CHAPTER 4

METHODOLOGY

"The method consists of an attempt to build a bridge between

the world of sense and the world of science"

- Bertrand Russell (1872 -1970) -

4.1   INTRODUCTION

The establishment of an inclusive education system in South Africa has introduced a new era in education provision for learners who experience barriers to learning. Establishing this type of system does, however, result in a unique set of challenges as determined by the specific context in which it functions. The unique South African context, with its specific barriers to learning, poses a unique challenge to achieving this aim, while the teacher in particular is a key role player in the implementation of such a system.

A significant amount of foreign research is available with regard to teachers' attitudes towards inclusive education in general. These studies rely on teachers' self-reports of their experiences and their views are determined by ratings on different Likert scales (Dockrell & Lindsay, 2001:372). Although such data is important on an initial descriptive level, these tools are constrained because they do not generally consider teachers' knowledge and attitudes in relation to individual children who experience specific barriers to learning. An analysis and comprehensive view of teachers' knowledge and attitudes regarding learners with *specific* educational needs would foster recognition of the teacher's position and role.

The present study is designed to identify the specific demands made on the teachers of a particular group of learners with specific educational needs – those with hearing loss.

On the assumption that teachers; knowledge and attitudes can have a significant influence upon the success of inclusive education for the child with a hearing loss, the study was at first concerned with investigating teachers' knowledge and attitudes regarding inclusive education for the child with a hearing loss. Focus group discussions with teachers, speech-language therapists/audiologists and parents allowed elaboration of their views of inclusive education for children with hearing loss in the South African context, the specific role of the teachers in this regard and the challenges posed to these teachers in their responsibility to meet the learners' needs.

The aim of this chapter is therefore to provide a complete exposition of the research methodology followed in the study. The purpose of the study and the research design are discussed first. The two phases of the main study are next discussed on the basis of the selection of research subjects, the pilot studies, and the data collection procedures and data analysis.

4.2   AIM OF THE STUDY

The main aim of the empirical study is to determine and describe the challenges pertaining to a hearing loss that are posed to the teacher of the child with a hearing loss in inclusive education in the South African context.

The main aim is achieved (realised) through the following sub-aims

- To *quantitatively* determine the **knowledge** of teachers and student teachers with regard to inclusive education and teaching the child with hearing loss in inclusive education.

- To *quantitatively* determine the **attitudes** of the teachers and student teachers towards inclusive education and teaching the child with hearing loss in inclusive education.

- To determine the **needs** of the teacher who has to teach a child with a hearing loss ininclusive education, with regard to personal training, further training and in-service training.

- To provide a *qualitative* description of the demands including knowledge and attitude) facing the teacher of a child with hearing loss in inclusive education.

4.3   RESEARCH DESIGN

4.3.1   Description of the research design

"A research design is a strategic framework for action that serves as a bridge between research questions and the execution or implementation of the research*"* (Durrheim, 2002:29). The research design is a blueprint or plan that serves as a framework on the basis of which the researcher can plan and conduct the study (Fouché & De Vos, 1998:123).

This study will attempt an in-depth description of the challenges posed to the teacher of the child with hearing loss in inclusive education within the South African context.. The researcher thus aims to describe, **accurately and precisely, 'that which is'** (Neumann, 2000:22). The appropriate research design in this case is the '**descriptive survey',** which enables the researcher to acquire and process relevant information about the knowledge, attitudes and demands made on the teacher, both quantitatively and qualitatively.

A *quantitative* analysis of the knowledge and attitudes of teachers towards inclusive education and the child with hearing loss, enables the researcher not only to illuminate the state of the knowledge and attitude of the teacher/student, but to acquire valuable information through the necessary correlations and comparisons, taking into consideration the dependent variables such as training, experience, etc.

A *qualitative* analysis allows the description of specific aspects of the teacher/student's knowledge and attitude that are difficult to quantify (since the researcher cannot include all possible answers) (Steenekamp, 1984:19). Additional qualitative information about the teacher's specific training requirements can be acquired and described in this manner.

The *qualitative-quantitative* nature of this research therefore ensures the achievement of the indicated sub-aims (Fouché, 2002:109) and contributes to a specific approach in this research namely the *triangulation of method.* The latter can be used to combine a variety of different methods (qualitative and quantitative) in order to investigate and describe the specific phenomenon (De Vos, 2002:365). One of the advantages of this approach is that it enables the researcher to apply two methods independently in different phases of the research – the so-called two-phase model devised by Creswell (De Vos, 2002:365).

A further integral part of the research design comprises the *ethical issues* in terms of what is wrong and what is right in the conduct of the research (Mouton, 2001:239). As the research involved the acquisition of material and information provided on the basis of mutual trust, it was essential that the rights, interests and sensitivities of those studied had to be protected. Aspects that were addressed were the right to privacy (including the right to refuse to participate in the research), the right to anonymity and confidentiality, the right to full disclosure about research (informed consent) and the right not to be harmed in any manner (Mouton, 2001:243).

4.3.2   Research phases

Against the background of the selected research design and the delineation of the study as described in Chapter 1 (refer to Figure 1.2), the following research phases as outlined in Figure 4.1 were decided on:
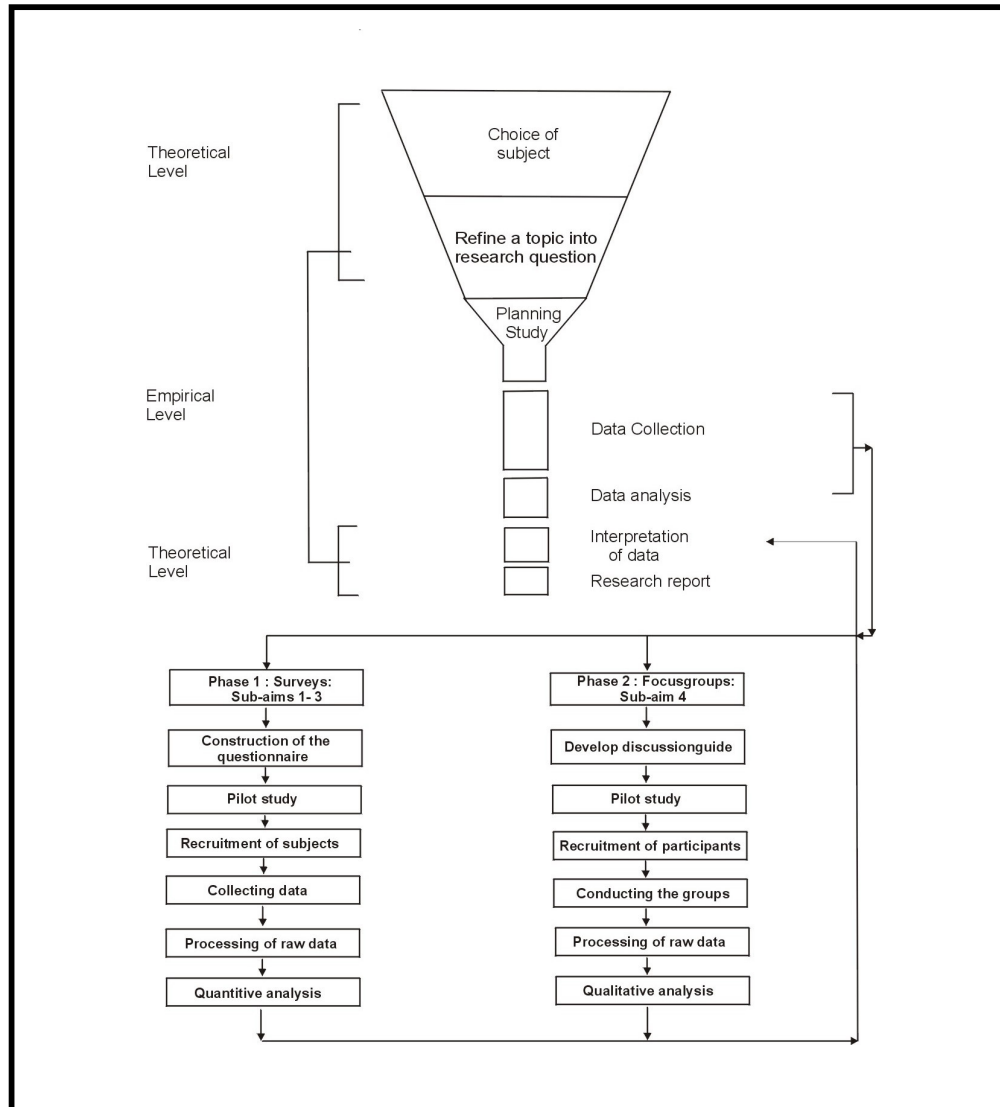
Figure 4.1 Planned Research Phases

The research was conducted in the following phases, sequenced chronologically:

- Selection of topic based on an identified problem that necessitates research. This was conducted by means of a literature study and an investigation of limited scope within the specific subject discipline of Educational Audiology.

- Analysis, synthesis and evaluation of literature that led to the refinement of the topic on the basis of background information obtained. This process led to the redefinition of the research question.

- Next, the study was comprehensively planned in terms of research design, methods of data collection and analysis. This included the application for the approval of ethics that accompanied the submission of the research proposal. To support the quantitative and qualitative nature of the research design, it was decided to use questionnaires (phase 1) and focus groups (phase 2). The design and composition of the research instruments (questionnaires and discussion guidelines) were subsequently finalised. See paragraph 4.4.2 for a complete discussion of the design and composition of the questionnaires, and paragraph 4.5.4 for the design and composition of the discussion guidelines.

- Pilot studies were conducted to determine the suitability and feasibility of the questionnaires and discussion guideline. Refer to paragraphs 4.4.3 and 4.5.5 for a complete description of the pilot studies.

- Phase 1 of data collection involved the distribution of the questionnaires to teachers of primary and pre-primary schools, as well as final-year student teachers. Contact was established with the selected schools and tertiary institution to explain the purpose and significance of the study. Dates and times for surveys were determined and informed consent obtained. Thereupon surveys were conducted at the different schools. Refer to paragraph 4.4.4 for a

comprehensive discussion of these aspects.

- Phase 2 of the data collection comprised the conducting of three focus group discussions. The participants in the respective focus groups were parents of children with hearing loss in inclusive education, as well as teachers and speech-language therapists/audiologists involved with this population. Focus group discussions were recorded and data was transcribed. Refer to paragraph 4.5.6 for a comprehensive discussion of these aspects.

- Processing of raw data was followed by statistical analysis. Refer to paragraphs 4.4.5 and 4.5.7 for comprehensive discussions of the data analysis.

- Interpretation of the processed data and conclusions.

- Presentation of the data by means of a research report.

In paragraphs 4.4 and 4.5 the main study will be discussed in two phases,which will include the subject selection and description, research material, pilot study, data collection and analysis procedures of each phase.

4.4   MAIN STUDY: PHASE 1

This phase comprised determining the knowledge and attitude of teachers towards inclusive education and the education of the child with a hearing loss in this setting (sub-aims 1 - 2). The needs of teachers with respect to personal training, further training and in-service training were also determined (sub-aim 3). As indicated in Figure 4.1, this phase involved the use of questionnaires as a research instrument to comply with the quantitative nature of the research design.

4.4.1 Subjects

As was stated clearly in the main aim of this study, the focus is on the teacher of the child with hearing loss in inclusive education. The participants in this study were therefore teachers in ordinary schools, and not teachers involved with children with hearing loss in special schools. Although the latter group might perhaps have a more extensive knowledge of the child with hearing loss, this is not relevant in the particular teaching situation of the teacher in a normal school. In addition, it was decided to involve teachers who are currently involved in pre-primary teaching or primary teaching (foundation phase). The justification for this is the fact that, in the light of early identification, intervention and improved technology, a number of children with hearing loss have already been included in these phases. Particularly as a result of new legislation regarding inclusive teaching, there is a stronger possibility that the teachers involved in this phase may be exposed to children with hearing loss within the not too distant future. Final-year education students studying at a tertiary training institution have also been included in the study to obtain an idea of their knowledge and attitudes before entering the new educational era of inclusive education as trained practitioners.

4.4.1.1   Criteria for the selection of research subjects

4.4.1.1.1 Criteria for the selection of teachers as research subjects

➢ **Geographical area of research**

For the sake of convenience, research was conducted at schools in the Gauteng area (Pretoria, Johannesburg, Vereeniging, Meyerton, Vanderbijlpark and Springs). Altogether 39 pre-primary and 13 primary schools were targeted, as these schools were geographically accessible to the researcher, making it possible to deliver the questionnaires personally.

➢ **Working environment**

The research subjects were employed in pre-primary or primary schools (foundation phase - Grades 1 - 3).

➢ **Professional qualifications**

The research subjects were required to have an applicable teaching qualification: a degree, diploma or certificate.

➢ **Language**

Research subjects were required to be Afrikaans or English speaking in order to be able to complete the questionnaires.

4.4.1.1.2 Criteria for the selection of students as research subjects

➢ **Geographical area of research**

The subjects had to be enrolled students of the Faculty of Education at a tertiary institution in Pretoria.

➢ **Professional qualifications**

The research subjects had to be enrolled as final-year education students, completing a diploma, degree or certificate.

> ➤ **Language**

Research subjects were required to be Afrikaans or English speaking in order to be able to complete the questionnaires.

4.4.1.2   Selection procedures and description of research subjects

4.4.1.2.1 Selection procedures and description of teachers as research subjects

Based on time and financial constraints, identified schools in the Gauteng area were included in a sample of convenience. All the teachers of the selected schools were included in the study. A total of 105 questionnaires were handed out at primary schools and 100 (95%) were returned. Altogether 150 questionnaires were handed out at pre-primary schools, of which 120 (80%) were returned. According to Babbie (2004:261) this response rate can be viewed as excellent as a response rate of 50% is already adequate for analysis and reporting. The study was therefore based on the completed questionnaires returned by 220 respondents.

The following biographical information with regard to the 220 subjects is important:

i) Gender

218 female and 2 male teachers were included in the study.

ii) Age

Figure 4.2 below summarises the age distribution of the teachers.
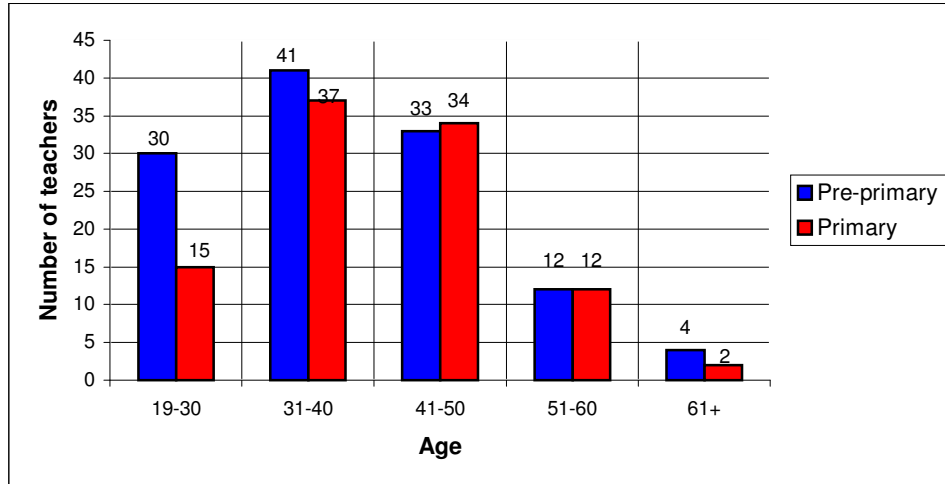

Figure 4.2 Age distribution of the research subjects (n=220)

According to Figure 4.2, 75 teachers were between the ages of 19 and 30, 78 teachers were between the ages of 31 and 40 and 67 were between the ages of 41 and 50. A total number of 30 teachers were older than 50.

iii) Home language

Of the teachers, 45 were English speaking, 170 were Afrikaans speaking and five spoke other languages (SeSotho, isiNdebele).

iv) Highest educational qualifications

Figure 4.3 summarises the highest educational qualifications of the teachers. Only qualifications already acquired were taken into consideration.
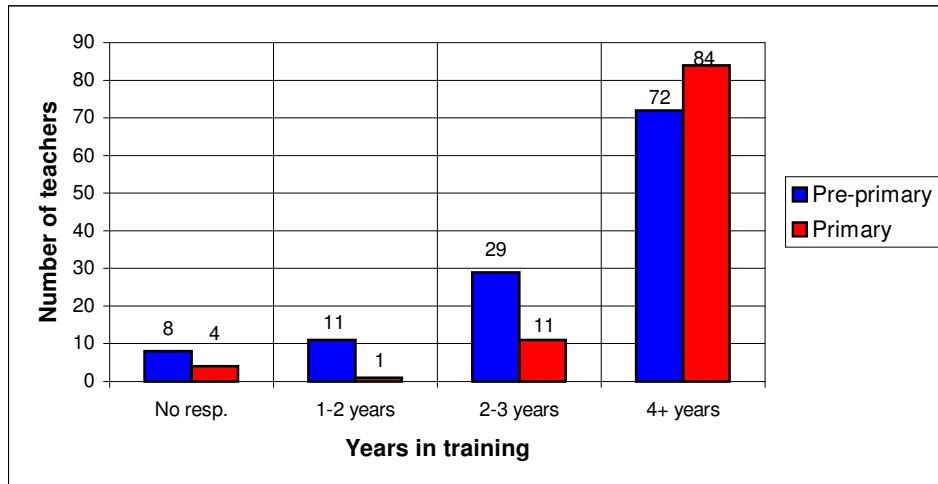
Figure 4.3 Highest educational qualification (n=220)

Figure 4.3 shows that 208 of the teachers had a tertiary qualification. Of these, 156 had completed four or more years of training. Another 40 teachers had two to three years of tertiary training, while 12 teachers had only one or two years of training.

v) Experience

• **Years of teaching experience**

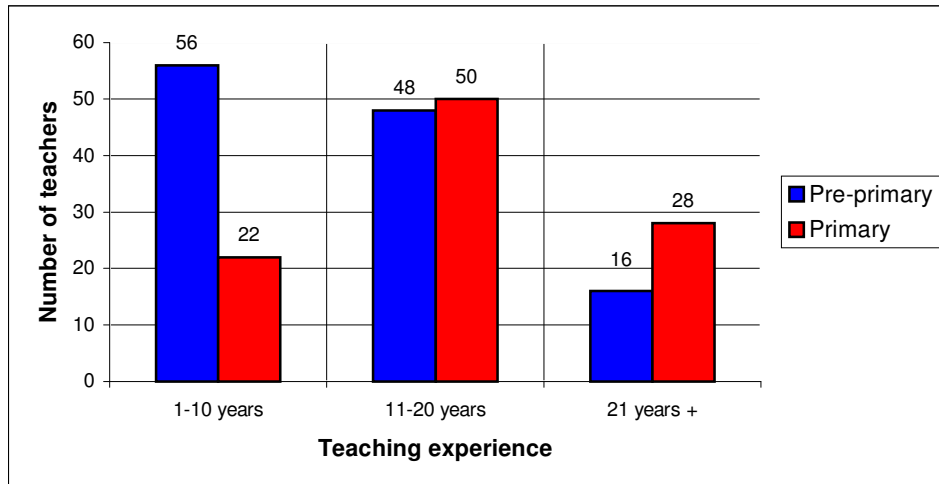Figure 4.4 summarises the teaching experience of the research subjects.

Figure 4.4 Teaching experience in years

Figure 4.4 indicates that the majority of the teachers had 11 to 20 years of teaching experience. Another 78 teachers had between 1 and 10 years of teaching experience and 44 teachers had in excess of 21 years of experience.

- **Personal experience with hearing loss**

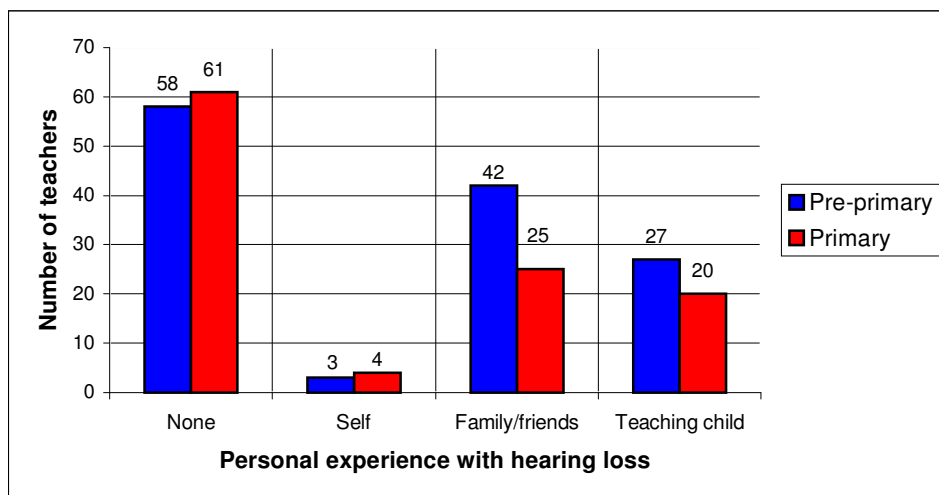Figure 4.5 indicates the teachers' personal experience with hearing loss.

Figure 4.5 Personal experience with hearing loss

According to Figure 4.5, seven of the teachers had a hearing loss, while 119 indicated that they had no experience of hearing loss. Altogether 67 teachers claimed to know a relative or friend with a hearing loss and 47 stated that they had already taught a child with hearing loss.

vi) Current teaching institution

• **Type of school**

A total of 102 of the teachers were employed in departmental primary schools, while 16 were employed in private primary schools. Nine of the pre-primary school teachers were employed in departmental schools and 91 at private pre-primary schools.

vii) Class composition

• **Number of learners in class**

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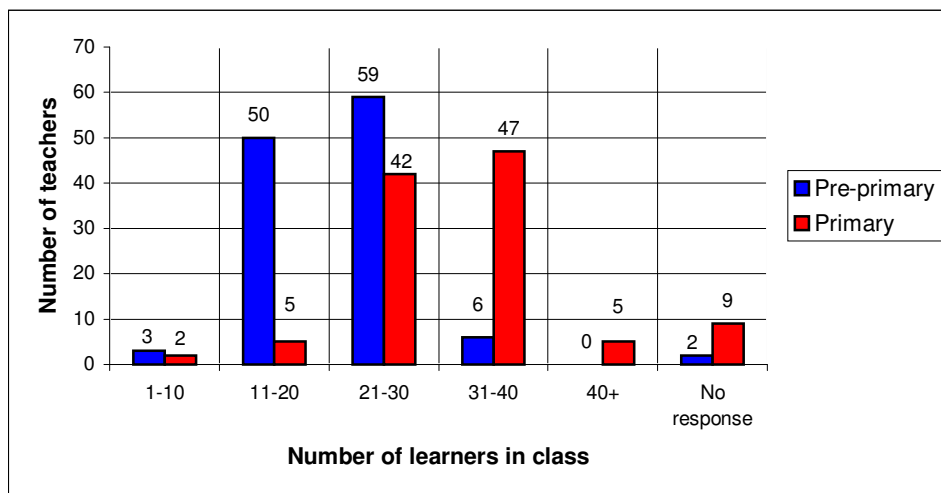Figure 4.6 shows the number of learners in the class of each teacher

Figure 4.6 Number of learners in class

According to Figure 4.6, the majority (59) of the pre-primary school teachers had 21 to 30 learners in their class, while the majority of their primary school colleagues had classes of between 31 and 40 learner. This teacher/pupil ratio in itself could be a problem for the child with hearing loss.

- **Number of learner with hearing loss**

Figure 4.7 is an exposition of the number of learners with hearing loss in each teacher's class
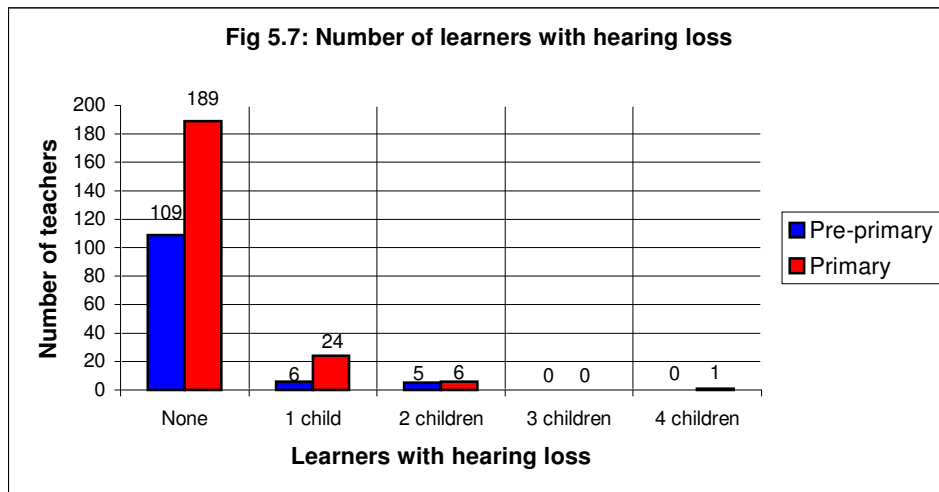
Fig 5.7: Number of learners with hearing loss

Figure 4.7 Number of learners with hearing loss

According to Figure 4.7, 187 teachers indicated that they had no learners with hearing loss in their class. However, 24 of the primary school teachers had one child with hearing loss in class, while 6 of the pre-primary school teachers reported having in class one child with hearing loss.

4.4.1.2.2 Selection procedures and description of student teachers as research subjects

Due to time and financial constraints, a sample of convenience was drawn by using all the final-year student teachers at a tertiary institution in Pretoria. A total of 100 questionnaires were handed out and 81 (81%) were returned, which once again constitutes a relatively high response rate (Babbie, 2004:261).

The following biographical information with regard to the 81 subjects is important:

i) Gender

Eighty (80) female students and one male student were included in the study.

ii) Age

75 of the students were between 21 and 25 years old, while the other 6 students were between the ages of 26 and 33.

iii) Home language

Eight students were English speaking, 71 spoke Afrikaans and one Sepedi. One student did not complete this question.

iv) Training course

Figure 4.8 summarises the current training courses.
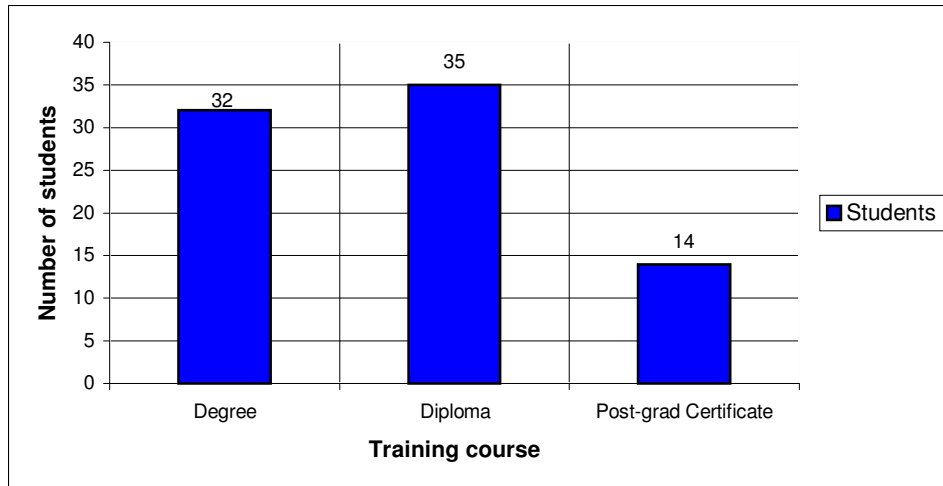
Figure 4.8 Current training course

According to Figure 4.8, 32 students were studying to complete a degree in education, 35 a teaching diploma and 14 students a postgraduate certificate in education.

v) Personal experience with hearing loss

Figure 4.9 indicates the students' personal experience with hearing loss.
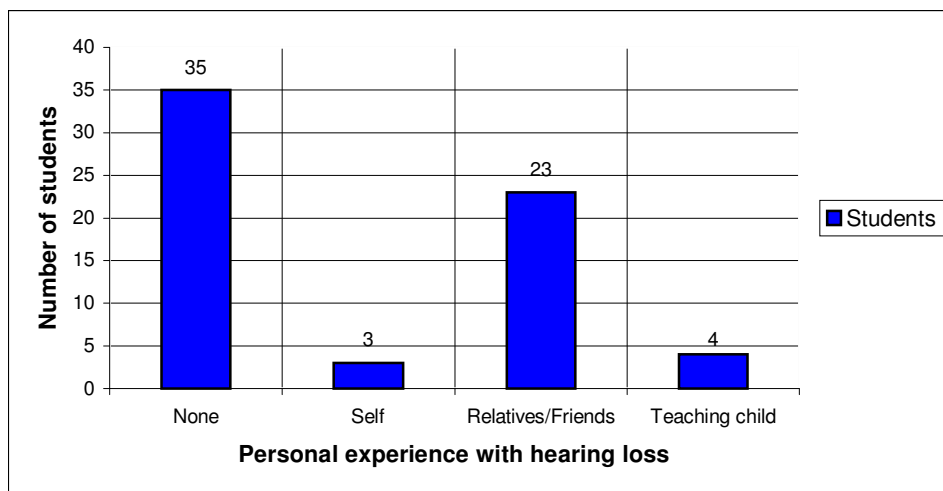

Figure 4.9 Students' personal experience with hearing loss

According to Figure 4.9, three of the students had a hearing loss themselves, while 35 indicated that they had no experience of hearing loss. Altogether 23 teachers claimed to know a relative or friend with hearing loss and four stated that they had already taught a child with hearing loss during their practical training.

4.4.2 Research material

The questionnaire is the best tool for the researcher who wishes to acquire original data for describing a large population (Babbie & Mouton, 2002:231). With this objective in mind and also considering practical problems involved in including all teachers at the different schools, it was decided to use questionnaires rather than formal/informal interviews. The aim of the questionnaire was to determine the knowledge and attitudes of pre-primary school teachers, primary school teachers (foundation phase) and final-year student teachers towards inclusive education and the child with hearing loss. It was hoped that this would lead to a comprehensive idea of the knowledge and attitudes of the teachers and students, and that it could also contribute to an understanding of the aspects that would need to be addressed in the process of inclusion.

From the viewpoint of the researcher there are more advantages than disadvantages in using questionnaires to facilitate the conducting of the research. These advantages include *inter alia* the following (Babbie & Mouton, 2002:263):

- Anonymity can be assured. This contributes to the research subjects having a more positive attitude towards questionnaires than towards interviews.

- A large number of research subjects can be reached by questionnaires.

- Detailed information for a descriptive study can be acquired in a reasonably short

time.

- The use of a standard questionnaire (uniform questions and answers) ensures that individual variations can be attributed to the individual and not to the questionnaire.

- The data can be analysed and interpreted more easily than verbal responses.

One of the disadvantages of this method is that people are generally negatively inclined towards questionnaires (Neuman, 2000:266) and therefore often do not complete or return them. In order to obviate this tendency, the questionnaires were handed out to research subjects personally. The researcher was therefore present during the completion of the questionnaire and sufficient time was available for explanations in case of any uncertainty. A further disadvantage is that the questionnaire does not really provide for an in-depth investigation of a specific phenomenon, since the researcher cannot cover all relevant aspects in a questionnaire (Babbie & Mouton, 2002:263). With this disadvantage in mind, it was decided to supplement the information acquired from questionnaires with focus group discussions.

4.4.2.1 Questionnaires

Two separate questionnaires were used in the study. (See appendices A and B.)

4.4.2.1.1 Questionnaire 1 – Knowledge questionnaire (Appendix D)

This questionnaire consisted of two components i.e. biographical information and questions focused on the teacher's knowledge or supposed knowledge of inclusive education and the child with hearing loss in the classroom. 'Knowledge' was taken as the starting point, not so much to determine whether the respondent had the specific knowledge, but rather because knowledge constitutes the basis of specific behaviour

and contributes to the development of attitudes (Steenekamp, 1984). The teachers were also given the opportunity to state their needs and to make recommendations for further training.

The following sections therefore appeared in the questionnaire:

Section A: Biographical information

Section B: Knowledge of the teacher in respect of the following

- Inclusive education

- The child with hearing loss

- Classroom accommodation/modification to accommodate the child with hearing loss in inclusive education

The reasons for including the above-mentioned sections in the questionnaire are set out in Table 4.1.

Table 4.1 Design and composition of Questionnaire 1: Knowledge questionnaire

QUESTIONS	SECTION	REASON FOR INCLUSION IN QUESTIONNAIRE	ADDITIONAL INFORMATION
Section A: Questions 1-12	Biographical information: Gender, age, language, qualifications, training, experience, class composition	Background information of the teachers is relevant for description of the research sample. This information also enables the researcher to compare the knowledge of different sub-groups on the basis of their years of teaching experience, personal experience with hearing loss and their willingness to teach a child with a hearing loss.	Closed questions were used to acquire relevant information. In the case of subjects' age, qualification, class composition, years of experience and number of children with hearing loss in the classroom, open questions were used. Categories were compiled at a later stage.
Section B: Questions 1-5	Inclusive education	The publication of White Paper No. 6 regarding inclusive education introduced a new era in the South African education system. A heterogeneous pupil population that holds specific implications for the current teaching situation now confronts teachers. Knowledge about 'inclusive education' is important to understand their own role in the process and enable them to react to the diverse needs of learners with specific educational needs. "Classroom educators will be our primary resource for achieving our goal of an inclusive education and training system. This means that educators will need to improve their skills and knowledge, and develop new ones" (Department of Education, 2001:18).	A scenario was described after which the research subjects' knowledge was evaluated by 5 closed (yes/no/uncertain) questions, based on the given scenario.
Questions: 6-20	The child with a hearing loss	Placing a child with a hearing loss in an inclusive teaching system is a complex process, based on the heterogeneous nature of the population with hearing problems and their unique needs. "To teach students to meet their own cognitive, affective, communicative, and physical needs, we need to understand what needs drive their behaviours" (Sands, Kozleski & French, 2000:195). The teaching of a child with hearing loss therefore not only includes the development of his language and communication skills, but also involves the child in total, i.e. his social, emotional, family problems, etc. Knowledge of the results/implications	The subjects' knowledge in this respect was determined by 15 closed questions (true/false/uncertain) that were preceded by a description of a specific scenario.

		of a hearing loss is important in order to ensure that the child is fully understood, so that this knowledge can be applied in the planning and implementation of any academic activity (Sanders, 1982:5).	
Questions: **21-31**	Classroom accommodation and modification for the child with a hearing loss	"It appears to be critical that classroom teachers have a basic understanding of their students' hearing loss and how best to learn them in order to provide success in the classroom" (Blair, Eudaly & Von Almen, 1999:174). The practicalities of adapting classrooms to accommodate the needs of the child have now become the responsibility of the teachers (Hall et al., 1999). To be adaptable, innovative and creative, knowledge in this respect is indispensable (Lomofsky, Roberts & Mvambi, 1999:94).	The teachers' knowledge of this these aspects was determined by means of 10 closed questions.

4.4.2.1.2 Questionnaire 2 – Attitude questionnaire (Appendix E)

"Since teachers are the people who make learning possible, their own attitudes, beliefs and feelings with regard to what is happening in the school and in the classroom are of crucial importance" (Lomofsky, Roberts & Mvambi, 1999:70). Teachers have to be sensitive not only to the requirements of learner with special educational needs, but also to their own attitudes and feelings. Only then can the question of attitude be fully addressed in order to support the teacher in the process of change (Lomofsky, Roberts & Mvambi, 1999:70).

An existing questionnaire entitled the Interaction with Disabled Persons Scale (as used by the Department of Orthopedagogics of the University of Pretoria) was adapted to determine the attitudes of the teachers towards several aspects concerning the child with hearing loss in inclusive education.

The following sections therefore appeared in the questionnaire:

Section A: Biographical information

Section B: Attitude of the teachers in respect of the following:

- Inclusive education for the child with hearing loss

- The child with hearing loss

- Classroom accommodation/modification to accommodate the child with hearing loss in inclusive education

Section C: Specific training needs of teachers in respect of further training

Reasons for including the above sections in the questionnaire, as well as additional information, are set out in Table 4.2.

Table 4.2 Design and composition of Questionnaire 2: Attitude questionnaire

QUESTIONS	SECTION	REASON FOR INCLUSION IN QUESTIONNAIRE	ADDITIONAL INFORMATION
Section A: Questions 1-12	Biographical information: Gender, age, language, qualifications, training, experience, class composition	Background information of the teachers is relevant for description of the research sample. This information also enables the researcher to compare the knowledge of different sub-groups on the basis of their years of teaching experience, personal experience with hearing loss and their willingness to teach a child with a hearing loss.	Closed questions were used to acquire relevant information. In the case of subjects' age, qualification, class composition, years of experience and number of children with hearing loss in the classroom, open questions were used. Categories were compiled at a later stage.
Section B: Questions 1-14, 19-21, 25	Attitude towards inclusive education of child with hearing loss	The successful inclusion of the learner with special educational needs depends on the teacher's attitude towards such learners and their resulting behaviour in the inclusive educational context (Lomofsky, Roberts & Mvambi, 1999;70). Determining their attitude towards the philosophy of inclusion is important not only for developing an understanding teachers' attitude towards the change, but also for isolating the stress-causing factors associated with inclusive education. The positive participation of teachers in establishing the inclusive system can be promoted by paying attention to these aspects (Lomofsky et al., 1999;95).	Closed questions with the choices 'agree/uncertain/disagree' were used here. Questions 1-3, 4, 7, 9, 11-14 and 25 were coded inversely due to the formulation of question content.
Questions 15–18	Attitude towards the child with hearing loss	"Educational reconstructuring begins with the way children are viewed" (Lipsky & Gartner, 1986:256). The attitude of the teacher towards the child plays an important role in the success of inclusive education (Wood, 1998:148). Besides understanding and a positive attitude towards the special needs of children with hearing loss, the child must also be fully accepted. The attitude of the teacher is the major catalyst that affects interaction and achievement (Wood 1998:148).	The subjects' attitudes towards the child with hearing loss were determined by means of four closed questions.

Questions 22-24, 26-30.	Attitude towards classroom accommodation/ modification	"…teachers in South African schools are currently being expected to make major changes in the way they understand teaching and learning in the process of adapting…" (Lomofsky et al., 1999:70). They may need support to be able to focus on the positive aspects regarding classroom adaptations and adaptations in teaching strategies in order to accept the change.	Closed questions were used to determine the attitudes of the subjects regarding this aspect. Questions 23-28 were coded inversely due to the formulation of question content.
Section C: Questions 36-45	Further training	"When educators are asked to change their ways of thinking, working and reflecting on their environment, they may tend to feel inadequate, insecure or frustrated. They may feel the need for training, information and support." (Department of Education - Directorate: Inclusive Education, 2002).	One closed question (order of preference) as well as two open questions were used to obtain all possible information about the subjects' opinion and needs in respect of further training.

4.4.2.2 Construction of questionnaires

To ensure that the research objective is achieved, it is important that the questionnaires be constructed with great care. Guidelines as provided by Babbie and Mouton (2002: 233-249), Steenekamp (1984:1-47) and Neuman (2000:253-272) with regard to aspects such as objectivity, clarity, relevance, unambiguity and consideration towards the research subjects, were constantly kept in mind.

Throughout the construction of the questionnaires, attention was given to the following practical aspects:

➢ **The cover letter**

A carefully written, dated cover letter may improve return rates and response accuracy more than any other single factor (Neuman, 2000:269).

Two cover letters (Appendices A and B) addressed to the principals, teachers and students involved were used in the study. These letters included the following:

- Introduction of the researcher

- The aim of the research project

- Importance of the study

- Assurance of anonymity

- An informed consent tear-off slip to be completed by the teachers / students and principals

- Relevant information regarding the completion of the questionnaires

➢ **Introductory paragraph**

It is important that the subject be given the opportunity to form a good grasp of the topic in order to make a free and informed choice about participation. With this objective in mind, an introductory paragraph was included with each questionnaire, briefly stating the following:

- The importance of reliable information provided by each subject

- The role and responsibility of the subject

- Assurance of anonymity and confidentiality

- The subject's right to privacy (the right to refuse to participate)

- The right to full disclosure about research (informed consent)

➢ **Question types**

Questionnaire 1, consisting of knowledge questions, included two types of response categories i.e. '*yes (agree) / uncertain / no (disagree)*' as well as '*true / uncertain / false*'. Two open questions were also included.

Questionnaire 2, consisting of questions regarding attitude, included a single-response category, namely '*I agree (yes) / uncertain / I disagree (no)*'.

Closed questions were used primarily, as they are clearly structured, as well as easily arranged (ranked) and processed (Neuman, 2000:260). The disadvantage of this type of question is that it does not always include all categories of possible answers (Neuman, 2000:260). To obviate this problem, the questions (statements) were formulated in such a way that the subjects could merely indicate whether they agreed or not and whether the statement was true or not. These pre-formulated categories

made all feasible responses possible and ensured that the survey would succeed in determining all the frequencies in the separate categories (Steenekamp, 1984:30). Multiple-choice questions that offer several categories as answers to the question (statement) were not used.

Two open questions were included to obtain each teacher's personal opinion, e.g. regarding suggestions for further training.

During the construction of the questionnaires preference was given to the '*True / False*' and to the '*Yes / No*' and '*Agree / Disagree*' answer options. Devising an answer category for the teacher who did not have the required knowledge or who was uncertain about a specific aspect was initially problematic. According to Steenekamp (1984:31), the use of '*Uncertain*' or '*Don't know*' as an option in a questionnaire is undesirable as many respondents regard it as an easy way out. On the other hand, respondents are often genuinely not capable of providing a response to a question/statement because they simply do not have the knowledge to make a decision or take a stand. Forcing the teacher to decide by omitting the *'uncertain'* category is therefore not a good option (Neuman, 2000:262), and to supply these teachers with an answer category, it was decided to include the '*uncertain*' option. If dealt with correctly, this option causes no problems in descriptive research for it simply represents a frequency in the category (Steenekamp, 1984).

➢ **Formulation of questions**

According to the available literature (Babbie & Mouton, 2002:233-239; McBurney, 1994:195-199; Neuman, 2000:251-255), specific basic principles such as the following should be kept in mind throughout the formulation of the questions:

- Formulating relevant questions

- Using one statement per item (question)

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- Avoiding prejudice in style of statements and choice of words

- Providing clear, unambiguous formulation

- Limiting the length of items (questions)

- Providing precise translations

➤ **Format**

The format of the questionnaire, in other words the way in which the questions are presented, is of great importance to the success of the research process (Babbie & Mouton, 2001:233). Knowledge questions on the same topic were therefore grouped together and preceded by a given scenario. This design of the questions not only facilitated the analysis of the data, but also enabled the subjects to apply their knowledge to the specific scenario. Further important aspects to receive attention were the following (McBurney, 1994:197):

- Clearly formulated instructions

- Spacing of items

- The use of grids for responses

- The succession of related questions

> ➢ **Instructions**

*"*Every questionnaire ... should contain clear instructions and introductory comments where appropriate*"* (Babbie & Mouton, 2002:243). At the start of the questionnaire respondents were requested to answer all questions as comprehensively as possible and also to mark the applicable answer with a cross in the appropriate grid block. In the case of those questions where a different type of response was expected from the respondent, the instructions preceded the question(s). The intelligibility and clarity of the instructions were evaluated during the pilot study, after which the necessary changes were made to ensure that respondents would understand exactly what was required of them.

4.4.3 PILOT STUDY

4.4.3.1 Aim of the pilot study

Huysamen (in Strydom, 2000:211) regards the aim of the pilot study as "...an investigation of the feasibility of the planned project and to bring possible deficiencies in the measurement procedure to the fore".

Due to the theoretical origin of the questionnaires used in this study, it was of great importance to perform a pilot study in order to determine the usefulness and feasibility of the questionnaire in terms of the intelligibility/clarity of the terminology, specific focus of each question, relevance and applicability of content, intelligibility of instructions, format of the questionnaire, ease of coding, time required for completion and the strategies envisaged for analysis.

The results of the pilot study were used to finalise the questionnaires.

4.4.3.2 Schools selected for pilot study

Afrikaans and English primary and pre-primary schools were included in the pilot study, since schools of both languages were to be included in the main study. Although certain schools were used in both the main and pilot study, the actual persons involved in the pilot study were not included in the main study again.

4.4.3.3 Procedures

Questionnaires were handed to six staff members who completed them in the presence of the researcher. Afterwards the questionnaires were discussed on the basis of specific criteria.

4.4.3.4 Results and recommendations

The procedures, results and recommendations resulting from the pilot study are displayed in Tables 4.3 and 4.4.

Table 4.3 The aims, results and recommendations of the pilot study: knowledge questionnaire

AIMS	PROCEDURES	RESULTS	RECOMMENDATIONS
1. Evaluate the intelligibility / clarity of the terminology	Teachers completed questionnaires in the presence of the researcher. Discussion	During the discussion, teachers indicated that all terms were clearly intelligible.	No changes were made.
2. Evaluate the specific focus of each question	Teachers completed questionnaires in the presence of the researcher. Discussion	The teachers mentioned that the first two questions of the questionnaire (Section B, questions 1 and 2) were not clearly formulated and could cause confusion. They also asked for an 'uncertain' option to be provided.	Questions 1 and 2 in section B were reformulated. Furthermore, questions were provided with an 'uncertain' option to make more options available to the subjects.
3. Evaluate the relevance and applicability of content	Teachers completed questionnaires in the presence of the researcher. Discussion	All questions were regarded as relevant and appropriate.	No changes were made.
4. Evaluate the intelligibility of the instructions	Teachers completed questionnaires in the presence of the researcher. Discussion	The teachers stated that the instructions were well formulated and intelligible. It was indicated that the creating of scenarios assisted in the application of their knowledge.	No changes were made.

5. Evaluate the format of the questionnaire	Teachers completed questionnaires in the presence of the researcher. Discussion	Teachers requested that column headings be repeated on each page to avoid paging back and forth to check response options.	All given options (Yes; Uncertain; No) were repeated at the top of each page.
6. Test the ease of coding	The researcher coded the questionnaires and discussed the results with a statistician.	Possible coding problems were identified by the statistician (question 1 of section C). A change of the formulation was recommended.	The question involved (question 1 in section C) provides relevant information concerning the research subjects' training preferences and had to be retained. The instructions were reformulated to ease the coding.
7. Evaluate the time needed for completion	Teachers completed questionnaires in the presence of the researcher. Discussion	Time required for completion was approximately 15 minutes. According to the teachers this was a reasonable time, especially given the number of different aspects covered by the questionnaire.	No changes were made.
8. Test the strategies envisaged for analysis	Processing and analysis of data.	Strategies for processing the data were tested and evaluated by the statistician.	No changes were made.

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Table 4.4 The aims, results and recommendations of the pilot study: attitude questionnaire

AIMS	PROCEDURES	RESULTS	RECOMMENDATIONS
1. Evaluate the intelligibility / clarity of the terminology	Teachers completed questionnaires in the presence of the researcher. Discussion	During the discussion teachers indicated that all terms were clearly intelligible.	No changes were made.
2. Test the spesific focus of each question	Teachers completed questionnaires in the presence of the researcher. Discussion	The teachers mentioned that the 'uncertain' option could possibly be restrictive.	Questions were provided with an 'uncertain / maybe / sometimes' option to enable the subjects to make more definite choices.
3. Evaluate the relevance and applicability of content	Teachers completed questionnaires in the presence of the researcher. Discussion	All questions were regarded as relevant and appropriate.	No changes were made.
4. Evaluate the relevance and applicability of content	Teachers completed questionnaires in the presence of the researcher. Discussion	The teachers stated that the instructions were well formulated and intelligible.	No changes were made.
5. Evaluate the format of the questionnaire	Teachers completed questionnaires in the presence of the researcher. Discussion	Teachers requested that column headings be repeated on each page to avoid paging back and forth to check response options.	All given options (Yes; Uncertain; No) were repeated at the top of each page.

6. Test the ease of coding	The researcher coded the questionnaires and discussed with a statistician.	No problems were found in this case.	No changes were made.
7. Evaluate the time needed for completion	Teachers completed questionnaires in the presence of the researcher. Discussion	Time required for completion was approximately 15 minutes. According to the teachers this was a reasonable time, especially given the number of different aspects covered by the questionnaire.	No changes were made.
8. Test the strategies envisaged for analysis	Processing and analysis of data	Envisaged strategy for processing the data was tested and evaluated by the statistician.	No changes were made.

4.4.4   Data collection procedures

- The principals of the schools involved, as well as the lecturers of the tertiary institution were contacted telephonically beforehand to explain the rationale and importance of the study. Permission was also obtained to visit the school/tertiary institution for the completion of the questionnaires

- These telephone calls were followed by a letter explaining the finer detail of the study and thanking the principal/lecturers for their co-operation.

- Contact was maintained with the schools/tertiary institution in order to solve any practical problems that might occur.

- Questionnaires were personally delivered at the schools on the agreed date and time.

- The questionnaires were completed in the presence of the researcher.

- The questionnaires were encoded and the data captured for statistical processing.

4.4.5   Data analysis

This procedure involved the recording and analysis of the collected data.

All data as collected on the questionnaire, was coded in the appropriate column for statistical processing. Processing was done at the University of Pretoria, using the Statistical Packages for Social Sciences programme. For the quantitative analysis of data relating to sub-aims 4.2.1 and 4.2.2, frequency tables were used to determine the

performance of the sample (Neuman, 2000:317). Descriptive statistics, consisting of the tabulation of the data and the calculation of descriptive magnitudes were applied in such a way that the trends and properties of the observed data became apparent (De Vos, Fouche & Venter, 2002:226). The t-test for independent groups was used to determine whether there were significant differences between the results of separate groups of respondents with regard to teaching experience, personal experience and willingness to include a child with hearing loss. An analysis of variance (ANOVA) was used to compare the knowledge and attitudes of the three subgroups of respondents (McBurney, 1994:435)

The data obtained in response to sub-aim 4.2.3 was analysed by means of a qualitative content analysis (Babbie & Mouton, 2002:490).

4.4.6   Trustworthiness of quantitative research

Research is only as good as the trustworthiness of the data used. Several strategies exist to enhance trustworthiness, all of which are determined by the aim and nature of the research. In phase 1 of the study, special attention was given to validity, reliability and objectivity as parameters of trustworthiness. The efforts made to enhance the trustworthiness of phase 1 of the study are set out in Table 4.5.

Table 4.5 Strategies used to enhance trustworthiness of phase 1 of the study

STRATEGY	TYPE	TECHNIQUE	APPLICATION OF THE TECHNIQUE IN THIS STUDY
Validity **"Validity refers to the extent to which an empirical measure adequately reflects the real meaning of the concept under consideration" (Babbie, 2004:143)** **Known as credibility in qualitative research**	Content validity The extent to which the items of the measurement instrument reflect the theoretical content domain of the construct being investigated	Define the specific construct and specify the theoretical content areas that it implies	Scrutinising the relevant theory and similar studies already performed. Definition of 'knowledge' and 'attitude' in terms of the role of the teachers of the child with hearing loss in inclusive education. Determining the content areas implied, e.g. knowledge / attitude relating to inclusive education.
		Determine items relevant to specific content areas	Use of the theory to determine areas relevant to each content area.
		Select the most representative items of each content area	Use of own judgement and experts in the discipline to select items that can best determine the knowledge and attitude of the teacher of the child with hearing loss in inclusive education.
	Construct validity "The degree to which a test (questionnaire) measures the theoretical construct or abstract it was intended to measure" (Struwig & Stead, 2001:141)	Pilot study	A pilot study was conducted and the researcher was present throughout the completion of the questionnaires to provide the necessary explanations as required and to get feedback from the participants.
	Criteria-related validity The extent to which the results of a measurement instrument are compared to another independently valid criterion	Comparison to existing theoretical criteria	The supposed knowledge of the teacher as indicated in the theory and in similar questionnaires was used to enhance the criterion-related validity.

STRATEGY	TECHNIQUE	APPLICATION OF THE TECHNIQUE IN THIS STUDY
Reliability **"...an instrument is reliable to the extent that independent administrations of it or a comparable instrument consistently yield similar results" (De Vos & Fouche, 1998:85).** **Known as dependability in qualitative research**	Clearly conceptualise all constructs	Developing unambiguous, clear theoretical definitions for all constructs. Care was taken to ensure that each measure indicated one, and only one concept.
	Use of multiple indicators of a variable	Two or more indicators of the same construct were used.
	Use of a pilot study	To enhance the dependability of the questionnaire, it is important that all questions are relevant and well formulated (Babbie, 2004:248). To ensure this, it was attempted (by means of a pilot study) to enhance the dependability of the study. Where necessary, questions that were not relevant were omitted, terminology was replaced with better-known terms, some questions were formulated more clearly and changes were made to some response categories to include all possibilities.
Objectivity **Known as confirmability in qualitative research**	Independent judgement of quantitative procedures	An independent neutral researcher, also an expert in the specific research area, was approached for an opinion on the extent to which the quantitative part of the research complied with accepted research practice.

Compiled from: Neuman, 2000:164-170; Struwig & Stead, 2001:130-132; Babbie & Mouton, 2002:118-124; McBurney, 1994:119-124; Delport, 2002:166-169.

4.5   MAIN STUDY: PHASE 2

This phase of the research comprised the determination of the demands (including pertaining to knowledge and attitude) made on the teachers of a child with hearing loss in inclusive education (sub-aim 4.2.3). As indicated in the description of the research phases (refer to Figure 4.1), this phase included the use of focus groups as a research instrument in order to comply with the qualitative nature of the research design.

4.5.1   Definition of focus groups

The American sociologist, David Morgan, describes focus groups as follows:

"As a form of qualitative research, focus groups are basically group interviews, although not in the sense of an alternation between a researcher's questions and the research participants' responses. Instead, the reliance is on interaction within the group, based on topics that are supplied by the researcher who typically takes the role of the moderator. The hallmark of focus groups is their explicit use of group interaction to produce data and insights that would be less accessible without the interaction found in a group" (Morgan, 1997:2 in Field, 2000:324)

Thus, a focus group is practically an 'in-depth group interview' (Goldman, 1962 in Stewart & Shamdasani, 1990:10). In this case a 'group' refers to a number of interacting individuals on the basis of a common interest in a particular subject. 'In-depth' suggests a search for information with greater depth (more substantial/fundamental information) than would normally be obtained on an interpersonal level. The term 'interview' implies the presence of a moderator using the group as an 'instrument' to obtain more information. In the term 'focus group', the word 'focus' indicates that the content of the interview is limited and directed at a small number of issues (Stewart & Shamdasani, 1990:10).

4.5.2   Motivation for the use of focus groups in this study

Focus groups were used in this study to facilitate and extend the interpretation of the qualitative data of phase 1 and to obtain the necessary depth with regard to critical aspects (Stewart & Shamdasani, 1990:11). The method not only generates large amounts of data in a limited time, but is also suitable for examining participants' experiences and perspectives. In this study it was especially important to highlight these aspects as opposed to the quantitative data about the teachers' knowledge and attitude. On the basis of the interaction between the participants, more valuable data could be obtained than would have been the case with individual interviews (Morgan, 1988 in Wesley & Buysse, 1997:2). The data as obtained from focus groups lent itself to meaningful integration with data obtained from phase 1 of the research.

The following advantages of focus groups also served as motivation for their use as a research tool (Stewart & Shamdasani, 1990:16; Greeff, 2002:306):

- The direct interaction of the researcher with the participants provides the researcher with valuable opportunities for follow-up questions, clarification of responses and for the probing of responses. Participants can rephrase their responses, explain and react to follow-up questions. The researcher also has the valuable opportunity to observe non-verbal responses such as gestures, facial expressions, etc, thus obtaining supplementary information.

- The open response format of a focus group ensures that a large and rich amount of valuable data can be obtained from the respondents' own words

- Participants have the opportunity to react to and build upon the responses of other participants. Thus the synergistic nature of the group produces data not necessarily obtainable in individual interviews.

- Focus groups are flexible and can be used to investigate a wide variety of topics with a variety of individuals.

- The results of focus groups are easy to understand.

Even though using focus groups appears to be a valuable research instrument, several limitations are inherent (Stewart & Shamdasani, 1990:17):

- The small number of respondents participating and the use of a sample of convenience limit the generalisation of the conclusions when applied to the greater population.

- The patterns of interaction between the respondents in the focus group and the researcher can be detrimental to the generalisation of the results, since the responses of the participants are not independent from one another. The result can also be influenced by the bias of a dominant participant.

- The open-ended nature of the responses obtained from a focus group can often encumber the interpretation of results.

- The bias of the moderator can result in the inadvertent provision of cues in terms of desirable responses / answers.

Considering the aim of the study, it was decided that the advantages of this method outweigh the disadvantages mentioned. In the first place, other research methods do not offer the opportunity for both the researcher and respondent to learn from the process (Field, 2000:2). A second consideration was that the use of focus groups better supported the theoretical framework of this phase of the study.

4.5.3   Research subjects

4.5.3.1 Composition of focus groups

As recommended by qualitative researchers (Greenbaum, 2000:49; Morgan, 1998b:56; Stewart & Shamdasani, 1990:34), participants were selected on the basis of their knowledge, involvement and experience of a particular aspect – in this case the child

with hearing loss in inclusive education.

Purposive sampling was used in this phase of the study in order to attain specific aims. This type of sampling differs from the sampling used in phase 1 of the research in the sense that there are fundamental differences between the aims of the questionnaire and focus group (Morgan, 1998a:12). The aims of the two questionnaires were to determine the knowledge and attitudes of a number of subjects currently in the education system. No preset criteria concerning experience of the child with hearing loss were used to select only certain students and teachers. In the case of focus groups, the aim was to develop insight and understanding for the teacher involved with a child with hearing loss in inclusive education.

As a starting point, an existing list of children with cochlear implants, obtained from the Cochlear Implant Team of the University of Pretoria, was used. The reason for this was that several of these children were placed in inclusive environments. Based on their involvement, the parents of these children could make valuable contributions concerning the demands on the teacher. Teachers who had taught such a child in their classrooms for at least a year were also involved. In addition, five speech therapists/audiologists were included on the basis of their primary involvement with individuals with hearing loss and their experience with these children in an inclusive setting.

Several aspects concerning the size of the group were borne in mind by the researcher. The typical size of a focus group is between six and ten participants (Morgan, 1998b:72). Some researchers (Stewart & Shamdasani, 1990:57) agree that fewer than six participants would impair the quality of the discussion. However, this should not be the case should the researcher take care when planning the focus group and the structure of the discussion (Morgan, 1998b:74). The following factors obliged the researcher to consider smaller focus groups in this study (Morgan, 1998b:74; Krueger, 1995:4):

- High level of involvement with the topic, implying that each participant be given

adequate opportunity to make a meaningful contribution.

- Emotional involvement of participants with the topic under discussion.

- Expert knowledge of the subject by participants.

- Complex and/or controversial nature of the topic.

- The opportunity to share personal experience with other participants.

These factors obliged the researcher to limit the size of the focus groups to six participants.

Biographical information with regard to the participants involved in the focus group discussion is displayed in Table 4.6 below:

Table 4.6 Biographical information of focus group participants

Focus group 1: Parents

Gender	Age of child	Years in inclusive education
Female	13	7
Male	13	7
Female	12	6
Male	12	6

Focus group 2: Speech therapists/audiologists

Gender	Number of years involved with children with hearing loss in inclusive education
Female	10
Female	10
Female	6
Female	4
Female	6

Focus group 3: Teachers

Gender	Number of years' involvement with children with hearing loss in inclusive education
Female	4
Female	5
Female	1
Female	3

As these participants were selected from a specific geographical and educational area, this could result in the data being biased. The author admits the fact that the participants are not a fully representative sample of parents, speech therapists/audiologists and teachers involved in inclusive education. However, though this data is limited in terms of generalisability, it provides a qualitative focus and useful information regarding the demands posed to the teacher of the child with a hearing loss in inclusive education.

4.5.4 Research material

All the groups participated in a semi-structured group interview that was based on a 'discussion guide' and lasted 90 to 120 minutes. The so-called discussion guide refers to a research instrument used by the researcher to direct the discussion.

4.5.4.1 Objective of the discussion guide

The use of a discussion guide is of primary importance in ensuring the success of the focus group discussion. It is not only useful to direct the flow of the discussion (Greenbaum, 2000), but it also ensures that all-important aspects as determined by the research question are included (Krueger, 1998a). Its use in successive discussions ensures consistency that eventually also facilitates analysis, since it constrains subtle differences that could change the content of the responses (Krueger, 1998a). The researcher can also effectively apply the guideline as an outline when writing the final report (Greenbaum, 2000).

4.5.4.2 Composition of the discussion guide

The structure of the discussion guide was based on Krueger's (1998a) recommendations. Different types of questions were used at different times in the focus group and each question had a specific aim. There were five categories of questions, each of which played an important role in the flow of the discussion. The categories, questions and aims with their objectives, are set out in Table 4.6.

Table 4.6 Composition of the discussion guideline

CATEGORY OF QUESTION	AIM OF CATEGORY / MOTIVATION FOR QUESTIONS	QUESTION		
		Parents	Speech therapists / Audiologists	Teachers
Opening question	Introduction of participants. Participants become acquainted and feel connected.	Introduce yourself and shortly say what you mostly enjoy about your child at this stage.	Introduce yourself and say what you favourite pastime is.	Introduce yourself and say what you favourite pastime is.
Introductory question	Focus the attention on the topic under discussion.	What do you think of when you hear the term 'inclusive education'?		
Transition question	Guide the discussion in the direction of the key questions – tie the participant to the topic of discussion.	How did you feel on the first day when your child started school in an inclusive setting?	How do you feel about the speech therapist's/ audiologist's role in the inclusive setting?	How did you feel when you first realised that you had to teach a child with a hearing loss?
Key questions (2-5 questions)	Key questions drive the study. The researcher uses these questions to obtain insight into central issues in the study. The questions are ranked from more general questions to more specific questions. The aim is to first create a context, i.e. the child with hearing loss in the classroom. Subsequently the emphasis is placed on the implications of the above-mentioned to the teacher.	1. What would you regard as the needs of the child with hearing loss in the classroom? 2. What changes are needed to accommodate this child in the classroom? 3. What demands do these changes make on the knowledge and skills of the teacher? 4. What additional aspects could influence the responsibilities of the teacher of the child with hearing loss?		
All-things-considered question	These questions bring closure to the discussion, enabling participants to reflect on previous comments.	Which aspect would you regard as most important to be addressed in supporting the teacher?		
Summary question		(Responses are briefly summarised) Is this an adequate summary?		
Final question		Have we missed anything?		

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4.5.5 Pilot study

4.5.5.1 Aim of the pilot study

"Pre-testing of the interview provides an opportunity to determine whether the wording of questions is appropriate, to determine whether the questions elicit discussion, and to identify questions that are understood easily" (Stewart & Shamdasani, 1990:66).

A pilot study to determine the utility and feasibility of the discussion guide is not a requirement in the use of focus groups (Stewart & Shamdasani, 1990:66). The reason for this is that the discussion guide is only one part of the research instrument; the group itself and the moderator are also important elements and can obviously not be included in the pilot study (Krueger, 1998b:58). The research instrument can therefore not be fully tested by means of a pilot study (Stewart & Shamdasani, 1990:66).

Despite this, it was decided – based on the limited number of discussion groups used by the researcher – to go ahead with a pilot study to ensure that the discussion guide was at least workable and feasible.

Krueger (1998b:57) recommends that the first focus group discussion may serve as a pilot study, based on which the researcher can then make necessary changes. This is, however, time-consuming, not cost-effective and does not contribute to results unless the researcher has many groups at his/her disposal. The researcher may nevertheless consider other options such as the use of other researchers, experts in the discipline or potential participants to evaluate the feasibility of the discussion guide (Krueger, 1998b:59).

Bearing in mind that the number of discussion groups in this study was limited to three groups, it was decided to use experts in the discipline (teachers) currently employed at a private inclusive school for children with hearing loss.

4.5.5.2 Procedures

The researcher handed the questions in the discussion guide to the six teachers, after which each question was discussed according to specific criteria, namely the intelligibility / clarity of the terminology, the formulation of the individual questions, the applicability and relevance of the content, and the format of the discussion guide in terms of the order of the questions.

4.5.5.3 Results and recommendations

The revision of the discussion guide necessitated only a single change to the formulation of the last key question in order to limit uncertainty in the responses thereto. The particular key question was changed from "Which other aspects influence the role and responsibilities of the teachers of the child with hearing loss?" to "Which additional aspects influence the responsibilities of the teacher of the child with hearing loss?"

4.5.6   Data collection procedure

The following procedures, based primarily on the literature (Krueger, 1998b:15-35; Stewart & Shamdasani, 1990:87-101; Greenbaum, 2000:125-156) and combined with practical considerations, were followed to ensure the success of the focus group discussions.

- Potential participants were contacted by telephone to explain the rationale and the procedures of the study.

- The date, time and place for the meeting of the focus group discussion were agreed upon.

- Appointments were confirmed 24 hours before commencement of the

discussion.

- The focus group discussions were held in a quiet venue at the Department of Communication Pathology at the University of Pretoria.

- The venue was prepared in advance by the placement of a video camera and a cassette recorder. The aim was to enable the moderator to focus on the responses of the participants and to facilitate the discussion, without having to continuously make field notes.

- Participants were met in the foyer and offered light refreshments.

- The moderator, in order to motivate the aim of the discussion and also to explain the structures and guidelines associated with it, commenced the focus group discussion with a short introduction. Anonymity of the participants and the confidentiality of the results were assured. Informed consent was obtained from each participant.

- The introduction was followed by the questions as indicated in the discussion guide. (Refer to Table 4.6.)

- During the conversation, the moderator facilitated the discussion by encouraging participation, asking the questions and providing explanations where needed. Several key factors identified in the literature (Greenbaum, 2000:144-156) as integral elements of focus groups contributing to the effectiveness of this methodology as a universally accepted research approach, were implemented throughout. These elements and the ways in which they were implemented in the focus group discussions, are shown in Table 4.10.

- At the end of the discussion the moderator presented a verbal summary of the content of the discussion, to which the participants could react by means of remarks, additions or corrections if necessary. The participants were given an opportunity to ask questions.

- The discussions were transcribed in full.

Table 4.7 Implementation of integral elements of focus groups

INTEGRAL ELEMENTS	IMPORTANCE	IMPLEMENTATION
The authority of the moderator	It is important that the moderator be the so-called 'leader' of the session. If this is not the case, the effectiveness of the group is seriously impaired. A moderator incapable of controlling the group is incapable of ensuring the quality of the group's output.	The moderator acted as leader throughout the discussion and directed the participants in terms of the content areas discussed. Asking the opinions of every participant ensured involvement of all participants.
Acceptance of verbal and non-verbal inputs as part of the learning process	Focus groups constitute the only research technique that enables the researcher to follow up unintended / incidental reactions of participants and to further explore the specific topic under discussion.	As the focus group process uses face-to-face interaction, both the moderator and the participants could react to the verbal and non-verbal responses of all members of the group. The moderator attempted at all times to be attuned to the verbal and non-verbal responses of participants and to follow them up in order to delve further into a particular topic of interest.
Group dynamics	The participation of all group members at the venue contributes to exceptional group dynamics. Effective use of group dynamics enables the moderator to encourage those holding the same opinion to persuade those who have an opposing perspective and vice versa. The quality / richness of the information acquired in this way is enhanced as each side draws on more reasons for its view.	The moderator worked hard to encourage the discussion so that the opinions of every participant could be shared with the others, which hopefully would have encouraged reactions and interactions. As a result, certain issues emerged from the discussion that would not have been the case in one-to-one interviews. Participants were also encouraged to write down their ideas, as research shows that subjects respond more comfortably and with more confidence when they have something in writing.
Concentrated attention of the participants	Undivided attention directed to the specific topic area contributes to the acquisition of a better quality of information than would have been the case with for instance telephonic discussions where several things could have diverted the attention of an individual.	The participants knew beforehand that they would be involved in a discussion for approximately 2 hours. During this time the participants sat in a room and had no opportunity to be involved in anything other than the discussion. Their attention was therefore directed to the specific topic area for the full length of the discussion.

Safety in numbers	The knowledge that all participants are similarly affected by the topic under discussion gives the individual a feeling of safety / security and contributes to unconditional participation.	As indicated, purposive sampling was used to ensure that all participants of the separate groups were in some way involved with a child with hearing loss in inclusive education, i.e. parents, therapists/audiologists and teachers.
Control over security	The researcher can ensure that by determining selection criteria no undesirable participants are included.	Participants were selected on the basis of their involvement with children with hearing loss in inclusive education.

Compiled from Greenbaum (2000:9–14)

4.5.7   Data analysis procedures

Focus group data is distinct from other forms of qualitative data and therefore the interactive nature was taken into account at all stages of analysis (Greef; 2002:318). A full and thorough transcription was made, including all speakers and all speech, even that which was unfinished or interrupted. Once transcribed, data was indexed to bring under one heading all data relating to a particular theme. The researcher remained aware of the context of any extract of speech and followed the arguments of individuals through the transcript. The content of every theme was examined in order to discover the meaning and its particular implications for the research question (Stewart & Shamdasani, 1990:105-108).

4.5.8   Trustworthiness of qualitative research

The efforts made to enhance the trustworthiness of phase 2 of the study, are displayed in Table 4.8.

Table 4.8 Strategies used to enhance the trustworthiness of phase 2 of the study

STRATEGY	TECHNIQUE	APPLICATION OF TECHNIQUE IN THIS STUDY
Credibility **"Is there compatibility between the constructed realities that exist in the minds of the respondents and those that are attributed to them?"** **(Babbie & Mouton, 2002:277)**	Descriptive credibility – whether the information provided is factually accurate and comprehensive	An in-depth literature study was done to ensure the credibility of the theoretical underpinning of the study. The parameters of the qualitative research phase were clearly determined. Additionally, at the end of each session, the researcher required the research subjects to give their opinion on the accuracy of the data acquired. An in-depth discussion of the interaction and complexity of the focus group discussions (Chapter 5) contributes to the credibility of the study.
	Interpretative credibility (member checking)	At the end of the focus group discussions the moderator summarised the content. Participants' opinions were obtained regarding the accuracy of their own perspectives and use of language, rather than the interpretation and terminology of the researcher.
	Triangulation Method of triangulation	Several methods of triangulation were applied: A between-methods triangulation was used as the researcher obtained qualitative data (from questionnaires) as well as quantitative data (from focus groups).
	Data triangulation by using several sources	Various data sources (participants) were used in the acquisition of the data. By purposeful sampling the researcher identified all the different persons involved with the child with hearing loss in inclusive education, namely parents, teachers and speech therapists / audiologists.
	Analysis triangulation	Both qualitative and quantitative approaches were used in the analysis of the data.
	Multiple triangulation	The use of more than one method of triangulation contributed to the validity of the data. A more comprehensive idea was obtained of the phenomenon being investigated.

	Peer debriefing	A colleague who was not involved in the context of the research but who nevertheless understood the nature of the research, acted as devil's advocate. This person questioned the researcher about several aspects concerning the research. The researcher had the opportunity to discuss constraints, problems, etc.
	Referential adequacy	During the focus group discussion, video and audio recordings were made as well as extensive field notes were kept in order to document the findings.
Transferability **"The extent to which the findings can be applied in other contexts or with other respondents" (Babbie & Mouton, 2002:277)**	Thick description	Detailed descriptions of participants, material, procedures and contexts were provided to enable the reader to judge the degree of transferability of the study.
	Purposive sampling	To obtain the greatest advantage from the focus group discussions, the researchers purposefully selected the participants on the basis of the specific aim of the focus group.
	Use of more than one group	Three focus groups were used to obtain 'rich' descriptive data and also to contribute to its transferability. Results from the three focus groups were compared and related to data obtained from questionnaires.
	Focus on the data rather than on the topic under investigation.	It is important to determine whether the data should be considered as typical or atypical of the phenomenon under investigation. This aspect will be discussed in chapters 5 & 6.
Dependability **"The degree to which the results are repeatable" (Durrheim & Wassenaar, 1999:63)** **Known as dependability in quantitative research.**	Triangulation	This technique and the way in which it was applied to this study, have already been discussed extensively.
	Detail descriptions	Detailed descriptions of methods of data acquisition, processing and analyses are provided to enhance repeatability.
	Review of credibility	"There can be no validity without reliability (and thus no credibility without dependability)" (Guna & Lincoln in Babbie & Mouton, 2002:278). A demonstration of the former is sufficient to establish the latter.
	Dependability audit	Was performed together with the confirmability audit.
Confirmability **"The degree to which the findings are the product of the focus of the inquiry and**	Confirmability audit	An independent neutral researcher, also an expert in the specific area of research was approached for an opinion on the extent to which the qualitative part of the research

not the biases of the researcher" (Babbie & Mouton, 2002:278) **Known as objectivity in quantitative research**		complied with accepted research practice. Different classes of data were reviewed: raw data, data reduction and analysis products, data reconstruction and synthesis products, process notes and instrument development information.

*The qualitative researcher is not primarily interested in generalisations. The reason for this is that all observations are defined by the context in which they occur. Therefore the qualitative researcher does not claim that knowledge gained from one context will necessarily have relevance for other contexts. "The obligation for demonstrating transferability rests on those (the reader of the study) who wish to apply it to the receiving context" (Babbie & Mouton, 2002:277).

Compiled from Neuman, 2000:170-173; Struwig & Stead, 2001:133-135; Babbie & Mouton, 2002:118-124; McBurney,1994:119-124; Manias & Bullock, 2002:760.

4.6   SUMMARY

This chapter describes the methodology that was used to determine the demands made on the teacher of the child with a hearing loss in inclusive education in South Africa. The objectives for realising the aims were specified, while detailed descriptions were provided of the two phases of the main study, subject selection and material and apparatus. Comprehensive descriptions have been included of the development of the questionnaires and discussion guide, the pilot studies for both and the procedures. Finally, the recording and analysis of the data were discussed.