CHAPTER 3
DESIGN, INSTRUMENTATION AND PROCEDURE

3.1 INTRODUCTION

In this chapter, the design of the meta-analysis study on reflective practice is discussed. The sample of this study consists of fifteen research articles. Various forms have been specifically designed for the purpose of identifying and collecting all relevant data from these fifteen articles. The three main sources of data are 1) the objectives and purposes of studies, 2) the methodologies and 3) the research findings.

3.2 Design of the study

The present study is based on a method known as meta-analysis which is more systematic than the traditional literature review (Kylma & Vehvilainen-Fulkunen , 1997). This particular concept of analysis can be likened to 'analysis of the analysis'. The method involves merging findings from many studies that have examined the same phenomena. Meta-analysis has been described as a quantitative method of linking experimental studies (Moody 1990, cited by Kylma & Vehvilainen-Fulkunen, 1997) and it usually includes statistical analysis of sampled research studies for purpose of synthesizing the multiple research findings (Beck, 1997; Handey and Mulball,1994).

However, Beck (1993) also argues that meta-analysis need not be a statistical procedure only. More importantly, meta-analysis functions well as a comprehensive approach to analyze and integrate different areas of study. The emphasis here is on the descriptive function of meta-analysis which focuses on the key variables like the theoretical structures of individual studies, their methodologies, the research results and other variables deemed appropriate.

Although researchers may differ slightly in the descriptions of the process of meta-analysis, the following basic stages will still apply : (a) definition of the research problem and identification of the studies included in the meta-analysis,

(b) collection of data related to the research area, (c) classification and coding of the distinctive characteristics /variables of the studies, (d) qualitative/ quantitative examination of those characteristics/variables, and (e) compilation of the results of the meta-analysis and comparison with the characteristics/variables of the studies examined. (Curlette & Cannella 1985; Bangert-Drowns 1986, cited by Kylma & Vehvilainen-Juljunen, 1997).

The design of this study is based on the descriptive function of meta-analysis and will not involve any statistical procedure in merging the findings. The application of statistical procedure was not suitable because of the qualitative nature of the research studies sampled. The study examined an important nursing topic of reflective practice in a meta-analysis of fifteen published research articles. For purpose of this study, a meta-analysis code book was developed to code the extracted variables from each of the fifteen articles. These variables covered the key areas of : 1) objectives and purposes, 2) methodologies and 3) research findings. Data obtained was subsequently analysed to provide answers to the three research questions of the current study.

3.3 SAMPLING PROCEDURE

The material for the study consisted of research articles published in the field of nursing research on the subject of reflective practice. Searches for source material were carried out mainly through on-line databases such as the Cumulative Index and Allied Health Literature (CINAHL).Using 'reflective practice' and 'reflection' as the key words, the CINAHL database was searched; covering the period from 1990 to 1999. This period represented the time when reflective practice was most frequently mentioned in the nursing literature.

Another approach known as the ancestry approach (Beck, 1997) was also used to track additional references. This involved going through the citations and bibliographies of previously located literature. A hand-search of selected journals were also carried out to locate extra publications.

Two main criteria were used to make decisions regarding the inclusion of potential studies in this meta-analysis study. The chief criteria was any published

nursing research study done in the area of reflective practice. The search did not include unpublished studies like dissertations and conference abstracts. The other criteria referred to the time frame from 1990-1999 when these articles were published. These criteria were chosen after considering various constraints like time and resource.

The literature search resulted in a sample of twenty-one studies, of which fifteen fitted the criteria for inclusion. The remaining six research articles were found ineligible due to a variety of reasons. While the main focus of two of these studies were on critical thinking and reflective thinking, the other four articles consisted of only partial reports of their studies. Table 1 below shows the list of the fifteen research articles:

Table 3.1

Distribution of Eligible Research Articles

No.	Author/Year	Title	Source
1	Snowball, J., Ross, K., & Murphy, K. 1994	Illuminating dissertation supervision through reflection.	Journal of Advanced Nursing (19), 1234-1240
2	Davies, E. 1995	Reflective practice: a focus for caring.	Journal of Nursing Education 34 (4), 167-170
3	Burnard, P. 1995	Nurse educators' perceptions of reflection and reflective practice: a report of a descriptive study.	Journal of Advanced Nursing 21, 1167-1174
4	Shields, E. 1995	Reflection and learning in student nurses.	Nurse Education Today 15, 452-458
5	Glen, S., Clark, A., & Nicol, M. 1995	Reflecting on reflection: a personal encounter.	Nurse Education Today 15, 61-68

6	Wong, FKY., Kember,D., Chung LYF. & Yan, L. 1995	Assessing the level of student reflection from reflective journals.	Journal of Advanced Nursing 22, 48-57
7	Richardson, G. & Maltby, H. 1995	Reflection-on-reflection: enhancing student learning.	Journal of Advanced Nursing 22, 235-242
8	Stoddart, B., Cope, P., Inglis., McIntosh., & Hislop,Stuart. 1996	Student reflective groups at a Scottish College of Nursing.	Nursing Education Today 16, 473-442

9	Durgahee, T. 1996	Promoting reflection in post-graduate nursing: a theoretical model.	Nursing Education Today 16, 419-426
10	Mountford, B. & Rogers, L. 1996	Using individual and group reflection in and on assessing as a tool for effective learning.	Journal of Advanced Nursing 24, 1127-1134
11	Getliffe, K.A. 1996	An examination of the use of reflection in the assessment of practice for undergraduate nursing students.	International Journal of Nursing Studies (33) 4, 361-374
12	Taylor, B. 1997	Big battles for small gains: a cautionary note for teaching reflective processes in nursing and midwifery practice.	Nursing Inquiry 4, 19-26
13	Hallett, CE. 1997	Learning through reflection in the community: the relevance of Schon's theories of coaching to nursing education.	International Journal of Nursing Studies (34) 2, 103-110

14	Wong, FKY., Loke, AYL., Wong, M., Tse, H., Kan, E. & Kember,. 1997	An action research study into the development of nurses as reflective practitioners.	Journal of Nursing Education (36) 10, 476-481
15	Malik, M. 1998	The role of nurse educators in the development of reflective practitioners: a selective case study of the Australian and UK experience.	Nurse Education Today 18, 52-63

3.4 INSTRUMENTATION

A standardised record form is needed for data collection in this meta-analysis study. A seven- page coding book form was developed for the systematic collection of information on : 1) the objectives and purposes of studies, 2) the methodologies which include samples, data collection methods and data analysis methods, and 3) the research findings. Recording forms were mainly straight- forward ones, consisting of appropriate rows and columns to code the relevant data..

3.5 DATA COLLECTION

This section explains the procedure involved in the collection of relevant data from the sample of fifteen research articles (Table 1). The data was individually extracted from each of the fifteen articles on the three key areas for purpose of answering the study's three research questions. The meta-analysis code book was used to code the extracted information on the three key variables of: 1) objectives and purposes of studies, 2) methodologies, and 3) findings.

Initially, all selected studies were read carefully in order to gain a general picture of the material. A minimum of two focused readings were necessary before the process of coding for relevant data began. Data collection on the variable of methodology included information on the sample size of the studies, the methods of data collection and the data analysis methods. During reading, the identified information were either highlighted or underlined. This is to facilitate the coding process. The collection and coding of data on the third variable of findings proved to be the most challenging one. The whole process of extracting and coding data was done in a systematic manner as explained below:

3.5.1 Coding of objectives and purposes

The coding of objectives and purposes of the fifteen research articles was a straight forward procedure. The identified data was coded directly in the form which also had additional information like the authors names and year when articles were published.

3.5.2 Coding of methodology

The variable of methodology included the study's sample, i.e. the research participants, and the methods of data collection and data analysis. No major problem was encountered during identification of these data from the fifteen articles. The coding of sample included the number of research participants and their professional status like students, educators or supervisors. Identified information on the data collection methods and data analysis methods was coded simultaneously on the same form. The coding process also included the authors names and year of publications.

3.5.3 Coding of research findings

Data collection on research findings involved identification and coding of all results reported in the fifteen studies. The procedure began with repeated readings of the research articles focusing on the results and discussions section. Findings which were easily identified were first underlined and coded later onto the coding forms. When results appeared unclear or obscured due to the qualitative way of result presentation or the researcher's academic style of writing, findings had to be 'filtered' and

occasionally rephrased. Together with the findings, the authors' names and the year of publications were also coded.

It was appropriate to note here that the coding of research findings was difficult and frustrating at times. Firstly, the research articles were limited by words during publication leading to facts being 'squeezed'. Secondly, all fifteen research articles sampled in this study were qualitative studies where interviews and diary entries were mostly used to collect data. As such, results presentation and discussions were frequently interjected with direct quotes or exemplars. There were times when results became 'embedded' or obscured leaving the researcher to piece together the actual results. Thirdly, this study did not use a second coder. However, it was believed that the coding procedure adopted here was appropriate in meeting the need to collect data on research findings.

3.6 DATA ANALYSIS

This section explains the procedure involved in the analysis of data which had been coded from the three variables of : 1) objectives and purposes, 2) methodologies, and 3)findings. Analysis of data was carried out with the aim of getting a set of focused data which can help to answer the study's research questions. Shown below are the three sub-sections on data analysis procedure.

3.6.1 DATA ANALYSIS OF OBJECTIVES AND PURPOSES

The initial coded data was subjected to content analysis looking for major themes within the objectives and purposes. The thematic analysis was done for each of the fifteen research articles. Minor themes were analyzed for studies which have more than one objective. Descriptive statistics was used to analyze the distribution of major and minor themes.

3.6.2 DATA ANALYSIS OF METHODOLOY

The methodological variables of samples (research participants), data collection methods and data analysis methods were tabulated to show their distributions.

Description of the tabulated data was done in numbers only as percentage count was deemed unnecessary.

3.6.3 DATA ANALYSIS OF FINDINGS

Data on findings was analyzed by using thematic analysis that searched for similarities leading to major and minor themes within the data (Davies, 1995). The analysis was guided by the constant comparative method described by Glaser and Strauss (1969, cited by Davies,1995). Initially, broad categories were established based on similarity of content. Content within each category was then compared to the major characteristic of the category to search for possible relationships between the categories. Integration of categories was carried out if relationships existed. This was followed by a validation process to ensure saturation of content.

Due to the diverse nature of the data collected from the findings, the procedure involved in the thematic analysis of the findings was a difficult one. The constant comparative method mentioned above proved to be a useful guide in the final analysis.