

CHAPTER 3

3. THE INVESTIGATION

The investigation is presented in the following **two parts**:

The research designs are described first to indicate how the research was planned according to the protocol.

Then the method of how the research was implemented is described next.

Chapter 3 is presented in line with the co-supervisor's expectations.

3.1 Research design

The research design will be set out in the following sequence:

- Purpose statement
- Research questions
- Research design
- Rationale for research design
- Type of mixed methods strategies
- Context of research
- Research techniques
- Trustworthiness
- Ethical considerations

3.1.1 Purpose statement

The purpose of the study will be to examine interpersonal communication factors in the supervisory relationship that play a role in enhancing occupational therapy students' clinical reasoning during physical fieldwork education.

3.1.2 Research questions

The primary research question for this study is the following:

What are the interpersonal communication factors in the supervisory relationship that play a role in enhancing occupational therapy students' clinical reasoning during physical fieldwork education?

To answer the primary research question the following six secondary research questions are posed:

- How do the interpersonal communication patterns of supervisors in the physical field compare with the grades of final year occupational therapy students for their clinical reasoning in the final practical exam?
- How do the final year occupational therapy students' experiences of the nature of their relationship with their supervisors compare with the grades they obtained for their clinical reasoning in the final practical exam?
- How do the supervisors' feedback styles compare with the grades of the final year occupational therapy students for their clinical reasoning in the final practical exam?
- How do those comments that the students receive on their Work Habits Reports, made by their supervisors about their clinical reasoning skills, compare with the grades students obtained for their clinical reasoning skills in the final practical exam?
- How do the grades students receive from their supervisors for their mid-term clinical reasoning skills compare with the grades they obtained for their clinical reasoning skills in the final practical exam?

- How do the grades students receive from their supervisors for their end of term clinical reasoning skills compare with the grades they obtained for their clinical reasoning skills in the final practical exam?

3.1.3 Mixed methods research design

In this study a mixed methods research design is proposed to answer the research question. The mixed methods research design, which emerged during the 1960s, amalgamates quantitative and qualitative research methods. It is defined by Creswell et al. as “the collection or analysis of both quantitative and qualitative data in a single study in which the data are collected concurrently or sequentially, are given priority [status], and involve the integration of the data at one or more stages in the process of research” (Creswell, Plano Clark, Gutmann, & Hanson, 2003, p. 212).

Since the mixed methods research design comprises both qualitative and quantitative research methods these concepts will be described first.

i. Qualitative research

Although there seems to be no consensus on the definition of qualitative research (Mason, 2002) the definition of Creswell (2007, p. 37) appears to be inclusive of all the characteristics of qualitative research. He states that “qualitative research begins with assumptions, a worldview, the possible use of a theoretical lens, and the study of research problems inquiring into the meaning individuals or groups ascribe to a social or human problem. To study this problem, qualitative researchers use an emerging qualitative approach to inquiry, the collection of data in a natural setting sensitive to the people and places under study, and data analysis that is inductive and establishes patterns and themes. The final written report or presentation includes the voices of participants, the reflexivity of the researcher, and a complex description and interpretation of the problem and it extends the literature or signals a call for action”. Extrapolating from this definition it appears that qualitative researchers gather data from participants’ personal views in a natural environment using inductive reasoning to analyse the data.

ii. Quantitative research

In quantitative research data is collected in the form of numbers and analysed by means of statistical methods which lends itself to precise measurement (Polit & Beck, 2010; Terre Blanche, Durrheim, & Painter, 2006). Numerical data are collected and analysed in a systematic and objective way (Ivankova, Creswell, & Plano Clark, 2010).

3.1.4 Rationale for mixed methods research design

Various authors embrace the use of both qualitative and quantitative research methods in a single study and quite a few authors articulated reasons for doing so (Onwuegbuzie & Leech, 2006; Collins, Onwuegbuzi, & Sutton, 2006; Newman, Ridenour, Newman, & DeMarco, 2003; Punch, 1999; Greene, Caracelli, & Graham, 1989; Polit & Beck, 2010).

Polit and Beck (2010, p. 285) state that certain research questions require a mixed methods approach on pragmatic grounds and give the advantages of this design as:

Complementarity – Qualitative and quantitative approaches can support each other and thus avoid the limitations of a single approach.

Incrementality – Progress on a topic can be incremental in that qualitative findings can generate hypotheses to be tested quantitatively and quantitative findings can be clarified qualitatively through in-depth probing.

Enhanced validity – By triangulating the researcher can be more confident about the validity of the results

Although published more than 20 years ago Greene et al.'s (1989) five rationales for using a mixed methods research design are deemed to be all-encompassing. According to these authors a study's validity can be increased if it demonstrates five strategies, viz. triangulation, complementarity, development, initiation and expansion. According to these authors one or more of these rationales would prompt a researcher to employ a mixed methods research design. Before describing each of these rationales and how they will be incorporated in the study it is, however, worth

exploring the meaning of “validity” in the context of a mixed methods approach as it is to be applied in the study .

Polit and Beck (2010, p. 490) states that validity is seen in some quarters as associated with the positivist paradigm found in quantitative research and therefore an inappropriate goal in qualitative research that deals with naturalistic or critical paradigms. Four criteria are identified, viz. credibility, dependability, confirmability and transferability, for the *trustworthiness* of qualitative research that can be seen as paralleling the criteria of internal validity, reliability, objectivity and external validity in quantitative research.(A fifth criterion, authenticity, that is more distinctively within the naturalistic paradigm was later added); (Polit & Beck, 2010, p. 490). The words “validity” and “trustworthiness” will therefore be used in the study as interchangeable to describe the integrity or truth value of the methodology and findings. This subject will be discussed in more detail on p. 95.

3.1.4.1 Triangulation

Triangulation (Terre Blanche, Durrheim, & Painter, 2006), “is based on the assumption that any bias inherent in a particular data source, investigator and method would be neutralized when used in conjunction with other data sources, investigators and methods” (De Vos, Strydom, Fouche, & Delport, 2005, p. 361).The origin and explanation of triangulation is set out below.

Triangulation was originally developed by land surveyors to determine the position of a single point by reference to other known points. Two, or preferably three, reference points are generally used as the given position of a sole reference point, or the measurement of the direction and distance to such a point, could contain errors or instrument bias. Even with modern, very accurate, measuring techniques it is often found that the position of the unknown point is more accurately determined by combining the results obtained from measuring to several reference points. A schematic representation is depicted below in Figure 3-1: Triangulation schematic

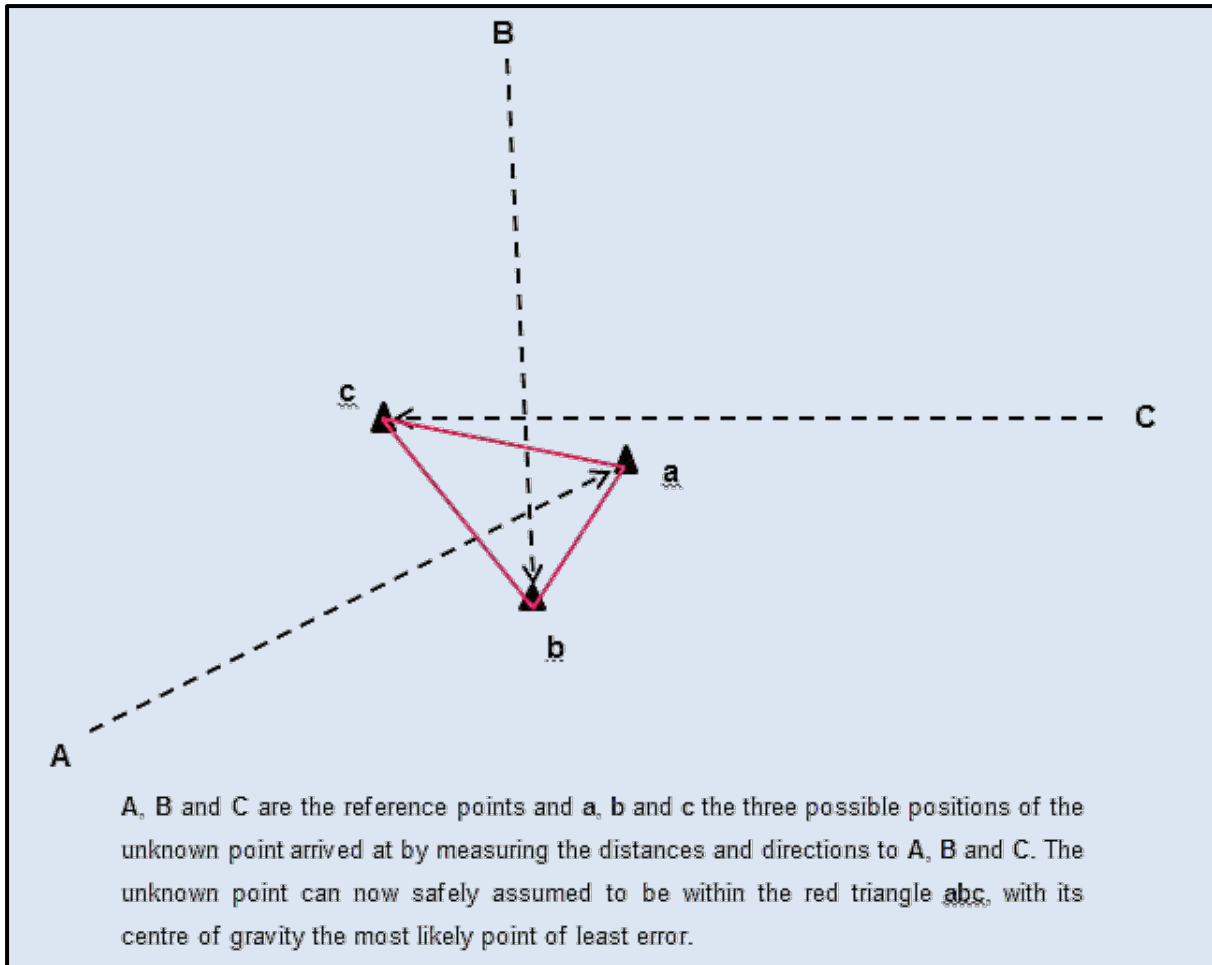


Figure 3-1: Triangulation schematic

Borrowing from the engineering example above, a polygon circumscribing effective supervisory interpersonal communication characteristics in the teaching and learning of clinical reasoning skills can thus be created.

Consequently in order to corroborate and verify the research findings, data will have to be generated, collected, analysed and interpreted using multiple methods (Powell, Mihalas, Onwuegbuzi, Suldo, & Daley, 2008; Hansen, Creswell, Plano Clark, Petska, & Creswell, 2005). Although most of the data generation and analysis will be qualitative in nature, especially with regard to interpersonal communication behaviour, quantitative methods will also be employed to analyse, compare and present the results.

From a social sciences perspective, four types of triangulation were identified by Denzin in 1970, viz. data triangulation, investigator triangulation, theory triangulation

and methodological triangulation (Terre Blanche, Durrheim, & Painter, 2006; De Vos, Strydom, Fouche, & Delport, 2005). These types of triangulation, which will be described next, will all be incorporated in the study.

i. Data triangulation

In order to realise the benefits of triangulation, data for this study will be generated, analysed and interpreted from the following sources:

- Focus groups conducted with both supervisors and students
- One-on-one interviews conducted with both supervisors and students
- Departmental tutor sessions conducted with students during their practical training
- WHR at mid-term and at the end of term reflecting comments about the students' clinical reasoning skills
- WHR at mid-term and at the end of term reflecting students' grades on their clinical reasoning skills
- Students' grades obtained in the practical exam for their clinical reasoning skills

The methods employed to generate and collect data will first have to be developed and pre-tested prior to the actual data collection.

The sources and methods will be elaborated on later in this chapter.

ii. Investigator triangulation

By using different independent investigators inter-subjective agreement can be achieved and researcher effects be reduced (Terre Blanche, Durrheim, & Painter, 2006; De Vos, Strydom, Fouche, & Delport, 2005).

Data will be qualitatively analysed by more than one investigator using different methods such as thematic content analysis (including both a priori and inductive coding methods) and the IPA diagnostic tool and then enumerated, i.e. given quantitative codes. Next the enumerated data will be compared with the students'

grades obtained in the mid-term, end of term and in the final exams (quantitative analysis).

iii. Theory triangulation

Employing multiple perspectives or theories to interpret a single set of data will enhance the trustworthiness (Terre Blanche, Durrheim, & Painter, 2006; De Vos, Strydom, Fouche, & Delport, 2005).

This study set out to use an interpretivist, a constructionist and a positivist paradigm to analyse and interpret the data.

iv. Methodological triangulation

Multiple methods can be used to study a single phenomenon (Terre Blanche, Durrheim, & Painter, 2006; De Vos, Strydom, Fouche, & Delport, 2005).

For the purpose of the study focus groups, one-on-one interviews, departmental tutoring sessions, documentary resources and students' mid-term, end of term and exam grades will be used to study the phenomenon.

3.1.4.2 Complementarity

When searching for clarity of findings one method's findings can be overlapped with another method's findings (Powell, Mihalas, Onwuegbuzi, Suldo, & Daley, 2008).

Findings from the students' inter-subjective experiences of the nature of their relationship with their supervisors (obtained from the focus group and one-on-one interview data) and the supervisors' views gleaned through the same process, also from their comments in the WHRs which will all be superimposed on the findings which emerged from the IPA of the supervisors, will all enhance the validity of the interpretation.

3.1.4.3 Development

Findings obtained from one method can be used to help shape or to inform other methods (Hansen, Creswell, Plano Clark, Petska, & Creswell, 2005).

Findings from the IPA can assist in the coding of data obtained from focus groups, one-on-one interviews and the WHR.

3.1.4.4 Expansion

Expansion seeks to broaden the study by using different methods and in doing so provides richness and detail to the study.

As themes emerge during the research process the researcher might use the information to decide whether and how new data should be gathered (Straus & Corbin, 1998). It is expected that themes could change or new ones emerge from the focus groups, one-on-one interviews and tutor sessions.

3.1.4.5 Initiation

Discovering new information during the course of the research study might stimulate new research questions.

3.1.5 Types of mixed methods strategies

Multiple types of mixed methods research have been classified by different authors. Creswell (2009) for instance identified six typologies of the mixed methods research design which he adapted from Creswell et al's (Creswell, Plano Clark, Gutmann, & Hanson, 2003) classification of 12 typologies. Leech and Onwuegbuzie (2009) also designed a model that classifies mixed methods into 12 typologies.

For the purpose of this study one of the typologies from the Leech and Onwuegbuzi (2009) model will be used since it clearly delineates the phases of the research sequence. These authors describe this typology as a partly mixed, sequential

dominant, status-qualitative design since the “qualitative and quantitative phases occur one after the other, with the qualitative phase being given higher priority and mixing occurring at the data interpretation stage” (Powell, Mihalas, Onwuegbuzi, Suldo, & Daley, 2008, p. 296). This study will occur in three phases, viz. A first phase which will predominantly employ qualitative methods to generate data, a second phase where the themes which emerge from the data will be ordered, analysed and presented in a quantitative manner, and a third phase, where the findings will be integrated and interpreted using a qualitative research design. The phases of this research typology are depicted in Table 3-1: Mixed research method to be applied in the study. Capitals denote a higher order of dominance in the study.

Table 3-1: Mixed research method to be applied in the study

Phase	Sequence	Status	Paradigm	Ontology	Epistemology	Methodology
I Data Generation	1	QUAL	Interpretivist	Inter-subjective reality	Empathetic interaction	Interviews - One-on-one, Focus groups, Tutor sessions
			Constructionist	Constructed reality	Constructing statements made	Deconstruction of textual material written by supervisors, i.e. WHR
	1	Quan	Positivist	External reality	Assessment of students' clinical reasoning according to set criteria	Collecting computer records of students' mid-term, end of term and exam grades
II Data Analysis	2	QUAL	Interpretivist	Inter-subjective reality	Inductive reasoning	Thematic content analysis Data acquaintance Inducing themes Coding data Elaboration
			Interpretivist	Inter-subjective reality	Inductive reasoning	IPA Data acquaintance Identifying interpersonal patterns Coding data using IPA element definition
	3	Quan	Positivist	Objective reality	Statistical analysis of quantified data	Enumerating themes and patterns and comparing with simplistic mathematical weighted averages of students' grades
III Data Interpretation	4	QUAL QUAN	Combination of interpretivist, constructionist Positivists paradigms	Combination of inter-subjective constructed objective reality	Inductive and deductive reasoning	Qualitative interpretation based on quantitative presentation and comparison of results

Next the phases will be discussed in terms of their ontological perspective, epistemological position and methodologies.

3.1.5.1 Phase I – Data generation

i. Theoretical paradigm

“Paradigms are all-encompassing systems of interrelated practice and thinking that define for researchers the nature of the enquiry along three dimensions, viz, ontology, epistemology and methodology” (Terre Blanche, Durrheim, & Painter, 2006, p. 6).

The interpretive paradigm, as employed in this phase of the study, involves “taking people’s subjective experiences seriously as the essence of what is real for them, making sense of people’s experiences by interacting with them and listening carefully to what they tell us and making use of qualitative research techniques to collect and analyse information” (Terre Blanche, Durrheim, & Painter, 2006, p. 274).

ii. Ontological perspective

“Ontology specifies the nature of the reality that is to be studied and what can be known about it” (Terre Blanche, Durrheim, & Painter, 2006, p. 6).

From an ontological perspective, a phenomenological or interpretive paradigm is chosen to determine and explore the internal reality of subjective experience. The underlying assumptions are the following (Polit & Beck, 2010, p. 15):

- Reality is multiple and subjective, mentally constructed by individuals.
- The inquirer interacts with those being researched; findings are the creation of the interactive process.
- Subjectivity and values are inevitable and desirable.
- Provides an emerging insight grounded in participants’ experiences.

This approach, which focuses on participants’ inter-subjective experiences of their internal reality, is deemed most fitting in understanding how supervisors and students feel about and give meaning to their social reality (Mason, 2002; De Vos, Strydom, Fouche, & Delport, 2005; Terre Blanche, Durrheim, & Painter, 2006).

This phase also includes a minor quantitative element in that the marks students obtained at mid-term and end of term in the WHR, compiled by their supervisors, as

well as their final exam grades in the subject are collected for later comparative analysis.

iii. Epistemology

“Epistemology specifies the nature of the relationship between the researcher and what can be known” (Terre Blanche, Durrheim, & Painter, 2006, p. 6).

An empathetic, interactive epistemological position is planned to generate data from the participants’ subjective experiences in order to understand how occupational therapy students and supervisors perceive the supervisory relationship. The researcher, using pre-determined guidelines to ensure relevancy, will act as facilitator to elicit the reality as perceived by the participants. All care will be taken to keep questions open-ended in order not to lead the responses in a specific direction.

iv. Methodology

“Methodology specifies how researchers may go about practically studying whatever they believe can be known” (Terre Blanche, Durrheim, & Painter, 2006, p. 6). In this study it is planned to generate and collect data from the following six sources:

- Departmental tutor sessions to be held during the fieldwork blocks conducted once a week between the students and faculty responsible for liaising with the training hospitals
- Focus groups which will be conducted separately with students and their supervisors on completion of the fieldwork block. Data from focus groups and one-on-one interviews will be captured verbatim.
- Semi-structured one-on-one interviews to be held with students as well as supervisors on completion of the students’ fieldwork block
- Deconstructing comments about students made by their supervisors in the students’ WHR.
- The grades allocated to students on their clinical reasoning skills by their supervisors on their mid-term and end of term WHR and the students’ final practical exam grades as agreed by internal and external examiners on the

students' clinical reasoning skills during the final practical exam in the physical field.

3.1.5.2 Phase II – Data analysis

i. Theoretical paradigm

The gathered data will be predominantly qualitatively analysed to determine the thematic content and interpersonal patterns displayed by supervisors. The results of this analysis will then be enumerated and a positivist or quantitative paradigm employed to order and presents the results.

ii. Ontology

An interpretive paradigm will be employed in the qualitative analysis of the data. Data will be analysed from both the transcribed data [thematic content analysis] which will “capture the entire character of the discussion, warts and all” (Millward, 1995, p. 286) and directly from the audiotapes [IPA]. The nature of the investigation is such that the text of transcribed data would not suffice. A great deal can be learned from the tone of voice, the manner and context in which comments were made.

The thematic content analysis is aimed at organising and coding the underlying meaning of what was said in the data-gathering sessions into discrete themes defining the interpersonal communication characteristics of supervisors. These themes, although broadly defined by the research questions, will only be fully developed as part of the analysis. The IPA, although identifying a pattern of interpersonal behaviour for individual supervisors according to pre-defined elements, is also based on the context, underlying message or real meaning of what was said and the manner in which it was communicated.

The results from the qualitative research will be ordered and presented in a quantitative manner to enable definitive conclusions in terms of the general or typical factors contributing to effective or ineffective interpersonal communication in the supervisory relationship. As relatively simple and straightforward mathematical and statistical processes will be used, this phase can also be described as using a

positivist paradigm which will “aim to provide an accurate description of the laws and mechanisms that operate in social life” (Terre Blanche, Durrheim, & Painter, 2006, p. 6). Another view of the positivist paradigm is the following (Polit & Beck, 2010, p. 6):

- Reality exists; there is a real world driven by real natural causes.
- The inquirer is independent from those being researched.
- Values and biases are to be held in check; objectivity sought.
- Measured, quantitative information; statistical analysis. Emphasis on discrete, specific concepts and generalisations sought.

iii. Epistemology

Thematic content and interpersonal pattern analysis will both be done within an interpretive paradigm, not only in determining the underlying meanings but also in looking for common themes and pattern elements. Starting from the broadest possible view an open mind is essential to ensure salient issues are correctly identified and do not reflect the personal bias of the analyst, but rather emerge through a process of inductive reasoning.

As far as the purely quantitative work in this phase is concerned the researcher should preferably be clinically objective and detached from the data being worked on. There is no room for subjective interpretation in this phase and it is important that the quantitative part follows sequentially on the qualitative analysis with no going back.

iv. Methodology

The source data for this phase will be in the form of digital audio recordings and although verbatim transcripts must and will be made, the actual qualitative analysis will be largely made directly from source. This is necessary in order to benefit fully from the richness of information contained in the audio material rather than just relying on transcripts.

The positivist paradigm envisaged for this phase of the study consists of simplistic mathematical averages weighted to quantify how the actual exposure of students to

specific interpersonal communication factors influence their learning experience and result in high, medium and low performance.

3.1.5.3 Phase III – Data interpretation

i. Theoretical paradigm

In the last phase, interpreting findings and making convincing arguments about the factors contributing to students' clinical reasoning skills during their fieldwork education will be predominantly in the realms of qualitative research within an interpretive paradigm.

In this phase, the researcher will amalgamate, interpret, argue and draw conclusions by means of the following approaches as set out by (Mason, 2002, p. 176):

- Arguing evidently
- Arguing interpretively and narratively
- Arguing evocatively
- Arguing reflexively and multi-vocally

ii. Ontology

The results from the analysis performed in Phase II will be triangulated, interpreted and analysed in this phase. The IPA results will be used as a basis (compared and augmented with the results obtained from other data gathering sources) for the qualitative interpretation. In this way all that “can be known about” (Terre Blanche, Durrheim, & Painter, 2006, p. 6) the effect of interpersonal communication factors as determined in the study will be incorporated.

iii. Epistemology

The role of the researcher in this phase will be to integrate, interpret and argue the findings.

iv. Methodology

The methodology that will be applied during this phase will be mostly in the form of a descriptive interpretation of the triangulated findings from the previous phases illuminated by means of the literature. The process will be inductive and will focus on the interpersonal communication factors conducive for the students' mastery of clinical reasoning skills during their fieldwork education.

3.1.6 Techniques

3.1.6.1 Sampling

i. Population

The intended population for the study will include the 2007 final year occupational therapy students from the University of Pretoria (whose fieldwork education takes place in a hospital setting where patients suffering from physical conditions are treated) and the fieldwork supervisors at these hospitals.

ii. Sample

It is planned to include in the sample the whole population as defined above; that is all the final year occupational therapy students of 2007 whose fieldwork education takes place in a hospital setting where patients suffering from physical conditions are treated, as well as the fieldwork supervisors at each hospital where these students are placed.

Physical fieldwork is specifically chosen to avoid unnecessary bias as the researcher normally works in the psychiatric field.

iii. Strata

Both genders will be recruited.

Supervisors' ages can range from 24-65 years.

Students' ages can range from 21-40 years.

Both supervisors and students from African, Asian and Caucasian cultural groups will be recruited.

iv. Sample size

It is estimated that the total number of student participants will be all of the 36 final year students from the University of Pretoria as well as the 24 supervisors from the hospitals involved as shown in Table 3-2: Planned Sample Size. Should data not reach saturation by using all the participants the study would have to be continued for another year. The technique of redundancy will have to be employed; the sample will reach redundancy when “the same themes and issues come up over and over again”, i.e. if it reaches a saturation point and the research question is answered (Terre Blanche, Durrheim, & Painter, 2006, p. 50).

Table 3-2: Planned Sample Size

Block	STUDENTS			SUPERVISORS	
	Tutor sessions	Focus groups	One-on-one interviews	Focus groups	One-on-one interviews
1	12	12	6	8	4
2	12	12	6	8	4
3	12	12	6	8	4
	36	36	18	24	12

v. Type of sampling

A stratified purposive sampling technique is planned for this study.

Purposive sampling is defined as “a non-probability sampling method in which the researcher selects participants based on personal judgment about who will be most informative” (Polit & Beck, 2010, p. 565). Participants to be recruited will therefore

only be those who can contribute meaningful information in accordance with the study's research questions (Creswell J. W., 2007; Terre Blanche, Durrheim, & Painter, 2006; De Vos, Strydom, Fouche, & Delpont, 2005). It is important that they should have something to say about the topic, in particular their experience of the interpersonal communication in the supervisory relationship for both supervisors and students in the teaching and learning of clinical reasoning skills within the physical field.

vi. Permission

The sample selection will depend on permission from the following:

- The Head of the Department of Occupational Therapy at the University of Pretoria to determine if final year occupational therapy students at the University may be included in the research project.
- The CEOs as well as the Heads of the Departments of Occupational Therapy at one private and three public hospitals, provided their occupational therapists supervising final year occupational therapy students could be included in the study.
- The two liaisons responsible for the Friday afternoon tutor sessions at the Department of Occupational Therapy of the University of Pretoria.
- The Postgraduate and Research Committee of Health Care Sciences at the University of Pretoria.
- The Ethics Committee of the Faculty of Health Sciences at the University of Pretoria.
- The Academic Advisory Committee of the School of Health Care Sciences at the University of Pretoria.

vii. Recruitment of participants

After permission is obtained recruitment of the following participants is planned:

- All 36 final year students at the Department of Occupational Therapy of the University to be educated in the physical field in 2007.

- Twenty four supervisors supervising final year students in the physical field during 2007.
- The two liaison persons responsible for the tutor sessions at the Occupational Therapy Department of the University of Pretoria.

3.1.6.2 Data generation

As explained in 3.1.4 data will be generated from the following six sources:

- Focus groups
- One-on-one interviews
- WHR
- Tutor sessions
- M-T and EoT grades
- Exam grades

Sufficient data on the role of interpersonal communication in the teaching and learning of clinical reasoning skills should be gathered ensuring that -

the phenomenon being studied can be approached from different angles,

data obtained will corroborate or confirm findings and

rich information is obtained which will provide comprehensive answers to the research question.

(Polit & Beck, 2010; Denzin & Lincoln, 2008; Terre Blanche, Durrheim, & Painter, 2006; Mason, 2002; Straus & Corbin, 1998).

The methods employed to collect data will first have to be developed and pre-tested prior to the actual data collection.

Each data source and collection method will be discussed next.

i. Focus groups

Focus groups, the first source from which data is to be collected, will be conducted with final year occupational therapy students after completion of their fieldwork block as well as with their supervisors.

➤ ***Focus groups defined***

Focus groups are carefully planned group discussions aimed at generating information from participants who share a similar type of experience (Terre Blanche, Durrheim, & Painter, 2006; De Vos, Strydom, Fouche, & Delport, 2005; Millward, 1995). One of the advantages of focus groups is their “isomorphism to the process of opinion formation” in as far as individuals form opinions about a variety of issues through communication with others (Albrecht, Johnson, & Wather, 1993, p. 54).

➤ ***Size of focus groups***

Literature on focus groups varies with regards to the size of the group. While most authors believe that focus groups are made up of six to 12 participants with an average of eight, Krueger (1988) suggests that a focus group comprises between four to eight members. For the purpose of this study eight supervisors (two from each of the four hospitals) and 12 students (the number placed at each hospital) will be recruited following each fieldwork block.

➤ ***Consent***

The consent of the supervisors and students will have to be obtained first. It is planned to use the documents contained in Appendix E: Information Leaflet and Informed Consent of Students, and Appendix H: Information Leaflet and Informed Consent for Supervisors, for this purpose.

➤ ***Interview guide***

An interview guide will be necessary to prompt the moderator to recall the main issues to be discussed (Millward, 1995; De Vos, Strydom, Fouche, & Delport, 2005). According to Millward (1995, p. 284) “fixed questions may undermine the ability of the moderator to listen analytically to content of the discussion thereby overlooking the implications of what is said” and questions will therefore be mostly open-ended.

The intention is to use the provisional interview guides which were developed and tested by the researcher in the pre-test in 2006 as shown in Appendices F and I. However, circumstances may cause these guides to be adapted.

➤ ***The moderator***

The researcher will also be the moderator. Because the facilitation of focus groups necessitates thorough knowledge and skills, the researcher will be attending a one semester module on focus groups to be presented to their post-graduate students by the Department of Psychology at the University of Pretoria

The moderator will facilitate the process by asking clear, short, one-directional, open-ended questions related to the research question during the discussion. What the supervisors and students say during the discussions will constitute the essential data for the focus group sessions.

The moderator will create a non-threatening environment so that participants will be encouraged to share experiences, feelings and opinions about the supervisory relationship and the teaching and learning of clinical reasoning skills without fear of being criticised or being pressurised into reaching consensus (Morgan & Krueger, 1998; Mason, 2002).

➤ ***Information to participants***

In the process of recruitment the supervisors and students will be informed -

about the purpose of the research,

that their identity will not be revealed,

who the other group members are,

what will be required of them,

that an incentive will be paid for their participation and to cover transport costs,

that refreshments will be provided, and

of the time and venue of the group session.

Most of the above is contained in the Information Leaflets and Informed Consent contained in Appendices E and H. However, at the actual focus group all the required information will again be shared with the participants.

➤ ***The focus group procedure***

The focus group will follow a certain procedure:

Introduction: A quick recap of information shared previously such as the purpose of the study, confidentiality, etc., and a brief description of the process to be followed during the group session to clear up any misconceptions.

Warm-up: In order to facilitate spontaneity and to stimulate interaction among participants a suitable warm-up activity will be used.

Clarification of terms: Terms that will be used during the session will be clarified by the researcher to ensure common understanding during the actual discussion.

Open-ended questions: Open-ended and prompting questions (previously developed and included in the interview guide), will be used by the moderator to guide the discussion, ensure all topics are covered and to keep the process flow going.

Wrap-up: Before concluding the session the salient points emerging from the group discussion will be summarised by the moderator to verify general understanding.

Member check: The relative comfort or discomfort of group members with the process and outcomes will be determined through pertinent questioning and any remaining concerns addressed.

Closing statements: General appreciation for participation, again stressing confidentiality and a brief summary of what will now be done with the information tabled in the focus group.

ii. One-on-one interviews

The third source of data collection will be of semi-structured one-on-one interviews with both the students and their supervisors.

➤ ***One-on-one interviewing defined***

Intensive interviewing is defined as “a qualitative method that involves open-ended, relatively unstructured questioning in which the interviewer seeks in-depth information on the interviewee’s feelings, experiences, and perceptions” (Lofland & Lofland, 1984, p. 12).

According to Terre Blanche *et al.* (2006, p. 297) “conducting an interview is a more natural form of interacting with people than making them fill out a questionnaire, do a test, or perform some experimental task, and therefore it fits well with the interpretive approach to research”.

In the one-on-one interview the researcher will cover a number of topics, the precise questions and their order will not be fixed however since they will develop as a result of the interaction with the participant.

➤ ***Sampling and recruitment***

One-on-one interviews will be conducted with supervisors and students who participated in the focus groups and who did not participate to the full either because of language barriers or because they did not feel confident enough to voice their opinion.

➤ ***Consent***

Here also the consent of the supervisors and students will have to be obtained first by means of the Information Leaflet and Informed Consent forms contained in Appendices E and H.

➤ ***Information to participants***

In the process of recruitment the student and supervisor will be informed -
about the purpose of the research,

that his/her identity will not be revealed,
what will be required of him/her,
that an incentive will be paid for their participation, and
of the time and venue of the interview.

As for the focus groups, most of the above information is contained in Appendices E and H but before commencement of an interview this will again be shared with the interviewee.

➤ ***Interview guide***

Items for the one-on-one interviews will be based on themes that occurred in the focus groups and are therefore not finalised at this stage. The provisional guides as developed in the pre-test stage appear in Appendices G and J.

➤ ***Conducting the one-on-one interviews***

The interviews will be conducted by the researcher in a neutral environment satisfying the requirements in respect of location and setting as outlined by Millward (1995) and Nieuwenhuis (2010). Interviews will be semi-structured and will aim, in a conversational way, to determine how supervisors and students perceive the supervisory relationship as well as the teaching or learning of clinical reasoning skills. Interviews will be conducted by means of predetermined entry questions to help the participants to reflect on these topics. The interviews should, however, be fluid and flexible (Mason, 2002). Questions asked will only be asked to obtain details and clarification and not to force the participant in any direction (Kvale, 1996).

iii. Work Habits Report

The fourth source from which data will be collected is the students' WHR.

On two separate occasions students each receives a WHR from their supervisors about their clinical reasoning skills as part of their professional behaviour during their fieldwork education. Because the students are supervised by more than one supervisor, viz. matrix supervision (Morse, 1998), the WHR is compiled from contributions by all the supervisors involved.

The first WHR is conducted after the first two weeks of training and the second on completion of the fieldwork block.

iv. Tutor sessions

A tutor session with the final year occupational therapy students over the six week fieldwork period is usually conducted once a week at the Department of Occupational Therapy by the lecturer liaising with them. The aim of this learning opportunity is to let the students reflect consciously on aspects of their fieldwork experiences for the past week as well as to enhance their clinical reasoning skills. The intention is to record the students' subjective experiences of the supervision they received to date, including the interaction with their supervisors, as well as the discussion of their clinical reasoning for the treatment of patients.

v. Grades obtained for mid-term and end of term

Since the WHR is both formative and summative in nature students receive feedback on the quality of their behaviour, and a grade is attached to it so as to quantify the behaviour. Professional behaviours and grade allocation are depicted in Table 3-3: Work Habits Report.

Table 3-3: Work Habits Report

Professional behaviour	Mark distribution
Work performance	10
Ethical behaviour	20
Professional development	10
Patient care (clinical reasoning)	40
Interpersonal relationships	<u>20</u>
Total	100

The outcome of patient care in the WHR was used in the study since the grades obtained and the supervisors' comments were a reflection of the quality of the students' clinical reasoning ability.

vi. Exam grades

The students' skills in clinical reasoning are tested at the end of their final year through a practical examination in the physical field. This exam is subject to the normal external examiner verification process and, as it is deemed to give a fair and unbiased view of their prowess in the subject, it will be used as the ultimate indicator of supervisory interpersonal communication impact on their clinical reasoning ability.

3.1.7 Recording data

Tutor sessions, focus groups and one-on-one interviews will be recorded on audio-tape or digital equivalent as entire discussions.

Advantages:

- An accurate record of the actual discussion will be kept and can be referred to at any time in the future.
- The audio materials will not only provide a verbatim record of what was said but will also reflect how things were said – there is thus an emotional content that would be missing from just a written record.

Disadvantages:

- Awareness of the conversation being recorded, which must be ensured in the interests of transparency and ethical conduct, can act as an inhibitor on the person being interviewed.
- Extreme care will be taken in terms of the storage of the recorded material as the interviewee can be identified from the audio tapes.

High sensitivity latest technology equipment will be used to ensure the best possible recording quality. Care will also be taken in the selection of the equipment to ensure that subsequent transcription can be done easily with compatible computer software.

3.1.8 Transcribing data

Practical considerations in the transcription process are the following;

Copies of the recorded material will be used in the actual transcription process. To safeguard against inadvertent loss of material the original recordings will be stored separately and securely.

As the transcription process requires multiple passes over the same material to ensure accuracy, the system hardware and software should be robust without loss of quality throughout.

All working copies of recorded material will be destroyed upon conclusion of the transcription process with only the original recordings being kept in a safe and secure place for the prescribed five year period.

Transcribing data manually is a time consuming process. An interview lasting an hour can take up to 20 hrs to transcribe and sufficient time should be allowed for this.

The responses will be transcribed verbatim. Since the aim of the qualitative research will be to gain insight into the participants' perceptions of the supervisory relationship in fieldwork education it will be important to capture the entire discussion as is.

Although transcription and subsequent coding seem to be a mechanical task (Millward, 1995, p. 287), the process undoubtedly will lead to data analysis from the outset.

3.1.9 Data coding and analysis

Following transcription the data will be coded and analysed.

Thematic content analysis will be through a combination of bottom-up and top-down approaches done by an independent coder and the researcher to determine which interpersonal communication themes and patterns emerge from the collected data.

The audio material of the supervisors who participated in the focus groups and one-on-one interviews are to be analysed by an independent clinical psychologist using the Interpersonal Pattern Analysis diagnostic instrument.

3.1.9.1 Thematic content analysis

Thematic content analysis, an interpretive analysis approach, will be used to code raw data into themes and then sub-divided into categories and, if necessary, sub-categories (Parahoo, 2006). A theme, i.e. “Style”, identifies the general characteristic being investigated. A category, i.e. “Authoritarian” or “Laissez-faire” defines the specific behaviour within the theme. Emphasis will be on the data’s meaning with quantification following only at a later stage.

A combination of bottom-up and top-down approaches (Terre Blanche, Durrheim, & Painter, 2006) will be used to analyse and code the data. There are certain advantages to employing only a bottom-up or a top-down approach but also drawbacks to using a single approach. In the study the intention is to get the best of both worlds by starting with a top-down approach which is then refined by modifying the initial themes and categories so determined, based on the detail emerging in the course of the analysis. Additional themes and or categories can be added if warranted. To support the combination approach the tutor sessions and the interview guides for both the focus groups and the one-on-one interviews will cater for general and specific questions. Although the WHR form is structured around certain themes these are, especially with regard to the interpersonal relationships, at a fairly high level which will need to be expanded on for application in the study.

The two approaches can be summarised as follows:

i. Bottom-up approach

A bottom-up approach is used to induce themes that underlie the raw data obtained, in this case from the tutor sessions, focus groups and one-on-one interviews. The process would normally comprise (Mason, 2002; Terre Blanche, Durrheim, & Painter, 2006) the following:

➤ ***Literal reading***

In order to get acquainted with the texts the researcher will have to read it several times. Elements of data recognized from the tutor sessions, focus groups and one-on-one interviews, appropriate to the research question, will be retrieved manually from the text and categorised.

➤ ***Reading for underlying messages***

Literal reading will be followed by the reading of the underlying messages which will be confirmed by the participants' non-verbal behaviour (e.g. laughter and tone of voice).

➤ ***Interpretive reading: Inducing themes***

The meaning of the underlying messages being interpreted by reading beyond the data, viz. what the researcher could infer from it.

This process approach is set out in Figure 3-2: Bottom-up approach to content analysis.

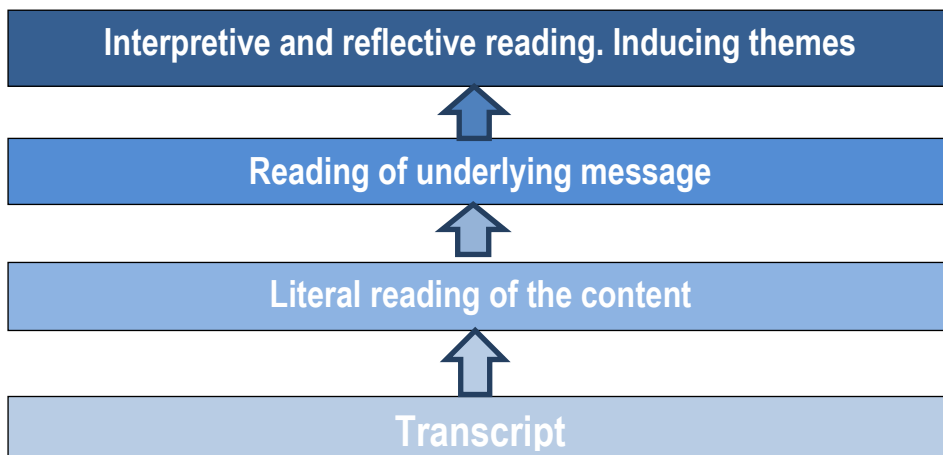


Figure 3-2: Bottom-up approach to content analysis

ii. **Top-down approach**

In the top-down approach themes and categories are developed from the interview guides used by the moderator during the focus groups and one-on-one interviews as

well as the students' Work Habits Reports (Millward, 1995). The transcribed material is then coded by classifying instances fitting the categories using the same literal, underlying message and interpretive and reflective reading techniques applied to the bottom-up approach (Terre Blanche, Durrheim, & Painter, 2006). This process approach is set out in Figure 3-3: Top-down approach to content analysis.

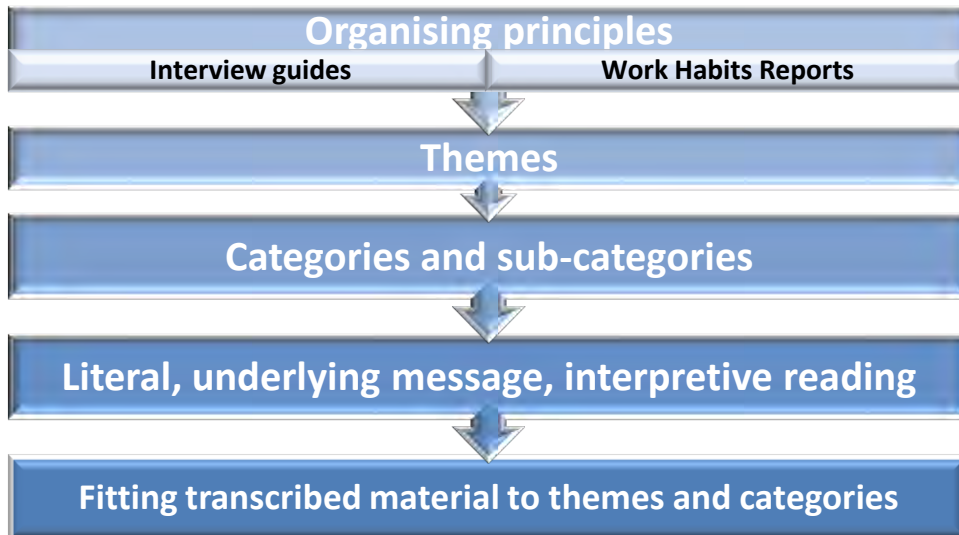


Figure 3-3: Top-down approach to content analysis

3.1.9.2 Analysis of coded material

The themes which emerge from the thematic content analysis and the Interpersonal Pattern Analysis are to be compared with students' grades for their clinical reasoning skills obtained in the final practical exam in the physical field.

A quantitative analysis, mostly aimed at aggregating, clarifying and presenting data in a format suitable to support further qualitative evaluation rather than being a sophisticated statistical analysis in its own right, is planned. It is expected that typical supervisory behaviour patterns associated with improved student performance will emerge from this.

3.1.9.3 Interpersonal Pattern Analysis

Working from the original audio recordings of focus groups and one-on-one interviews with supervisors an Interpersonal Pattern Analysis (IPA) will be done by an independent psychologist.

3.1.10 Trustworthiness

Trustworthiness in qualitative research is defined by Polit and Beck (2010, p. 570) as “the degree of confidence qualitative researchers have in their data, assessed using the criteria of credibility, transferability, dependability, confirmability and authenticity. These criteria were originally developed by Lincoln and Guba (1985), supported by Krefting (1991) and described by Polit and Beck (2010, p. 492) as follows:

- “Credibility refers to confidence in the truth of the data and interpretations of them.
- Dependability refers to the stability or reliability of data over time and over conditions.
- Confirmability refers to the objectivity that is the congruence between two or more independent people about the data’s accuracy, relevance, or meaning.
- Transferability refers to the extent to which qualitative findings can be transferred to other settings or groups.
- Authenticity refers to the extent to which researchers fairly and faithfully show a range of different realities”.

According to Polit and Beck (2010, p. 494) the quality in a qualitative inquiry can be enhanced to satisfy the above criteria through the following:

- **Prolonged engagement and persistent observation.** The data collection for this study is planned to take place over a period of one year and by engaging three groups of students during their fieldwork blocks. The supervisors for all three groups will be the same throughout the year and will

thus be engaged repeatedly. All focus groups and one-on-one interviews will be conducted with the principle of redundancy in mind.

- **Data and method triangulation.** Multiple data sources and methods will be used to verify the results as discussed under triangulation in 3.1.4.1.
- **Comprehensive and vivid recording of information.** Sample size for the study is planned to be inclusive and large enough to prevent skew. Any exclusion from the sample will be identified and justified. All interviews and group sessions will be audio recorded and supported by field notes where feasible. All original information such as digital audio recordings, transcriptions, coding and quantitative analysis are to be kept on record and be available for verification should it be required.
- **Member checking.** The one-on-one interviews will specifically be focused on ensuring that the views of all participants in the focus groups are heard and interpreted correctly.
- **Investigator and theory checking.** Different researchers will be used in the study to do the IPA and thematic content analysis.
- **Searching for disconfirming evidence and competing explanations.** Results will be quantitatively analysed and presented to enable unbiased evaluation.
- **Peer review and debriefing.** The intention in the study is that both IPA and thematic content analysis will be done from the original audio tapes by different researchers. Should major discrepancies surface in triangulating this data further external review will be necessary.
- **Thick and contextualized description.** Verbatim quotes from the participants will be included in the study to elucidate coding and IPA classifications.
- **Researcher credibility.** The study originated from the findings of a previous PhD study (De Beer, 2004) on a related subject completed by the researcher. The researcher's extensive experience in occupational therapy education in general and group therapy in particular, as well as her

attendance of a course on focus groups in preparation for the study, lends credibility to her as researcher.

The positivist criteria for the quantitative part of the study, viz. internal validity, reliability, objectivity, and external validity, can be seen as paralleling the first four criteria for trustworthiness, credibility, dependability, confirmability and transferability (Polit & Beck, 2010, p. 492). The quality enhancements given above, if incorporated as planned, should ensure the validity of the quantitative work in the study, especially in view of the quantitative part of the study being planned to be simple averages and weighted averages of the phase 1 qualitative results.

3.1.11 Ethical considerations

All ethical undertakings included in the study protocol as approved by the Faculty of Health Sciences' Research Ethics Committee, University of Pretoria, will be met.

The study is being planned to meet the following criteria, identified by Breakwell et al. (1998, p. 29) based on publications of the British Psychological Society, to ensure the ethical feasibility of the research:

- **The protection and welfare of participants:** Participants in the research will be protected from being either physically or mentally harmed by the research process. The principle of respect for human dignity, which is a fundamental component of ethical behaviour, will be adhered to.
- **The principle of informed consent:** Participants will be fully informed of all aspects of the research which might influence their willingness to participate in the research. The position of the researcher, which can to some extent be seen as one of influence over the student participants, and any payments to the participants shall not be used to induce them to accept undue risks.
- **The use of deception:** It is sometimes “simply not possible to tell the participants everything they could be told because, if they had knowledge about the actual purpose of the investigation, they might alter those critical aspects of their behaviour which are of interest to the investigator, thereby undermining the purpose of the study” (Breakwell, Hammond, & Fife-Schaw,

1998, p. 30). Care will be taken to ensure no information will be withheld if this could lead to unease at a later stage.

- **Debriefing of subjects:** After the data had been collected, participants shall be given any information which they might need or request about the nature of the study. The focus groups and one-on-one interviews will specifically afford an opportunity towards the end to initiate this process.
- **Subjects' right to withdraw from an investigation:** This shall be made clear to participants from the outset.
- **Invasion of privacy in observational research:** Applicable to naturalistic observation of subjects in their everyday settings and therefore not all that applicable to this study. All participants will be made aware in advance that audio recordings will be made of interviews and group sessions and also the intended use of these recordings.
- **Confidentiality and the anonymity of data:** All information obtained about a subject must be confidential unless agreed otherwise. If data is published, the subject should not be identifiable (Breakwell, Hammond, & Fife-Schaw, 1998, p. 32). Although all subjects will be identified through a code known only to the researcher all care will be taken to ensure no participant can be identified through the material to be published.

De Vos et al. (2005, p. 57) echo the above but also add the following criteria pertinent to this study;

- **The competence of the researcher:** Researchers are ethically obliged to ensure that they are competent and adequately skilled to undertake the proposed investigation as research can fail or produce invalid results if this is not the case. This was discussed under 3.1.10.
- **Release or publication of the findings:** There is an ethical obligation on the part of the researcher to ensure that “the final written report is accurate, objective, clear, unambiguous and contain all essential information” without “any emphasis or slanting in order to bias the results” (Breakwell,

Hammond, & Fife-Schaw, 1998, pp. 63,64). The researcher intends to fulfil this requirement.

3.1.12 Pre-test

The interview guides for both the focus groups and one-on-one interviews were pretested with supervisors and students from hospitals different from those that were planned to be included in the research study.

3.2 The method of research implementation

In this section the method implemented in the research is set out.

An interpretive qualitative research approach was employed in an attempt to understand how occupational therapy students and supervisors experience the supervisory relationship and how the latter affect the learning of clinical reasoning skills. “What is distinctive about interpretive approaches ... is that they see people, and their interpretations, perceptions, meanings and understandings, as primary data sources” (Mason, 2002, p. 56). An inter-subjective or interactional epistemological position was taken to generate data from the participants’ subjective experiences of the supervisory relationship.

3.2.1 Purpose statement

The purpose statement as planned in Section 3.1.1 of the Research Design remained unchanged.

3.2.2 Research questions

Neither the primary nor secondary research questions as planned in Section 3.1.2 changed in the execution of the study.

3.2.3 Mixed methods research design

A mixed methods research approach as planned in Section 3.1.3 was implemented in performing the study.

3.2.4 Rationale for mixed methods research design

The rationale for using a mixed methods research approach was validated in the study. The application of quantitative techniques to depict the results from the qualitative first phase for further analysis proved invaluable.

3.2.5 Type of mixed methods strategies

A partly mixed, sequential dominant, status-qualitative design was implemented as planned.

3.2.6 Techniques

3.2.6.1 Sampling

i. Population

The population consisted of the 36 final year occupational therapy students from the University of Pretoria in 2007 placed at two private and four state hospitals for their physical fieldwork education and the 21 practising occupational therapists that supervised them at those hospitals.

ii. Permission

The participants in the study were approached after permission was obtained from -

- the Head of the Department of Occupational Therapy at the University of Pretoria that the 2007 final year students at the University may be included in the research project.
- the CEOs as well as the Heads of the Departments of Occupational Therapy at the various hospitals that occupational therapists supervising final year occupational therapy students could be included in the study.
- the physical fieldwork liaisons at the University of Pretoria.

- the Ethics Committee of the Faculty of Health Sciences at the University of Pretoria.
- the Post Graduate and Research Committee of Health Care Sciences.
- the Academic Advisory Committee of the School of Health Care Sciences at the University of Pretoria.

iii. Recruitment of participants

The following participants were subsequently recruited:

Of the 36 students in the class of 2007, all of whom were approached, 33 declared their willingness to participate in the study. Three students did not grant permission due to personal circumstances.

Of the 21 supervisors where the students received their physical practical training, 19 declared themselves willing to participate in the study.

iv. Strata

Students and supervisors included a mix of different cultural, gender and age groups as the situation presented itself. Unfortunately this also meant that only females were included. Details of the demographics of both students and supervisors that finally participated in the study are given in Chapter 4.

v. Consent

As focus groups and one-on-one interview sessions were to be recorded electronically, the consent of the students and supervisors had to be obtained first. The provisional consent forms as contained in Appendices E and H (which inter alia made it clear that participation in the research would be completely voluntary, refusal to participate would involve no penalty and anonymity will be sacrosanct) were used for this.

vi. Sample size

The final sample arrived at is depicted in Table 3-4: The actual sample.

Table 3-4: The actual sample

Block	STUDENTS			SUPERVISORS	
	Tutor sessions	Focus groups	One-on-one interviews	Focus groups	One-on-one interviews
1	12	11	7	7	4
2	12	11	6	4+2 =6*	5
3	12	11	5	3+2=5*	3
	36	33	19	14+4= 18	12
				<i>*2 supervisors each attended two focus groups.</i>	

3.2.6.2 Data generation

As was stated in the research design, data from different sources to investigate the same phenomenon would enhance its credibility as well as contribute to a better understanding of the phenomenon (Terre Blanche, Durrheim, & Painter, 2006).

A summary of the sources and methods used to generate and collect data is given in Table 3-5: Methods of data collection, thereafter the various methods employed are discussed in more detail.

Table 3-5: Methods of data collection

Method	Participants	Number
Interpersonal Pattern Analysis	Clinical supervisors	14
Focus groups	Clinical supervisors	7
		6
		5
One-on-one interviews	OT students	11
		10
		11
Work Habits Reports	Supervisors' comments on students' CR Skills	33
	Supervisors' comments on students' IPRs	33
Mid-Term and End of Term grades	Supervisors' marks for students' CR Skills	33
Practical exam grades	Internal & external examiners' marks for students' CR Skills	33

i. Focus groups

➤ **Recruitment**

In recruiting supervisors and students for the focus groups they were informed through the Information leaflet and Informed Consent forms contained in Appendices E and H -

- about the purpose of the research,
- that their identity will not be revealed,
- who the other group members are,

- what will be required of them,
- that an incentive will be paid for their participation and to cover transport costs,
- that refreshments will be provided, and
- of the time and venue of the group session.

➤ ***Focus group size and process***

Although, as stated in the research design, the ideal size for such a group is deemed to be eight, with an acceptable range of between six and 10 members, the sizes of the actual groups varied between five and 11 participants as shown in Table 3-5: Methods of data collection. This was due to practical constraints and is not considered to be unacceptable.

The researcher acted as moderator or facilitator for all groups.

For both supervisor and student focus groups the planned group procedure was followed with only the open-ended questions in the interview guide being different:

➤ ***Introduction and clarification of terms***

Participants were recruited for a one hour focus group.

On arrival they were invited to refreshments in order to create a relaxed informal atmosphere. When everybody was present they were told that participation was voluntary, they did not have to answer questions if they didn't want to and that they may leave without giving any reason for doing so. They did not need to agree on anything. They were also informed that information would be recorded and that information would be confidential. They were also asked to complete a consent form.

➤ ***Warm-up***

A warm-up exercise, which consisted of asking participants to introduce themselves and name one of their personal favourite things, was done to break the ice and facilitate participation.

➤ **Discussion**

The moderator facilitated the focus groups using an interview guide covering specific areas by means of open-ended questions.

➤ **Interview guide for focus groups with supervisors**

The open-ended questions contained in the provisional guide as shown in Appendix I were used with the addition of a further question on the interpersonal relationship between supervisor and student:

- If you reflect back on the last seven [six] weeks with the students, what comes to mind?
- If you think of teaching methods, which methods did you use to teach clinical reasoning skills?
- Giving feedback to students, how did you experience that?
- How did you deal with a student who resists feedback?
- How did you deal with difficulties in the interpersonal relationship?
- Anything else you think is important in terms of supervision that you would like to share?

➤ **Interview guide for focus groups with students**

The open ended questions contained in the provisional guide shown in Appendix F were used with only slight emphasis variations as follows:

- If you reflect back on the last seven [six] weeks of your clinical work, what comes to mind? What are you thinking about?
- Which teaching style did you benefit most from?
- Were you taught in terms of clinical reasoning?
- If we look at feedback, what was good and what was not so good?
- Anything else you would like to share?

➤ **Closure**

In closing the focus group the moderator briefly summarised the main points under discussion to check participants' perceptions and thanked the group for their participation.

It is accepted that the focus groups have both strengths and weaknesses. Focus groups produce rich data on the topic of interest and provide a safe and stimulating environment for participants to express their views without fear of being rejected. However, passive participants may be unduly influenced or inhibited by more active members in an attempt to comply with the group norm (De Vos, Strydom, Fouche, & Delport, 2005).

ii. One-on-one interviews

Semi-structured one-on-one interviews were held with 22 students and nine supervisors (mostly chosen from participants in the focus groups) who did not participate to the full due to group dynamics or because some raised specific issues the researcher wanted to pursue further outside the focus group.

➤ ***Recruitment; information and consent***

In the recruitment process prospective participants were informed through the Information Leaflet and Informed Consent forms -

- about the purpose of the research,
- that his/her identity will not be revealed,
- what will be required of him/her,
- that they will receive R100 to defray transport costs, and
- of the time and venue of the interview.

As in the case of the focus groups both the supervisors' and students' consent were obtained in writing.

➤ ***Interviewing process and discussion***

A neutral venue outside the academic or hospital environment was used as far as possible to ensure a relaxed unbiased discussion.

The interviews were semi-structured in that pre-determined entry questions were posed to determine in a conversational way how supervisors and students perceived the supervisory relationship as well as the teaching or the learning of clinical reasoning skills. These open-ended questions, as contained in the provisional interview guides in Appendices G and J, were of necessity different for students and supervisors. However, specific themes for the one-on-one interviews also emerged from discussions in the focus groups.

➤ ***Closure***

Thank participant for her participation.

iii. Work Habits Report

Students each received a WHR about their professional behaviour during their fieldwork education on two separate occasions from their supervisors. Because students were supervised by more than one supervisor, viz. matrix supervision, the WHR were compiled by all the supervisors involved.

The first WHR was conducted after the first two weeks of education and the second on completion of the fieldwork block. Since the WHR is both formative and summative in nature students received feedback on the quality of their clinical reasoning skills (according to the marking rubric), and a grade was then attached to it so as to quantify the clinical reasoning skills.

iv. Tutor sessions

Tutor sessions conducted by faculty for the final year occupational therapy students of 2007 were attended by the researcher in order to explore the value of this source for data generation. However, it was found that the discussions in these groups centred more on cases treated by students and were not necessarily pertinent to the study. These sessions however, did help in placing the fieldwork education in

context. However, due to the lack of relevant information on the supervisory relationship, the tutor sessions were excluded from the study as a source of data.

3.2.7 Recording data

All focus group discussions and one-on-one interviews were recorded in their entirety. An Olympus DS-2 Digital Voice Recorder was used for this purpose.

Working copies in transcribing the material were made of all digital recordings. Original recordings were securely stored separately on audio disc (CD).

3.2.8 Transcribing data

Verbatim transcriptions were made of all recordings using Olympus and Audiograbber software.

On completion of the study all working copies will be destroyed and only the original recordings kept in a safe place for the required period.

3.2.9 Data coding and analysis

3.2.9.1 Thematic content analysis

As planned in Section 3.1.9, both top-down and bottom-up approaches were used in the thematic content analysis.

Interpersonal communications were identified right at the outset as the research subject or over-arching theme to be investigated, and in compiling the interview guides the researcher identified some broad subsets or themes related to this objective, i.e. feedback and style. In the WHR structure, Table 3-3: Work Habits Report, interpersonal relationships and clinical reasoning were identified as general

themes. From a top-down point of view there were thus some pre-determined themes.

The interview guides however purposefully also included a number of open-ended questions to elicit more information in order to refine and expand on these general themes. This comprises the bottom-up element.

Transcriptions from the focus groups and one-on-one interviews were coded using an approach for recognising and reading of data as put forward by Mason (2005). The sequence of the process was as depicted in **Error! Reference source not found.**

Initially the researcher sought to generate as many themes and categories as possible. This was the creative part of the process. This enabled the researcher to see features of the data, or of what the data refer to, that might have been overlooked with a more focused approach. Such discoveries guided the researcher in two ways. Firstly it revealed that there was some doubt about one or more of the assumptions with which the researcher began the analysis, i.e. that the participants were not concerned with what the researcher expected them to be concerned with. Secondly, it suggested a different focus for the research.

The aim of the initial analysis of data was to generate themes and categories, each of which collects or gathers together several segments of data, some of which looked promising as a basis for organising the analysis and eventually the research report.

This concern with categories that group many of the data together arises because researchers are usually concerned with stable characteristics or recurrent patterns.

The categories may vary in character too. Some may be obvious, others less obvious, even novel. What appeared to be obvious initially turned out not to be so at all.

Grounded theorising started from relative obvious categories.

The next step was to compare and contrast all the items of data that had been assigned to the same category. Glaser and Strauss (1967) refer to this stage as the “constant comparative method”. The aim of this is to clarify what the categories that

have emerged mean, as well as to identify sub-categories and relations among categories (Glaser & Strauss, 1967).

Seven themes, each with two categories in respect of the nature of the supervisor's interpersonal communication, were identified from focus groups and one-on-one interviews with students.

From focus groups and one-on-one interviews with supervisors one theme with two categories was identified in respect of interpersonal communication.

From the supervisor's comments in the WHR one theme with two categories was also identified in respect of their interpersonal communication.

The transcribed data was then coded according to these themes and categories and a profile for each supervisor's interpersonal communication behaviour constituted.

3.2.9.2 Analysis of coded material

The coded information in terms of supervisor interpersonal communication characteristics was then quantitatively aggregated according to the performance (high, medium and low) of students in the practical exam:

- Weighted average supervisor profiles applicable to each group of students were developed from the various sources of information. The actual exposure of the students in each group to individual supervisors was reflected in these general profiles.
- Simple histograms and spider diagrams based on summary spread sheets were used where possible to demonstrate the distribution of grades and supervisor profiles.

The results from the above were then qualitatively evaluated by way of the available literature as described in Chapter 4.

A statistical correlation between practical exam marks and general academic performance was done for all students to verify the assumption that the supervisor's

behaviour had a measurable impact on the students' performance in the practical exam. In other words, that students did not perform only as could be expected.

3.2.9.3 Interpersonal Pattern Analysis (IPA)

An IPA was performed by an independent psychologist on 14 of the 19 supervisors. This number was determined by concentrating on supervisors of high and low performing students, and also by which supervisors attended the focus groups and one-on-one interviews.

The IPAs were done directly from the audio recordings.

3.2.10 Trustworthiness

The specific elements incorporated in the planning of the study to ensure trustworthiness were largely satisfied as follows:

- **Prolonged engagement and persistent observation.** The data collection for this study took place over a period of one year and engaged three groups of students during their fieldwork blocks. The supervisors for all three groups were the same throughout the year and thus repeatedly engaged. All focus groups and one-on-one interviews were conducted with the principle of redundancy in mind.
- **Data and method triangulation.** Multiple data sources and methods were used to verify the results as discussed under triangulation in 3.1.4.1.
- **Comprehensive and vivid recording of information.** Sample size for the study was inclusive and large enough to prevent skew. Exclusions from the sample were identified and justified. All interviews and group sessions were audio recorded and supported by field notes where feasible. All original information such as digital audio recordings, transcriptions, coding and quantitative analysis were kept on record and are available for verification should it be required.

- **Member checking.** The one-on-one interviews were specifically focused on ensuring that the views of all participants in the focus groups were heard and interpreted correctly.
- **Investigator and theory checking.** Different researchers were used in the study to do the IPA and thematic content analysis. To enhance objectivity of the research findings it was planned to make use of an independent coder who is an expert in qualitative research methodology. However, although interacting with people is a natural process, which forms part of humans' daily living skills, an interpretive coder or researcher needs to be competent in the application of the principles and techniques of this approach (Terre Blanche, Durrheim, & Painter, 2006). Finding an independent coder with time available and who had, or was willing to attend specific training in the moderation of focus groups and conducting one-on-one interviews proved impossible. The researcher therefore undertook this herself.
- **Searching for disconfirming evidence and competing explanations.** Results were quantitatively analysed and presented to enable unbiased evaluation.
- **Peer review and debriefing.** IPA and thematic content analysis were done from the original audio tapes by different researchers. No major discrepancies surfaced in triangulating the data, thus no further external review was done.
- **Thick and contextualised description.** Verbatim quotes from the participants were included in the study to elucidate coding and IPA classifications.
- **Researcher credibility.** No concerns in this respect surfaced during the study.

3.2.11 Ethical considerations

All ethical undertakings in the study protocol as approved by the Faculty of Health Sciences' Research Ethics Committee, University of Pretoria, were met.

The study met the ethical criteria identified by Breakwell et al. (1998, p. 29) as follows:

- **The protection and welfare of participants:** Everything possible was done to protect the participants in the research from being either physically or mentally harmed by the research process. The principle of respect for human dignity had been adhered to and no subsequent concerns in this regard surfaced.
- **The principle of informed consent:** Participants were fully informed of all aspects of the research which might have influenced their willingness to participate in the research. The position of the researcher as a lecturer at the University of Pretoria was not misused in any way and payments to the participants were limited to nominal amounts sufficient only to defray their travelling costs in order to attend interviews.
- **The use of deception:** The study did not call for any deception and till completion of the study no instances of unease were evident. There was also no indication of concerns expected to emerge after publication.
- **Debriefing of subjects:** After the data had been collected in the focus groups and one-on-one interviews participants were given an opportunity to raise any concerns or request more information in respect of the process or general nature of the study.
- **Subjects' right to withdraw from an investigation:** This was made clear to participants in the consent forms and again before all focus groups and one-on-one interviews.
- **Invasion of privacy in observational research:** All participants were made aware in advance that audio recordings were to be made of interviews and focus group sessions and also the intended use of these recordings.
- **Confidentiality and the anonymity of data:** All information obtained about participants was treated as confidential with no participant identifiable. All participants were identified through a code known only to the researcher and

all care taken to ensure no participant could be identified through the material to be published.

De Vos et al. (2005, p. 57) echoed the above but also added the following criteria pertinent to this study;

- **Competence of the researcher:** This was discussed under 3.2.10.
- **Release or publication of the findings:** To the best of the researcher's knowledge the final written report is accurate, objective, clear, unambiguous and contains all essential information without any emphasis or slanting in order to bias the results.

3.2.12 Conclusion

The process that was followed in gathering the data for the study is shown in Figure 3-4: Data gathering process.

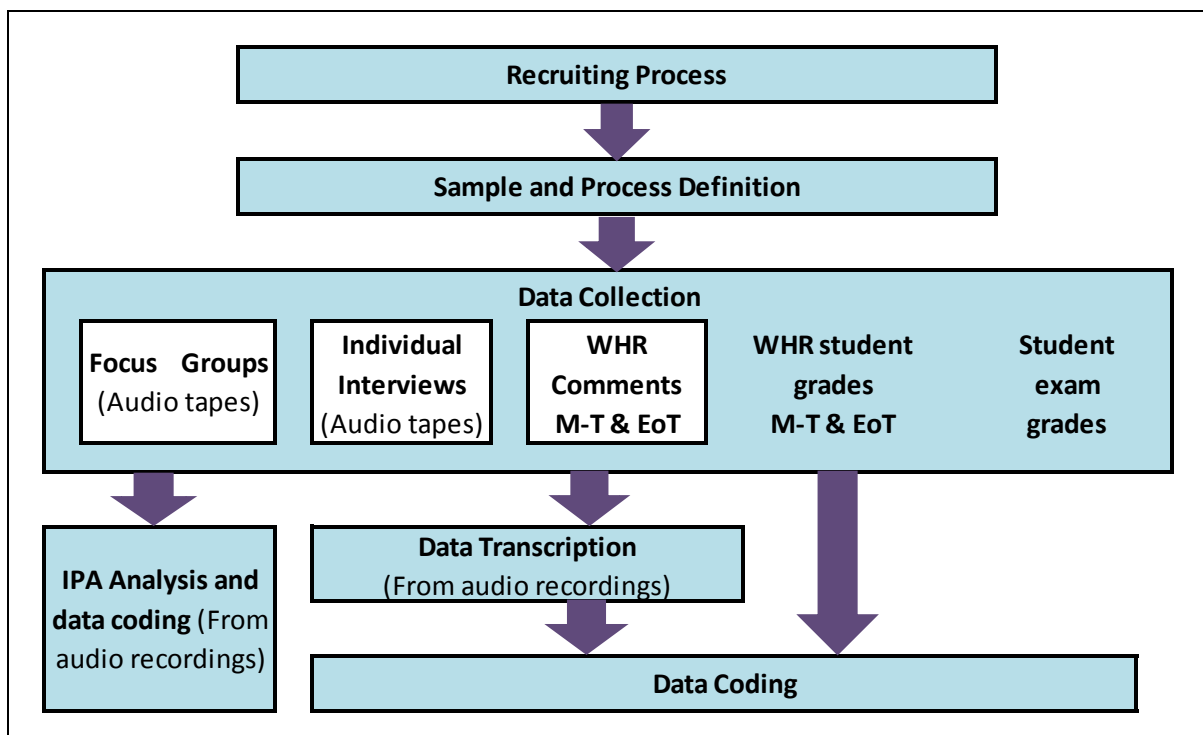


Figure 3-4: Data gathering process