraton 2000:126-127)

- Advances in technology have in the past promoted the growth of distance education and today with the enormous capacity of ICT distance education has even greater potentials (Garrison 1989:52, 1996:17).

It was therefore critical to establish, first of all, whether there is general belief in the viability of distance education in Uganda and secondly if so why.

4.5.3 Practical demands in Teacher Education

Teaching is a practical task hence teacher education must take this into account when preparing teachers regardless of whether this is done pre-service or in-service, by distance or by any other mode. Practical work sometimes known as teaching practice or school practice is therefore taken as core in teacher education (Ben-Peretz 1994:5993, Dove 1986:251) and that it can be provided or run using variety of strategies (Furlong *et al.* 2000:2). In addition, there may be subjects that teachers must teach but which require practical work in the form of experiments, projects, and demonstrations however, in a distance education setting, this can be a challenge.

In Uganda, the question of practical work in distance education teacher education programmes is an issue that requires close examination. A number of questions should hence be considered in this regard. For example, how best can teaching practice be catered for and how can subjects that demand practical work be catered for in a distance education setting?

4.5.4 Factors impacting Distance Education

Although distance education is growing in many countries, there are still a number of factors that impact its growth ultimately determining how effectively it is used in any country. For it to grow in Uganda, especially in teacher education, it is vital to identify what some of these factors are and only then can effective plans be made. Some of these factors are:

- Attitudes about the efficacy of distance education
- Technology chosen for use in the programmes (Moore 1996:25, Verduin and Clark 1991:124).
- Management structures and systems of the programmes (Aguti 1996:84, 88; Keegan 1996:120)
- Finance and the cost of the programmes (Makau April 2001:21, Rumble 2001b:5).

- Success of other distance education programmes and dropouts in these programmes. Success or failure of other distance education programmes is likely to affect how other forthcoming programmes are viewed or the level of confidence and support these programmes will enjoy (Paul 1990:79, Perraton 2000:12).
- Policy on education and on distance education in particular. Along with this is the political will or support that distance education enjoys (Bates' 2000:18, 2001:142).
- Distance between the student and the institution. As Keegan says, this distance needs to be bridged and so this would definitely have an impact on how distance education is run and organized (Keegan 1996).

4.5.5 Strengths of Distance Education Teacher Education programmes

In chapter two and three the strengths of distance education in general and distance education teacher education programmes in particular were identified and these have to do with management of distance education, student support services, study materials developed and provided in these programmes, and assessment and examinations. Some of the specific strengths identified are briefly discussed here.

Distance education has been used to open up access and deal with inequalities. In teacher education, it (DE) has been used to provide avenues for upgrading of teachers, training the untrained teachers, providing avenues for retraining of teachers when there are changes in the school curricula and for training headteachers, (De Wolf 1994:1558, Holmberg 1986:30, Holmberg 1995b:13, Rumble 1992:19).

The typical university student is no longer the 19 – 22 year old. More and more working adults are returning to school and distance education has been used to provide education for this group of learners (Berge 2001a: 6, Peters 1994:28, Robinson 1996:6). Distance education has therefore provided avenues for adult teachers to return to school without leaving their jobs. Schools do not stand to lose teachers while they are training.

Although only a few cost analysis studies have been done, there are indications that distance education has been more cost efficient than the conventional full time courses (Bates 2000:128, Berge 2001b: 19, Orivel 1994:1572, Robinson 1996:20-27, Rumble 2001b:5). Perraton (2000:126 -127) presents some examples with indicative comparative costs. And according to these studies distance education was cheaper in the case of Junior Secondary Education in Malawi and Zambia; India National Open School; and in the Mexico Telesecundaria.

Since the distance learner studies most of the time by himself/herself, and also because of the flexibility that it offers, learners can take charge of their own learning (Moore 1996:29, Peters 1994:227, 1996:46,Verduin and Clark 1991:4-5).

For distance education to thrive, there must be institutional involvement and because of division of labour that distance education demands, there are normally high levels of planning and organisation (Peters 1994:118).

4.5.6 Weaknesses of Distance Education Teacher Education programmes

Inspite of the successes of distance education, a number of weaknesses have been identified. Distance education has been accused of:

- High dropout rates and low completion rates inspite of high enrolment rates (Holmberg 2001:73, Keegan and Rumble 1982:228, Paul 1990:79, Perraton 2000:12).
- It does not effectively promote deeper learning and the acquisition of critical thinking skills but is instead excellent for the distribution of information and delivery of facts, (Bates 1994:1577, Garrison 1996:12, Henri and Kaye 1993:27 -28, Holmberg 1993:331, Paul 1990:85, Perraton 2000:12).
- Not really promoting open access as claimed. Instead, there are restrictions as a result of entry requirements, fees levied, access to study materials and technology used; and as Henri and Kaye (1993:27) say, this implies that distance education programmes also shut out the very people the programmes were meant to reach.

These weaknesses may be as a result of the management of the programmes and the manner in which services are provided to students.

4.5.7 Teacher competencies

Teaching demands a combination of knowledge and skills and according to Robinson and Latchem (2003a:10) this includes knowledge and skills in ;

> …academic subjects, school curricula, pedagogy, and child development, communication, classroom management, creation and use of learning resources, assessment of learning and monitoring of individual progress.

It is therefore important that secondary school teachers in Uganda have this knowledge and abilities. Also, in Uganda, the teacher's role is expected to be '…*guide each child/learner…in order to develop the child/learner in body, soul, character and personality* (Ssekamwa 2001:82). To do this, teachers need a number of competencies

or '…*abilities to perform certain functions at standards of efficiency'* (Fraser 2001:55). However, there is no comprehensive description of what these competencies are although Obwoya Kinyera, Auma-Okumu, and others (2002) present a profile for the Ugandan primary school teacher. In this profile, they argue that a teacher should be able to function as:

- an instructor, who can prepare to teach, teach, assess the teaching and learning process, provide feedback to the learners and evaluate the lessons;
- a curriculum implementer who is able to assess the learners' needs, interpret, adapt and implement the curriculum;
- a caretaker who will help the children grow and develop;
- a counselor who can help children develop ;
- an administrator and manager; and
- an entrepreneur

(Obwoya Kinyera, Auma-Okumu, *et al.* 2002:14).

4.5.8 Information Communication Technologies for Distance Education Teacher Education programmes

Distance education has been closely associated with information communication technology right from its beginnings and as Garrison (1989:52) says *'the growth of distance education during each of these stages of development was made possible through the availability of new communication technology'.* In fact, the growth of distance education and the form it has taken and takes today has a lot to do with the dominant technology of the time. However, for ICTs to be successfully integrated there are a number of prerequisites that are identified and these are:

- Institutional support. This includes willingness and commitment to utilizing ICTs, supportive policies, and organizational structures.
- Adequate financial investment and support for the introduction and maintenance of ICTs.
- Availability of technical staff to maintain and support the technology
- Training of both staff and students in the use of technology
- Access to the technology. Both staff and students should have access to technology before it can be effectively utilized.

As Uganda seeks to enrich its distance education programmes through integration of technology, it is important to identify which technology is accessible to students and staff and to determine what can therefore be used in the teacher education programmes.

Also there are different strategies that can be adopted to ensure access (Perraton and Creed 2001:13) and these also need to be identified and exploited.

4.6 POPULATION AND SAMPLE

4.6.1 Introduction

According to Patton (2002:244),

> **There are no rules for sample size in qualitative inquiry.** Sample size depends on what you want to know, the purpose of the inquiry, what's at stake, what will be useful, what will have credibility, and what can be done with available time and resources.

In determining the sample used in this study therefore, the choice of the respondents was based on their importance to the study. The following categories of respondents were selected on the basis of their importance as discussed later in this section. These included:

- Former and current students of B.Ed (External)
- Current students of B.Sc (External)
- Prospective students of B.Ed (External).
- Tutors, writers, and managers of B.Ed (External)
- Officials from Ministry of Education and Sports particularly Teacher Education, Higher Education and Secondary Education Departments.
- District Education Officers and District Inspectors of Schools from select districts
- Directors/Principals of select Teachers' Colleges
- Select Deans/Directors, Registrars from Makerere University
- Registrar of Kyambogo University.

These respondents were grouped into five categories of former, and current students, B.Sc (External) students, prospective students, tutors and managers of B.Ed (External) and policy officials. For each of these categories, a different instrument was designed.

4.6.2 Sampling Procedure

This study employed a combination of sampling procedures. Random sampling was not entirely possible since the researcher did not have a complete list of all the populations in the different districts. A combination of random and non-random sampling techniques were therefore used, and this according to Johnson (2002:113) can lead to more focused results. Also, according to Patton (2002) purposive sampling can be used to ensure that 'information-rich cases' are included in the sample. Ritchie (2003:81), concurs with this

when she says that purposive sampling can be used to achieve diversity in the sample and to ensure aims of the study are achieved.

National Teachers' Colleges (NTCs) are particularly important in teacher education in Uganda because this is where secondary school teachers in the country are trained. See also section 3.5.4d and table 3.3 for more information on the NTCs. The input of such colleges was as such viewed to be critical. The choice of the districts was therefore purposive, depending on whether there was a National Teachers' College in the district or not. In addition to ensure that the different regions in the country were represented in the study, one NTC was chosen from each region. Ultimately the following NTCs were sampled:

- NTC Nagongera, Tororo District to represent the Eastern Region
- NTC Kakoba, Mbarara District to represent the Western Region
- NTC Masindi, Masindi District to represent the Northern Region. As mentioned in section 1.7 and discussed further in section 8.5 because of insecurity in the North of the country, it was not possible to visit NTC Ngetta, Lira which was initially sampled. NTC Masindi was then identified as the nearest yet posing no security threats.
- NTC Nkozi, Masaka District to represent the Central Region

No NTC was sampled from the Southern Region because of funding limitations. However, since majority of the students on the Bachelor of Education (External) come from Kampala, Entebbe, Wakiso and Mpigi, these districts were also included in the sample. Soroti district was also included in the study because of the number of the B.Ed (External) students in it and also because it is close to Lira district which was eliminated because of insecurity. Having selected the districts, it followed that the District Education Officials and District Inspectors of Schools therefore became part of the sample of policy makers to be reached. Also, the Directors of these NTCs were included in the sample.

At each district, schools within the radius of 5 km were selected for ease of access and all the former and current students of the B.Ed (External) in these schools were then sampled. Since no mapping of students had been done prior to visiting the districts, this was done on visiting the districts. In addition, when the current students were at the University for face-to-face activities, the researcher addressed the students explaining the study and its purpose. Volunteer participants were then invited to participate in the study.

The same strategy was used when selecting prospective students. The B.Ed (External) admits teachers who hold a Diploma in Education. Since the researcher did not have the posting details of all such teachers in the country, its was difficult to identify and reach such teachers. Final year teacher trainees at the NTCs were instead sampled. At each of the NTCs visited, the researcher was given opportunity to address the final year students explaining the purpose of the study; the students were then invited to volunteer to participate in the study.

Johnson (2002:113) however points out that volunteer samples may imply bias because such samples may not necessarily represent the views of the population. To minimise this possible effect, the districts of origin and the sex of the volunteers was taken into account so as to ensure that the diversity of the students was reflected in the sample.

Ultimately, using this combination of sampling strategies, the sample totalled 305 with 185 students, 49 prospective students, 36 tutors and managers, and 35 policy makers.

4.6.3 Sample representativeness and generalisability

A sample can be said to be representative if it is similar to the population; that is, it contains the aggregate characteristics of the population. This is important if the results of the study are to be generalised to the rest of the population (Babbie 1992:197, Johnson 2002:107, Yegidis and Weinbach 2002:181). However, it should also be remembered that it is impossible to achieve perfect representativeness and as Yegidis and Weinbach (2002:181) conclude , it is not always necessary either.

This study sample was believed to be representative of the population for largely the following reasons:

- Students and policy makers reached were drawn from the different regions of the country. This therefore reduced ethnic bias.
- Age range of the sample is also representative of the age ranges of the population. For example, B.Ed (External) admits working adults of varying ages including those who will have just qualified (about 24 years) and those nearly retiring (55 years).
- The sample included major stakeholders of the B.Ed programme i.e. managers and tutors, prospective students, former students, current students, Ministry of Education and Sports staff, and district education officials.

- The overall total of the sample is relatively large (total of 305), so the findings are not a result of views of a small sample which would have heightened the problem of bias.

Although there are certain elements of this study that are generalisable to all distance education teacher education programmes, there are some elements that may be only generalisable to only Makerere University's B.Ed (External). This issue is discussed further in section 8.3 and 8.5.

4.6.4 Education policy officials

a) Ministry of education officials involved in Teacher Education and higher education

These are people who are very instrumental in policy and decision-making with regard to teacher education. They also provide oversight to teacher education in the country and are very instrumental in supporting any efforts at seeking external funding for national projects. It was therefore imperative to gather their views regarding teacher education by distance education. Involving them could also ensure an element of ownership should the proposed model be implemented. Assistant Commissioners of Higher Education, Secondary Education and Teacher Education were sampled.

b) Principals, and Directors of Teachers Colleges

These are heads of the training colleges and they are involved in the day-to-day running of the colleges. Their input in many ways always determines the life and direction of teacher training in any college. Yes, there is a national curriculum to be followed but the implementation of the curriculum often depends on the head of the training college. Also, distance education thrives on collaboration and in nearly all the cases of current DE teacher education programmes, teachers' colleges are very much involved. These heads therefore already have some knowledge and experience of what it means to run and manage distance education programmes. Their insights were therefore deemed vital for the design of any distance education teacher education programme.

c) District Education Officers and District Inspectors of Schools

Uganda has decentralised the management of many social services including education. District Education Officers and District Inspectors of Schools are therefore particularly key in the implementation and policy making at district level. Also, since districts are the final 'consumers' of the teacher education graduates, it was important that they are consulted on how this training should be organised. Besides, DE programmes depend

on the support of the districts for the release and support of teachers during the training. These district managers are therefore important partners. To ensure that views were collected from most parts of the country, officials were randomly selected from 6 different districts in the country.

d) Directors/Deans and Registrars

The B.Ed (External) of Makerere University is being run on collaborative basis involving among other University departments the School of Education and the Institute of Adult and Continuing Education (IACE). Deans and Directors are Senators and are critical in policy making and in the day-to-day management of the programme. So their views were critical because of the previous experience with the programme and in regard to what they see as the future of the programme. And with regard to the guidelines being proposed for a new model for the provision of B.Ed, again like the Ministry of Education and Sports officials, involving these officials in the study will increase possibilities of ownership of the proposals.

4.6.5 Former and current students of B.Ed (External)

Without students there can be no education programmes. The world trend today is to involve consumers of any product as much as possible. Also marketability of any education programme will to a large extent depend on the students or prospective students. If students do not approve of what they are being given, they could vote 'with their feet' thereby leaving the programme.

Former and current B.Ed (External) students have experienced a lot and so can give insights into what elements of the present model have been appropriate and what have not been. They can also give information of what else could be included in the design to make learning better.

4.6.6 Current B.Sc (External) students

This group of students was not initially sampled but in the course of the study, a decision was taken to include them so as to more fully understand the experience of the science students. Also, since many of the B.Sc (External) students are teachers, their input was deemed vital in understanding what they see as necessary in the training of science teachers. Besides as distance education students and as a result of their interaction with B.Ed (External) students, it was assumed they would be able to give feedback on what they see as the strengths and weaknesses of the B.Ed (External) programme.

Taking a decision to include other respondents in a study after it has begun is in agreement with what Patton (2002:240) says. For, according to him, other samples could emerge during the study and such samples can therefore be included.

4.6.7 Prospective students of B.Ed (External)

The B.Ed (External) admits teachers with diplomas or equivalent in education. However because of the challenge of reaching practicing teachers the sample of prospective students instead included final year students of National Teachers' colleges (NTCs) studying for various Diploma courses in Education. As already mentioned in section 4.6.3 it is important to involve customers in determining what products they would want. The future of B.Ed (External) to some extent depends on what tomorrow's market thinks of it. To take into account such desires, the prospective students were sampled to give their views on what they see in the current programme and what they think could be done to make this programme better.

4.6.8 B.Ed (External) staff

Since this study was focusing on distance education INSET for secondary school teachers in Uganda and since B.Ed (External) is one of the programmes providing INSET for secondary school teachers, the staff of the programme (which includes tutors, writers, reviewers, managers and administrators) is a vital category. Some of the staff are involved full time with the programme while others are participating in part-time capacities. Also, the staff is not only drawn from Makerere University but also from other institutions as well,especially from Kyambogo University.

Without staff representing different categories, no programme can be run and the growth of any programme is hugely dependant on the participation of its staff. It was therefore critical to establish from the staff the views and opinions regarding the current model of presenting B.Ed (External) and to identify what proposals they have with regard to improvements that could be made and how best ICT can be integrated in the programme.

As mentioned earlier, a total of 305 respondents were reached as shown in table 5.2 with 185 students, 49 prospective students, 36 tutors and managers, and 35 policy makers.

4.7 DATA COLLECTION PROCEDURES

To achieve objectives set out in this research a number of research instruments were used. Each of the instruments designed was used to gather both qualitative and quantitative data. Also to ensure proper administration and maximise participation of the respondent, some procedures were followed. The forthcoming sub sections now discuss all these issues.

4.7.1 Literature review

The first part of this study was concerned with examining the different theories of distance education and in examining teacher education in general and teacher education by distance education in particular. This was important for it helped lay a strong theoretical basis for the study. Also, the recommendations made in section 8.3 as a framework for INSET for secondary schools in Uganda is partly based on this theoretical basis.

4.7.2 Questionnaires

Different types of questionnaires were designed for the different categories of people sampled. See sections 4.6.3 – 4.6.8 for details on the sample. This was so as to establish both qualitative and quantitative data on:

- What is perceived as the potential of distance education in Uganda and what courses could be offered using the same.
- Strengths and weaknesses of the current Teacher Education DE programmes in the country.
- What needs to be done to improve the design of these programmes.
- Media that have been used in these programmes and how effective these media have been.
- Media that is accessible to these programmes and how this can be used in teacher education.
- Factors likely to impact teacher education by DE in the country and how these can be dealt with in design of programmes.

The questionnaires contained both close-ended and open-ended questions. The open-ended questions were used a lot so as to obtain detailed understanding of the phenomena being explored. This type of questions also gave the respondents the freedom to freely express themselves. On the other hand, close-ended questions were

used so as to give respondents opportunity to choose from alternatives provided in the instruments.

All questionnaires were self-administered. However, all tutors, writers, reviewers, administrators and managers were individually approached, the questionnaires left with them and these were then retrieved later. The same strategy was used with some students but for others the questionnaires were administered in groups. This assured high return rate (Babbie 1992:263, Yegidis and Weinbach 2002:214).

Questionnaires were used because of their appeal:

- Convenient to administer. The researcher did not always have to be physically present to administer each questionnaire.
- Respondents have the perception of anonymity and so have the freedom to provide information confident of their anonymity. It was therefore possible to get information that would perhaps be difficult to get if the respondents were not confident of this anonymity.
- Supervision of administration of questionnaires increases rate of returns

(Babbie 1992:263, Yegidis and Weinbach 2002:214).
See appendices II - V for the different questionnaires that were used.

4.7.3 Structured interview schedule

Interviews formed one of the major components of the study and were aimed at gathering both qualitative and quantitative data. This was for officials of Ministry of Education and Sports headquarters - Teacher Education, Secondary Education and Higher Education Departments. These three departments in the Ministry were selected because of their direct relevance in secondary education. In addition, structured interviews were also held with Education Officials at the Districts, Principals/Directors of teachers colleges and with key persons at Makerere University and at Kyambogo University.

A structured interview schedule was utilised because it allows for a clear statement of what needs to be explored and it was also possible to state all questions that were asked. In so doing, it was possible to ensure that the interviews were highly focused eliminating unnecessary digressions that are often likely in an interview (Babbie 1992:263, Legard *et al.* 2003:168, Yegidis and Weinbach 2002:166). Also, interviews

were used as part of triangulation in the data collection (Houser 1998:243, Lewis *et al.* 2003:275, Patton 2002:343 – 346).

See appendix VI for the interview schedule used.

4.7.4 Conditions under which the instruments were administered

All the questionnaires were self-administered. However, a letter explaining the purpose of the study accompanied each questionnaire (see appendices II - V). The participants were also assured that their responses would be treated with confidentiality. For as Johnson (2002:98) says, it is vital *'… to let the respondents know who is conducting the research, the purpose of the survey, how they were selected, and how the information will be used.'* Patton (2002:343) concurs with this because, to him too, informed consent is important before any participant is drawn into the research.

For the interviews, to reach each interviewee, appointments were made and before commencing the interview, the purpose of the interview was explained, and permission sought to record the interview. In so doing, the respondents were put at ease and willingness to participate in the study established.

4.8 ENSURING HIGH RELIABILITY AND VALIDITY OF THE INSTRUMENTS

Reliability reflects the level of consistence in the data while validity expresses the degree to which a specific method measures what it was supposed to measure; and both these are very critical in determining the quality of research (Borg 1987:117, Houser 1998:238, 242; Yegidis and Weinbach 2002:206, 209). To achieve this in the study, the following were done:

- Instruments were pilot tested and the lessons from the test incorporated. This issue is discussed section 4.4.2.
- Experts reviewed the instruments. See section 4.4.1
- As already discussed in section 4.7.4, conditions under which the instruments were administered were by and large similar
- Categories used for coding of results were determined after examining all the responses received and determining the trends that emerged. This will be discussed in more detail in section 4.9.2.
- Triangulation. This is the process of utilising a variety of methods and researchers to gather data; and different theories to interpret the data. This process has the effect of strengthening the study, improving, clarifying and validating findings (Lewis *et al.*

2003:275, Patton 2002:247). In this study, literature review, questionnaires for different categories and interview schedules were used. Items included were derived from literature reviewed while the questionnaires and the interview schedule covered the main issues the study was concerned with and as can be seen in the different instruments (appendices II - VI), and in the data analysis given in chapters 5 – 7, similar questions were asked. This enabled the researcher to compare responses given on the same issue or question.

4.9 DATA ANALYSIS

Most of the data collected was qualitative so, it was coded, and grouped according to different subheadings. The data was analysed with the help of the Department of Statistics in the University of Pretoria using the statistical package SAS Version 8. Percentages and frequency diagrams were used to indicate the distributions of the different views expressed. This enabled the researcher establish what the respondents said regarding the current models of distance education. In addition the Chi-Square test was applied to some of the data so as to establish levels of significance.

The information so gathered and analysed was then used to draft a Framework for High Quality INSET Distance Education for Secondary School Teachers in Uganda.

4.9.1 Transcribing data from interviews

As mentioned earlier in section 4.7.3 interviews were a major source of data in this study. So to have a record of the interviews, a mini cassette recorder was used and later, each interview was transcribed and the responses entered into the structured interview schedules. This data was then coded and grouped according to the different sub headings. The researcher did all this although the themes identified were discussed with the supervisors and with the research support team from the Department of Statistics, University of Pretoria.

The next section focuses on the grouping of all the data collected from the interview schedules and from the questionnaires.

4.9.2 Grouping of the qualitative data from questionnaires and interview schedule

The data that was ultimately collected from the study was of two categories quantitative and qualitative data. To analyse the qualitative data that was gathered from the open-ended questions and from the interview schedule, implied engaging in some degree of

inductive analysis (Patton 2002:55, 453, Spencer *et al.* 2003:202). To reduce the data thereby deriving meaningful themes or patterns from the huge data gathered, it was necessary to group the data.

All the responses to all the open-ended questions were copied out and a research assistant typed these out according to the different categories of the respondents. The researcher then studied these to identify the emerging themes and issues. The different responses were grouped according to these themes which ultimately became the categories that were used in the coding. Each of the categories was assigned a number and the numbers then used for coding purposes.

This grouping may have been informed by the reading and analysis of literature but by and large, the groups were arrived at as a result of my understanding of what was said. I did not go to the field with predetermined themes for analysis of the data.

It should also be noted that these groups of data are not mutually exclusive
But are very much interrelated and should therefore be seen thus. The different summaries of these categories are presented in appendix VII.

4.10 CONCLUSION

This chapter has outlined the methodology that was used in this study. The data gathered was largely qualitative although some quantitative data was also gathered. Three instruments – literature review, questionnaires and interview schedule – were used to gather the data. Altogether, a total of 305 respondents were involved and these included various stakeholders of the B.Ed (External) programme.

The key concerns of the study that the interviews and questionnaires sought to deal with have also been raised once again and in the next chapters, the findings of the study will be presented.