

CHAPTER 1

Introduction and orientation to the study

1.1 INTRODUCTION

Critical thinking is currently regarded as the hallmark of excellence in nursing practice. The need for critical thinking has become more important now than ever before. It is regarded as an outcome without which national and international accreditation may be denied. Nursing is also confronted with increasing acuity and complexity of health problems. The result is that caring for clients/patients requires critically thinking nurses who will deliver quality care to meet patients' expectations (Bittner & Tobin 1998:269; Greenwood, Sullivan, Spencer & McDonald 2000:428; Pardue 1987:355). However, the concept of "critical thinking" is complex. The critical thinking construct has no clear definition. Various researchers have attempted to develop operational definitions to enable nurse educators to initiate teaching programmes and evaluation tools, but there is no consensus on the meaning of the concept (Bittner & Tobin 1997:267; Colucciello 1997:237; Morin 1997:450; Videbeck 1997:5). As this poses a conceptual problem, concept analysis was selected as a research design. As a result, the structure of this study differs slightly from that of traditional qualitative and quantitative ones.

1.2 RESEARCH METHODOLOGY

The research methodology should be appropriate and suitable for the type of study for which it is intended. As indicated above, the current problem is a conceptual one. Thus, the concept *critical thinking* was studied through concept analysis, a research design in the qualitative paradigm.

1.2.1 Qualitative research

Qualitative research refers to the investigation of phenomena, typically in an in-depth and holistic fashion, through the collection of rich narrative materials, using a flexible research design without the use of numeric information (Polit & Hungler 1999:712; Polit, Beck & Hungler 2001:15). It is a systematic subjective approach used to describe elements of a concept giving it meaning (Burns & Grove 2001:61). Qualitative research uses “words” not figures.

In this study, the qualitative paradigm was used to explore meanings of and ideas about the concept “critical thinking”. The paradigm created opportunities for the explication of categories related to the concept of critical thinking. In this regard, the researcher depended greatly on the principles of grounded theory as a data analysis method. This approach also made provision for constant comparison, selective and theoretical sampling of literature, and open and axial coding (Burns & Grove 1993:65; Polit & Hungler 1995:197).

1.2.2 Research design: concept analysis

Since the research problem is theoretical rather than experiential, the purpose of the study was to clarify the concept of critical thinking. Concept analysis was seen as appropriate for the study. This design enhanced the unraveling of the concept of interest and directed the inquiry towards identifying the different characteristics of the concept. The researcher followed the steps proposed by Walker and Avant (1995:39):

- Concept selection (background to the problem and problem statement)
- Determination of aims and purposes of the analysis (research question, aim, goals and objectives)
- Identification of all possible uses of the concept (literature review and data collection)
- Construction of a model case (data presentation)
- Construction of borderline, related, contrary, invented and illegitimate cases (data presentation)
- Identification of antecedents and consequences (literature review and data collection)
- Definition of empirical referents

It should be noted, however, that these steps were not necessarily followed sequentially. Most of these steps occur simultaneously during the research.

1.2.3 Sampling technique

The researcher undertook a selective literature review as the main data collection method. Selective sampling is a grounded theory technique and refers to the selection of sample data as it proves relevant to the study (Polit et al 2001:39; Streubert & Carpenter 1999:332). Grounded theory is a highly evolved and explicitly codified method for developing categories and propositions about the relationships from qualitative data. It is closely integrated with the constant comparative method of social research (Wilson 1989:726). In this study, selective sampling of data units was used to enhance simultaneous data collection and data analysis, that is, constant comparisons within the qualitative research paradigm. A selective literature review was conducted in the fields of education, nursing, philosophy, psychology and social science to enhance the development of attributes, antecedents, causal conditions, interaction strategies and consequences of critical thinking. Once themes had emerged, the researcher held limited interviews/discussions with colleagues to add density to categories (Walker & Avant 1995:40).

The researcher used purposive sampling, that is the conscious selection of certain elements to include in the study, to select informants (Burns & Grove 2001:376).

1.2.4 Data collection approach and instrument

Thesaurus and dictionary meanings were first pursued to explicate the meaning of the two parent words, namely, "critical" and "thinking". An extensive literature review was done as indicated above. After collecting data about the concept *critical thinking*, the data were subjected to open coding to develop themes and categories. Concepts were grouped together according to the categories to which they belonged. The categories were then named according to the data they contained and subcategories were developed by way of open coding so that the attributes of critical thinking, antecedents, actions and interaction strategies, objects of intention and consequences/outcomes were

identified (Strauss & Corbin 1990:99-114; Woods & Catanzaro 1987:224). Once major themes and categories emerged, data sampling was pursued through interviews/discussions to correlate findings with discovered categories (Walker & Avant 1995:40).

1.2.5 Establishing trustworthiness

Lincoln and Guba (1985:290) define trustworthiness as the extent to which findings provide truth-value of data collected. In qualitative research, generalisability is not the aim; what is important is to enhance the trustworthiness of the study. The researcher enhanced data trustworthiness by following Lincoln and Guba's model and attending to transferability, credibility, dependability and confirmability (verifiability) (Cutcliffe & McKena 1999:375; Lincoln & Guba 1985:332; Miles & Huberman 1994:266). Dependability was established by persistent data collection from different fields until data became repetitious, thus, until saturation occurred (Lincoln & Guba 1985:218; Patton 1990:349). A dependability audit was established for independent researchers, thus making provision for referential adequacy and to establish confirmability. All the above efforts were aimed at establishing trustworthiness. Trustworthiness will be discussed fully in chapter 2, section 2.4.3.

1.2.6 Ethical considerations

Ethical considerations pertinent to this study include bracketing, non-plagiarism, scientific honesty and publication.

1.2.6.1 Bracketing

Bracketing is a cognitive process of putting aside one's own beliefs, not making judgements about what one has heard, and remaining open to data as they are revealed (Streubert & Carpenter 1999:21). Bracketing should be done prior to and during research to enhance accurate portrayal of reality. In this study, bracketing was done to allow the construct to evolve from data rather than from a priori theory. Bracketing was also enhanced by not allowing predetermined structures in the literature to influence the researcher's openness to data and open coding. To further assist the researcher in

bracketing her preconceived ideas, she studied lists of synonyms for the two parent words “critical” and “thinking”. When reading through the lists, the researcher noted those that immediately made sense within her conceptualisation of the term *critical thinking* and then explored them further. By doing this, the researcher actually brought her understanding of the concept *critical thinking* to the surface. Throughout the research, the researcher was ever mindful that this conceptualisation should not influence her analysis of the data obtained.

1.2.6.2 Non-plagiarism

The contributions of all sources and authors are acknowledged. Complete data units are quoted so as not to mislead the reader. The final construct does not pertinently resemble any of the individual authors’ discussions found in the literature.

1.2.6.3 Scientific honesty

The researcher bound herself to the observance of the principles of scientific honesty by abstaining from all forms of fraudulent publication of results. Only true findings were reported.

1.2.6.4 Publication

Publication of results becomes problematic in qualitative research in view of informants’ position. Discussions were held with informants, and this necessitated adherence to formal confidential procedures, including confidentiality, and anonymity and consent. Names were not used for interview transcripts and thus cannot be traced back to the informants. Data obtained from informants were purely cognitive consequently the research was published with complete data units from all sources.

1.3 SELECTION OF THE CONCEPT

The section on concept selection pertains to the traditional statement of the background to the research problem, problem statement and source.

1.3.1 Background to the research problem

Since nurses in the 21st century are required to think more and more critically, it has become more necessary than ever before to develop and deliver nursing education programmes that will enhance the development of critical thinking ability. Mere reproduction of factual knowledge is an outmoded educational goal.

The background to the problem is explained under four perspectives: theoretic-conceptual, clinical practice, governing bodies and personal experience perspectives. A discussion of each follows below:

1.3.1.1 Theoretic-conceptual perspective

Many nurse researchers have tackled critical thinking from different angles, such as definitions, teaching and evaluation strategies, but there are still many questions that have not yet been answered, including what critical thinking entails.

Various studies have attempted to define the concept of critical thinking. To date, a consensual definition has not yet been reached, though there seem to be many similarities. For example, Alfaro-LeFevre (1995:9) defines critical thinking as purposeful, goal-directed thinking aimed at making judgements based on evidence rather than conjecture. Bandman and Bandman (1992:5) define critical thinking as a rational examination of ideas, inferences, assumptions, principles, arguments, conclusions, issues, statements, beliefs and actions. At the same time, critical thinking is referred to as reasonable reflective thinking geared to decision-making on higher levels of cognition. Pardue (1987:355) includes cognitive aspects of comprehension, application, analysis and evaluation in the definition of critical thinking. Kurfiss (1988:2) defines critical thinking merely as an investigation to explore a phenomenon.

It is difficult to develop a standard definition. Morin (1997:450) and Rane-Szostak and Robertson (1996:5) state that a standard definition can be problematic. However, clarifying the concept may lead to a conceptual definition. Haffer and Raingruber (1998:6) state that the diversity in describing critical

thinking makes it difficult to develop guidelines for nursing programmes. Bittner and Tobin (1998:267) agree that there is a lack of a universal definition and maintain that consensus must be reached if critical thinking is to be successfully accommodated in nursing education programmes. A concept analysis would address the diversity in the meaning of critical thinking. Abegglen and Conger (1997:452) and Lowdermilk and Fishel (1991:34) are also of the opinion that nurses need to become critical thinkers.

1.3.1.2 Clinical practice perspective

Contemporary health care delivery is confronted with increasing and complex problems, especially due to a shortage of human resources. Nurses in South Africa form the backbone of health care delivery and will therefore be required to think more critically to address the needs of individuals and communities (Fowler 1998:184).

Since critical thinking is the hallmark of nursing practice today, various models have been developed to enhance critical thinking ability in nursing students. Brock and Butts (1998:6) maintain that critical thinking should form part of the model of teaching integrated into Nursing Science and Art, and Research. In their view, specific outcomes should be specified at each level of training, meaning that specific critical thinking outcomes should be developed.

According to Bittner and Tobin (1998:268), consumerism is becoming entrenched in health care delivery systems. As a result, patients are demanding to be heard and to become more involved in decision-making about their own health matters. This requires that nurses deliver satisfactory health care by showing expertise through critical thinking.

Other reasons given to support the need for critical thinking include the increased acuity of patients who need a unique understanding of their health problems, the growing shortage of nurses which requires that the few that are available are able to deal with the increased workload effectively and efficiently, complex and diverse processes in health care systems, advanced technology that requires expertise, and the unpredictability of clinical practice (Colucciello 1997:19; Hamilton 1996:123; Jacobs,

Ott, Sullivan, Ulrich & Short 1997:19; Lowdermilk & Fishel 1991:34; J Pond, Bradshaw & Turner 1991:18).

In a study to investigate whether students possessed the ability to think critically, Fredericson and Mayer found that they did, but could not apply the principles of critical thinking in problem solving. The conclusion drawn from the above is that students receive training in the critical thinking process but have not been taught how to apply it in specific contexts (Brock & Butts 1998:6). Clarification of the concept can be instrumental in contextualising critical thinking.

Videbeck's (1997:23) model for evaluating critical thinking in students uses five outcomes criteria, including critical thinking. However, the problem was that there was no clear conception of the concept *critical thinking*. It is therefore clear that the concept *critical thinking* should be clarified first, before the development of training programmes and models.

Perhaps the question to ask at this point is whether critical thinking is a determinant of professional competence. A controversy developed when Maynard (1996:16) explored the relationship of critical thinking ability to professional nursing competence. Her findings indicated that critical thinking did not change significantly during the educational experience, that is, from sophomore to senior years. However, a significant increase in critical thinking developed during professional practice and no relationship was found between critical thinking and professional competence. Maynard concluded that experience was the key factor influencing the development of both competence and critical thinking. These findings could again be attributed to a lack of clarity in defining the term "critical thinking" which led to inconsistent evaluation. Hence, clarification of the concept becomes even more important at this stage.

1.3.1.3 Governing bodies' perspective

The National League for Nursing (NLN), South African Nursing Council (SANC), the South African Qualifications Authority (SAQA), and governing bodies for nurses in most countries stipulate critical

thinking as a requirement for accreditation in professional nursing programmes (Brock & Butts 1998:5; Haffer & Raingruber 1998:61; Perciful & Nester 1996:23; SANC 1988:2; Sedlak 1997:11).

Many schools of nursing in the United States of America (USA) include critical thinking as an important requirement of nursing practice, hence have developed and adjusted programmes to accommodate the requirement. Brock and Butts (1998:5), Videbeck (1997:20) and others view critical thinking as a criterion for accrediting baccalaureate nursing.

In the Republic of South Africa (RSA), the new dispensation on education and training requires that all programmes, including nursing education, meet the cross-curricular outcomes drawn up by the SAQA, one of which is critical thinking (Van der Horst & McDonald 1997:49). The current nursing education philosophy of the South African Nursing Council (SANC 1988:2) also requires that student development be geared to thinking critically.

1.3.1.4 Personal experience perspective

In the researcher's experience as a professional nurse and as a teacher in the classroom and clinical area, it was observed that students merely reproduced factual knowledge in the management of patients' problems. In addition, students seemed to rely on doctors' orders for the execution of nursing care activities. Even if they possessed factual knowledge, it seemed difficult for them to address the individual needs of patients/clients, since they could not transfer knowledge to practice. This could, in part, be blamed on a lack of critical thinking skill. This prompted the researcher to direct the study to the exploration of the defining characteristics of critical thinking. Clarification of the concept may lead to in-depth knowledge of the concept and thus influence the development of strategies to devise teaching programmes and models, as well as teaching and evaluation strategies, especially because it is difficult to evaluate a concept with no clear definition (Videbeck 1997:5). In addition, key performance areas and outcomes could be developed to measure the outcome of critical thinking.

1.3.2 Problem statement

There is evidence that critical thinking is a necessary requirement for the accreditation of professional nursing worldwide. There seems to be a lack of clarity on the meaning of the concept. Before proceeding further, there is a need to clarify the concept of critical thinking.

The concept of critical thinking tends to be problematic when one thinks of an educational programme as an answer to the creative use of critical thinking abilities in nursing practice. Nursing programmes are required to develop students who on completion of their training are able to use critical thinking abilities in the execution of nursing activities (Brock & Butts 1998:6). As mentioned earlier, critical thinking has not yet been adequately defined since the process is complicated. Thus, it is necessary to clarify the concept.

1.3.3 Research question

The research question is thus stated as WHAT DOES CRITICAL THINKING ENTAIL?

The main research question raises the following questions:

- What are the core or essential elements of critical thinking?
- What are the antecedents and consequences of critical thinking?
- What would make for a model case of critical thinking?

With the above in mind, the investigator recognised the problem as a lack of clarity on the meaning of the concept *critical thinking*, hence the objective of this research was to clarify this concept.

1.4 AIMS OF CONCEPT ANALYSIS

According to Walker and Avant (1995:38), the purpose of concept analysis is to

- explicate the defining and irrelevant attributes of a concept to elicit the pertinent examples of the concept and its non-examples
- enhance communication of the attributes of the concepts used in theory development
- refine ambiguous concepts
- develop operational definition of the concept
- develop a descriptive theory of the concept

Emanating from the statement of the problem, the aim and objectives of the study are given below.

1.4.1 Purpose of the study

The study was directed at exploring the concept *critical thinking* through concept analysis in order to develop a comprehensive descriptive definition of critical thinking.

1.4.2 Objectives

The objectives of this study were to

- reveal the concept of critical thinking as it manifests itself in literature
- identify the defining attributes/characteristics of critical thinking
- determine the antecedents of critical thinking
- construct a model case
- construct additional cases, namely borderline, contrary, illegitimate and invented cases
- define empirical referents
- develop a descriptive theory
- develop a comprehensive definition of critical thinking

1.5 ASSUMPTIONS

In qualitative research, assumptions take the place that theoretical frameworks take in quantitative research. Assumptions are basic principles that are accepted as being true on the basis of logic or reason without proof or verification (Polit & Hungler 1999:10). Assumptions form the foundation of a study. According to Kuhn (in Mouton & Marais 1990:146), there are three areas of commitment namely:

- assumptions regarding theoretic-conceptual commitments
- assumptions regarding methodological-technical commitments
- assumptions pertaining to ontological commitments

1.5.1 Theoretic-conceptual commitments

Theoretical-conceptual commitments are about accuracy or truth of the theories and laws of a particular paradigm (Mouton & Marais 1990:147). In this regard it is assumed that

- concept analysis is an appropriate research design to pursue the enquiry on what critical thinking entails
- the qualitative research paradigm sets the stage for realising concept analysis

1.5.2 Methodological–technical commitments

Methodological–technical commitments are commitments to the criteria regarded as scientific and to the methodology and instrumentation by means of which a given view of what is scientifically valid may be realised (Mouton & Marais 1990:147; Mouton 1996:124). In this regard, it is assumed that

- Guba’s model is adequate to ensure research rigour.
- trustworthiness can be maintained by complete descriptions of the research methodology
- selective sampling of data is permissible to acquire the required information on the research topic

- concept analysis coupled with elements of grounded theory as data analysis procedure allows for the in-depth analysis and comprehensive description of the concept under investigation
- the object of intention (critical thinking) is also the essence of the process of data analysis and methodology
- comparative data analysis allows for the analysis and synthesis of the literature into a relatively unique re-conceptualisation of the concept under investigation

1.5.3 Ontological commitments

Ontological commitments are assumptions concerning the nature of the research object (Marais 1996:46,124; Mouton & Marais 1990:11,147; Polit & Hungler 1999:10). In this instance it is assumed that

- critical thinking is a human mental operation, be it obscure
- different authors' definitions and descriptions of the concept *critical thinking* pertain to the same human experience and ability

1.6 SIGNIFICANCE OF THE STUDY

The study is significant as it aims at uncovering the salient features of the concept *critical thinking*. These aspects are critical in the development of teaching programmes, and teaching and evaluation models. The exploration was directed at improving nursing practice by developing nurse training and education. The belief is that critical thinking nurses are competent practitioners (Abegglen 1997:452; Lowdermilk & Fishel 1991:34; Malek 1986:20). It is therefore important that today's nurses possess critical thinking abilities (Pardue 1987:355).

The worldwide trend is for nurse practitioners to think critically if they are to cope with increasing acuity and complexity in health problems. As a result, there is a need for a paradigm shift from mere reproduction of content to a curriculum that will develop critical thinking (Vaughan-Wrobel, O'Sullivan & Smith 1997:487).

As stated, clarifying the concept enhances the development of teaching strategies and evaluation instruments. It is the researcher's belief that the study could contribute to the improvement of nursing practice as it provides mechanisms for the development of programme policies and guidelines for nurse training. The study of critical thinking is believed to be the route to filling the practice and theory gap.

Pardue (1987:359) found that mere possession of knowledge of critical thinking is not enough, but students need to be equipped with strategies that will help transfer the knowledge to practice. Clarity regarding the concept could guide the teacher towards instilling such strategies. This study's results also indicate such strategies (see chapter 4, section 4.3.2.5.11).

The move to critical thinking in nursing is emphasised but the concept remains illusive due to lack of appropriate operationalisation. This requires the development of curricula that will help nurses transfer their learning into practice (Abegglen & Conger 1997:452). A thorough understanding of the concept *critical thinking* is required before curricula can be developed.

Exploring the concept *critical thinking* should lead to an in-depth understanding of the concept. This can be used in the development of models to empower students and enable nurses to face the challenges in health care delivery more confidently (Worrel, McGinn, Black, Holloway & Ney 1996:127).

1.7 SCOPE AND LIMITATION

Although the study was conducted primarily on critical thinking in nursing, other disciplines, such as general education, philosophy and social science, also impacted on this study. The works of various authors, who view critical thinking from different epistemologies, were consulted and contributed to a better understanding of the concept of critical thinking.

A limiting factor was that only opinions from tutors were considered while contextualised experiential sources and human experiences were not utilised. The reason for this was that experts were not available and still needed to be identified.

Data saturation might have been a problem as it is rather “mythical”. The fact of the matter is that at some stage, the research has to be discontinued, resulting in premature closure (Chenitz & Swanson 1986:112). Data saturation was reached when no new relevant information emerged, themes and categories became repetitive and redundant, and the relationships between categories were well established and validated.

1.8 DEFINITION OF TERMS

The following terms are used in this study:

Audit trail: Systematic collection of materials and documentation that will allow an independent auditor to come to conclusions about the data (Lincoln & Guba 1985:283).

Axial coding: A set of procedures whereby data are put back together in new ways after open coding by making connections between categories (Strauss & Corbin 1990:96).

Concept: A mental construction that contains defining attributes that help distinguish it from other related concepts (Walker & Avant 1995:38).

Concept analysis: A formal linguistic procedure to determine the essential attributes of a phenomenon and its related characteristics, dimensions and related properties (Walker & Avant 1995:38).

Confirmability: Objectivity or neutrality of data (Polit & Hungler 1999:430).

Constant comparison: Analysis and coding of data throughout and simultaneous data collection and comparing these to other data obtained and to literature (Field & Morse 1994:113; Lincoln & Guba 1985: 332).

Contrasting: Analysis of the core differences (*Concise Oxford Dictionary* 1991:250).

Credibility: Confidence in truth of data (Polit & Hungler 1995:362).

Dependability: The stability of data over time and conditions such that replication is possible (Polit & Hungler 1995:362).

Grounded theory: A highly evolved and explicitly codified method for developing categories and propositions about their relationships from qualitative data and is integrated with constant comparative method (Wilson 1989:726).

Nursing education: The education and training involved in the professionalisation of students registered in terms of Regulation R425, as amended (South African Nursing Council 1985). Nursing education involves both classroom teaching and clinical experience of students.

Open coding: An analysis that pertains to the naming of categories through close examination of data (De Vos 1998:271).

Outliers: Exceptions that are not easy to include in categories developed during axial coding (Miles & Huberman 1994:26).

Purposive sampling: Judgemental sampling that involves the conscious selection by the researcher of certain elements to include in the study according to the needs of the study (Burns & Grove 1993:246).

Qualitative research: For the purpose of this study, qualitative research is defined as inductive, holistic and process-oriented research used to understand, interpret, describe, and develop theories pertaining to the concept (Burns & Grove 1993:65).

Selective coding: The process of selecting a core category and systematically relating it to other categories validating those relationships, and filling in categories that need further refinement (Strauss & Corbin 1990:116).

Selective sampling: The sample is selected as it proves relevant to the concept under study.

Sufficiency: Validity of research in terms of assessment of data, relevance completeness and amount of information obtained (Chenitz & Swanson 1986:10).

Theory: A creative and rigorous grouping and structuring of knowledge and ideas to enhance the understanding of critical thinking (operational).

Theoretical sampling: Sampling on the basis of concepts that have proven theoretical relevance to the evolving theory (Streubert & Carpenter 1999:332).

Triangulation: The use of multiple methods to collect and interpret data about some phenomenon in order to converge on an accurate representation of reality (Polit & Hungler: 362).

Trustworthiness: The extent to which findings provide truth-value of data collected (Lincoln & Guba 1985:290).

1.9 OUTLINE OF THE STUDY

Chapter 1 introduces the study and outlines the need for critical thinking and a clear definition thereof.

Chapter 2 describes the research methodology used in the study.

Chapter 3 identifies uses of the concept and describes the data gathering techniques, including the literature review.

Chapter 4 discusses the data analysis and interpretation.

Chapter 5 concludes the study and presents the findings and their implications and conclusions.

1.10 CONCLUSION

This chapter introduced the study and discussed the need for critical thinking for national and international accreditation in nursing. However, there is no consensus on the definition of *critical thinking* therefore the purpose of this study is to clarify its definition. The problem was stated and the research question to be examined in this study was posed. Finally, an outline of the study was presented.

Chapter 2 discusses the research methodology.