COMPETENCY-BASED ASSESSMENT: *a holistic approach for developing and demonstrating 'competence'*

(a literature review)

A minor thesis presented in fulfilment of the requirements for the degree of Master of Nursing (Advanced Practice)

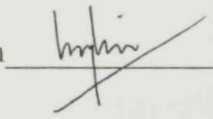
The University of Newcastle

Asiya Ibrahim

June 2000

DECLARATION

I hereby certify the work embodied in this thesis is the result of original work and has not been submitted elsewhere.

Asiya Ibrahim 

ACKNOWLEDGEMENT

My sincere thanks go to all those who in some way assisted me throughout the process of completing this thesis. I wish to wholeheartedly thank my supervisor, Vicki Parker for her guidance, feedback and support. Also for her encouragement and thoughtful attention in extending my writing skills. Thank you, for those few that helped me with such aspects as formatting and checking the reference with the thesis. I wish also to thank my family for their support and encouragement. Lastly, my biggest thanks goes to my husband Wahid for his patience, understanding and love.

Asiya Ibrahim

LIST OF ABBREVIATIONS

ANCI	Australian Nursing Council Incorporated
ANF	Australian Nursing Federation
ANRAC	Australian Nursing Council Registering Authorities Conference
BN	Bachelor of Nursing
BSN	Bachelor of Science in Nursing
CACCN	Confederation of Critical Care Nurses Incorporated
CPA	Competency Performance Assessment
CPE	Competency Performance Examination
DACUM	Developing a Curriculum Model
ENB	English National Board
FEU	Further Education Unit
IHS	Institute of Health Sciences
JCAHO	Joint Commission of Accreditation of Healthcare, Organizations
NCAP	Nursing Competence Assessment Project
NOOSR	National Office of Overseas Skills Recognition
NTB	National Training Board
NCVQ	National Council for Vocational Qualification
NVQ	National Vocational Qualification
OSCA	Objective Structured Clinical Assessment
OSCE	Objective Structured Clinical Examination
PBL	Problem Based Learning
UKCC	United Kingdom Central Council
UWSM	University of Western Sydney, Macarthur

TABLE OF CONTENTS

ABSTRACT

This thesis presents an analysis of competency-based approaches to assessment. An extensive literature review was conducted to explore aspects and issues involved in developing and implementing competency-based assessment. The review was based on the premise that literature can provide useful information to implement an ongoing competency based approach to assessment of undergraduate nursing students in The Republic of Maldives.

The recent literature relating to competency-based approaches to education and assessment values this method for its contribution to the development of a more comprehensive view of education and assessment, particularly in nursing. The main theme that developed from analysis of the literature was that developing a competency-based assessment framework could facilitate an individual to develop and demonstrate *competency* for professional practice. *Competency-based assessment* has been described in the literature as a process of measuring an individual's competence against established competency standards. These competency standards when explicitly stated will clearly identify for the student, the competencies that need to be developed by the end of the course of study and which are necessary to enter into a profession.

Review of literature reveals that there is confusion arising in the use of term *competency*. However, the contemporary view of competency is that they are the attributes which need to be acquired to perform successfully in a profession. There is consensus in the literature that this method of education and assessment facilitates learning that is meaningful, personal, challenging and relevant to practice. There are several studies that have focused on the development and implementation of effective competency-based approaches, especially in practice based professions, such as nursing. Thus, it is proposed that, competency-based assessment is the most effective method of assessment to be implemented in the undergraduate nursing in the Maldives.

CHAPTER 1

INTRODUCTION

> *Education is not acquiring a stock of ready-made ideas, images, sentiments, beliefs, and so forth; it is learning to listen, to think, to feel, to imagine, to believe, to understand, to choose and to wish.*
>
> (Oakestohott, 1989, p.66-67, cited in Modly, 1995)

The public demands that healthcare providers meet minimum levels of competence and demonstrate it throughout their careers. Healthcare facilities are obligated to ensure those standards of care for patients and standards of performance of nurses are met in order to provide competent and caring personnel (Forker, 1996; Burbach, 1999; Dawes, 1999). Since the public expects safe and competent nursing care, individual nurses themselves need to be responsible for assuring competence to the public (Burbach, 1999). Education provides the basis for developing the competencies required for nurses to carry out their professional activities effectively. In developing these competencies it is the role of educators to provide nursing students with opportunities to develop the knowledge and skills necessary for safe and effective practice (Fahy & Lumby, 1988).

Clinical competence is one of the major objectives in nursing education (Lofmark, Hannersjo, & Wikblad, 1999). Both the nursing profession and the public expect nurses to display a high degree of proficiency and expertise in carrying out the diverse aspects of the nurse's role (Hendry & Farley, 1997). For this reason, educators need to collaborate with consumers of healthcare and employers in healthcare organisations to determine the knowledge and skill needed for practice (Burbach, 1999). Since nursing education is about the production of competent practitioners for the healthcare arena, the aim of nursing education is to educate nurses who will always strive to provide high quality patient/client care (While, 1994).

Within nursing education, it is important to foster motivation of students to ensure that learning is meaningful, which will make what is taught relevant for practice in nursing (Ewan & White, 1996). Unlike traditional professional education, competency-based education emphasises what the learner must know on completion of their learning, ensuring that learners can fulfil the daily role required as practitioners (Fearon, 1998). Students learn most effectively when what they are learning is likely to be examined (Ewan & White, 1996). Hence, the students' real curriculum is shown in the assessment approach and how it is carried out (Little, Bujack & McMillan, 1994). Assessment needs to be designed to elicit the desired behaviour and a range of performances, that should be directly related to specific outcomes (Thompson & Bartels 1999). Since competency-based education is based on the premise that an individual must demonstrate his or her ability to perform skills and activities, assessment should be designed to elicit these competencies to ensure that graduates have the required competencies to practice (Speers, Gilberg & Koch, 1995).

In this minor thesis I will critically analyse the concept of competency-based assessment. Published studies can provide useful information on what has been found in this method of education and assessment. Critical review mechanisms will enable me to examine if competency-based assessment is the most appropriate assessment strategy that can be proposed for assessing undergraduate nursing students in The Republic of Maldives. However, in referring to the Maldivian nursing context and education a very limited amount of literature will be used, as there is very little Maldivian nursing literature available. A personal point of view will be expressed in these instances.

Background Context Of The Literature Review

Maldivian nursing context

This is a time of crucial change in both the nursing profession and nursing education in the Maldives. The Government of the Maldives established a regulatory authority in 1999, the Maldivian Nursing Council. The objectives of this Council are regulation of nursing professionals, their practice and the regulation of nursing education in the Maldives. The

only institute in the Maldives that provides higher education in nursing is the Institute of Health Sciences (IHS).

The IHS began preparation of professional nurses in 1991 with the commencement of a Diploma in Nursing and Midwifery course. The philosophy of this institute is to train health personnel, including nursing professionals to become self-sufficient in meeting the various health service demands of the people. The Diploma in Nursing and Midwifery course provides the education to produce qualified nursing professionals for hospital and community settings in the Maldives. It is stated in the IHS philosophy that only professional nurses can deliver competent nursing (Institute of Health Sciences, IHS, 1990). To achieve this aim, nursing students are provided with knowledge and practice, which will facilitate the students graduating with beginning competence to practise professional nursing. Students spend a large part of their course, learning in the clinical setting. However, a main problem faced is inadequate supervision of students and also the clinical nurses who are the mentors for the students are sometimes unaware of the students learning needs. Clinical education shapes the attitudes and practices of the student in the practice setting. It is a powerful influence in transmitting values to the students, as it provides the learners with learning opportunities (Ferguson & Jinks, 1994). Therefore, clinical educators in nursing are responsible and accountable, to ensure their graduates are equipped for competent practice. Assessment in nursing education is a common concern for all educators as it the process by which students demonstrate their abilities and capabilities in providing nursing care (Fahy & Lumby, 1988).

Whilst clinical education and clinical performance are highly valued, the methods used for assessment of clinical performance are problematic when they are more task oriented and repetitive. Hence, it is questionable as to whether assessment truly reflects the scope of competencies necessary for practice. Current assessment strategies used for assessing clinical performance of the nursing students in IHS involve both formative and summative assessment methods. At the end of the students' clinical posting in each area of speciality, they are assessed formatively for their clinical performance. Assessment is undertaken, using a checklist and is based on the observations of the clinical nurse's, or educator's

judgement of each student's performance in the ward. Summative assessment of students is performed at the end of each semester, by conducting a practical exam in the clinical area. The assessment involves judgement, made on the basis of observation of each student's performance using a checklist while the student is caring for a patient. This practical exam also encompasses oral questioning to ascertain the knowledge of the student. The checklist used in both formative and summative assessment involves observing and determining the student's ability to provide comprehensive nursing care and performance of different psychomotor and behavioural skills. There are varying degrees of opinion among those involved in nursing education and nursing practice regarding assessment of the students. For example there are views expressed such as, assessment has not been adequately performed and there are better ways of assessing than using the existing system of assessment. Students express a high level of anxiety during the practical examination in the ward.

Within IHS there are many changes taking place in nursing education, which includes change in the curriculum, teaching and assessment strategies. The nursing curriculum is being revised with a defined focus on a student-centred approach to instruction, which is a shift away from the traditional teacher-centred instruction of previous years. The new curriculum of IHS is based on a set of competencies that have been identified by the professional nursing teachers teaching in the program. These competencies are now to be used as a basis for assessing students at different stages of their course. It has been stated in the Maldivian Health Master Plan 1996-2005, that special attention is needed to be given to the assessment strategies used in IHS, as there is a need to improve the assessment process to ensure high quality graduates (Ministry of Health, 1998). As a nurse teacher involved in nursing education at IHS, I take interest in aspects of assessment of nursing students. Since assessment is an important aspect of nursing education, it is important to find better ways of assessing students in order to develop and advance the nursing education in the Maldives. Clinical education is the one of the most important aspects of nursing education in preparing the professional nurses and assessment of clinical performance needs to be performed well to reflect the scope of competencies of the graduating nurses.

Assessment in nursing education

Assessment in nursing education has been widely discussed and clinical evaluation is one of the most debated components of nursing education (Pavlish, 1987; Fahy & Lumby, 1988; Malko, 1988; While, 1991; Clifford, 1994; Mahara, 1998; Priest & Roberts, 1998). Assessment is defined as placing an interpretation on measurement of information regarding a student's performance (Lovat & Smith, 1995). The term *assessment* and *evaluation* are often used interchangeably in education and in the literature. If assessment tries to discover what students have accomplished, then evaluation tries to determine the same for the course or learning experience or episode of teaching (Rowntree, 1987). The purpose of evaluation is to identify and explain the effects of teaching and student assessment. In American literature the term *assessment* is rarely used. Instead *evaluation* is used in referring to both processes. Zvacek (1997) identifies though, that assessment is often used synonymously with evaluation, there are however, important differences. Assessment is the measurement of learning, whereas evaluation is the judgement made based on the information gathered from assessment (Zvacek, 1997). In this review focus is on assessment of student learning.

Research on learning over the last fifteen years has brought into the focus the central role of assessment in shaping learning, in both negative and positive directions. It can compel the student into surface learning, but at the same time it can provide the opportunity to apply newly acquired knowledge to real and challenging problems (Nightingale et al, 1996).

Assessment serves many purposes in education. Assessment ascertains whether students have achieved their potential and have acquired the knowledge, skills and abilities set for a course and curriculum (Kirkpatrick, DeWitt-Waever, & Yeager, 1998; Mahara, 1998). Assessment information is used to inform and make judgements about students' qualities, abilities and knowledge (Milligan, 1998). Hence, the primary goal is to enhance students learning by encouraging them to further develop knowledge and skill for professional practice (Reilly & Oermann, 1992; Thompsons & Bartel, 1999). In nursing education, one of the most important aims of assessment is the regulatory purpose where a definitive

judgement is made as to whether a student's practice meets the standards set by the profession, and also whether the student has met the academic requirements of a clinical course (Mahara, 1998). Hence, the most important purpose is the *gate keeping* function, where the professional standard is maintained, assuring the public that qualified nurses are autonomous practitioners ready for practice (Mahara, 1998).

There is an abundance of literature, which identifies assessment of clinical practice in nursing education as being problematic (Pavlish, 1987; Malko; 1988; Hepworth, 1991; While, 1991; Cernick & Evans, 1992; Chambers, 1998; Woolley, Bryan & Davis, 1998). Many of these problems arise due to the nature of nursing work. Nursing is a complex activity with much of its activity hidden from the observer (Reed & Procter, 1993). Further, it is difficult to observe or objectively measure what are considered humanistic aspects of nursing (Chapman, 1999).

When deciding on the strategies used to assess, the decision must be also made on what students are to learn and why they need to learn. In a sound curriculum, there is a clear relationship between the desired outcomes or competencies to be developed and the content and process of the curriculum (Little et al, 1994). Clinical objectives communicate to the learner, the behaviours and competencies that will be evaluated. Students can direct their learning to achieving those objectives and developing those competencies (Reilly & Oermann, 1992). Hence, the choice of assessment methods is the most critical element influencing teaching and learning and also determining the standard for competent practice. Students will reflect constantly on what the assessment is intending to develop and test. Most assessment approaches used in professional education programs in higher education do not articulate the link between the assessment activity and competence in the professional activity (Little et al, 1994). This is also one of the main problems identified in assessment of nursing students at IHS in the Maldives, where most of the time they are not clear about the assessment and the intended learning outcomes.

Four widely accepted reasons for dissatisfaction with traditional assessment have been identified, these are:

1. Traditional assessment methods sample a very narrow range of practice situations compared to what a professional usually encounters in day to day activity;
2. Assessment of knowledge is given more importance, compared to assessment of performance, due to the convenience of assessing knowledge with the available technology;
3. Assessors prefer indirect and unstructured methods of assessing performance, as assessment of performance is time-consuming and assessors have other responsibilities to fulfil; and
4. The assessment methods used in traditional assessment have very little scope for assessment of personal traits and attitudes.

(Butler, 1990)

There are moves in modern assessment practice away from emphasis only on knowledge, and towards assessment strategies that will be able to measure the professional role for which the practitioner is being prepared (Butler, 1990). The competency-based movement attempts to make explicit, the skill standards necessary for competent practice. When these are explicitly stated, the learning process becomes clearer for the students (Masters & McCurry, 1990).

Several studies have highlighted the use of competency-based approach in education. (Thurmen & Sanders, 1987; Little et al, 1994; Conway, Chen & Jefferies, 1999). Competency based education was found to be effective in improving students learning and performance (Thurmen & Sanders, 1987). Competency-based learning focuses on learning as meaningful, personal, relevant to practice and challenging. Hence, it becomes the faculty's responsibility to develop a variety of strategies that enhance students' learning as well as developing clinical competence, by providing opportunities for students to be active participants in guided realistic clinical situations. Hence, there will be opportunities to develop critical thinking and clinical judgement and move beyond a *skilled-care* oriented knowledge base to practice based on self reliance, reflective thinking and a holistic

approach to clinical problems (Bechtel, Davidhizar & Bradshaw, 1999). In competency-based education there is a requirement for students to develop skills in identifying their own strengths and weakness in relation to developing the desirable competencies of a professional practitioner (Little et al, 1994).

Competency-based education facilitates development of the professional competencies clearly relevant to work, and hence facilitates entry and progression in employment. Competencies are also a framework that can specify standards that state the knowledge, skills and understanding required for performance (Milligan, 1998). Having said this, there are criticisms of competency-based education identified within literature (Ashworth & Morrison, 1991; Goldsmith, 1999). However, Speers et al (1995) suggest that the advantages of competency-based education clearly outweigh the disadvantages. Some advantages of competency- based education are that it is outcome focused, incorporates the actual work setting as the learning environment, uses criterion-referenced evaluation, and also emphasises performance over sheer knowledge. However, the disadvantage is that the initial assessment and planning require extensive time, and it essentially focuses on outcomes (Speers et al 1995). In competency-based education, before any judgement about the learner's performance is made, a fair assessment of evidence must be undertaken by performing assessment a number of times and in different related contexts (Fearon, 1998).

There is an abundance of nursing literature which documents competency-based education and competency-based assessment (Speers et al, 1995). This literature offers examples of models of competency-based education and competency-based assessment, which have proven to be effective, and as well as discussing some of the factors which impact on successful implementation of competency-based educational programs.

Purpose Of The Literature Review

Literature can uncover conceptual and empirical knowledge in relation to a particular subject. Hence, through a literature review new knowledge and developments from research and other sources can be revealed and critically appraised to provide evidence for education and practice (Beanland, Schneider, LoBiondo-Wood & Haber, 1999).

The main purpose of this literature review is to analyse and critically review literature on *competency-based assessment*. It is important to examine the nature of *competency* and *competency-based education* in exploring competency-based assessment. Therefore, the literature will be reviewed especially in relation to how competency-based assessment is carried out, and the consequent implications for nursing education.

The overall goal is to critically review and critically analyse literature on competency-based assessment and to develop recommendations and a plan for implementing an ongoing competency-based assessment system in undergraduate nursing education in the Maldives.

Thus the aims of this literature review are:

- To trace the development of competency-based assessment;
- To identify and analyse the philosophical and methodological underpinnings of competency-based assessment;
- To review the available literature on competency and competency-based education and competency-based assessment in higher education, particularly focusing on nursing education;
- To review selected assessment strategies that are used in competency-based assessment and evaluate their appropriateness for inclusion in the nursing curriculum at the Institute of Health Sciences (IHS) in the Maldives;
- To critically analyse the literature and hence compare and contrast the various perspectives;

- To examine how competency-based assessment can be implemented within the nursing curriculum at IHS in the Maldives; and
- To develop recommendations and a plan for implementation and ongoing use of competency-based assessment in nursing education in the Maldives.

Following are the guiding questions that have been formulated to explore and analyse the literature:

- What is competency?
- What are philosophical and methodological underpinnings of competency-based assessment?
- What are some of the areas in which a competency-based approach to education is being used?
- What are the strength and weaknesses of these programs?
- How is competency-based assessment implemented in higher education and how has it been integrated into nursing education?
- What recommendations can be drawn from the literature review to inform the implementation and ongoing use of competency-based assessment in nursing education in the Republic of Maldives?

Sources of literature that will be included are computerised databases and reviewed articles. Computerised databases that will be searched will include CINAHL, NEWCAT, OVID collections, MEDLINE, and Educational databases. A number of Government publications and also books related to competency-based movement will also be reviewed. Even though, the literature review is based on an analysis of competency-based assessment in higher education with a major focus on nursing, apart from the nursing literature I will be exploring the literature of different disciplines such as education, the medical profession and other allied health professions to provide a more comprehensive review of competency-based assessment.

The search will be limited to materials published from 1980 to date. Literature on competency competency-based education and competency-based assessment has been published since late 1970s, but in nursing it has been only appearing since the early 1980s.

In this extensive literature review the aim is to conduct a disciplined and comprehensive analysis, specifically the review will include analysis of the following:

1. The essential terms, *competency*, *competency-based education* and *competency-based assessment*, to gain a clear understanding;
2. Empirical studies and articles/publications concerning *competency*, *competency-based education* and *competency-based assessment*. Articles that provide evidence, examples and evaluations of education program using competency-based approach will be given special attention; and
3. Issues in nursing and nursing education related to competency-based assessment.

Structure Of The Thesis

This thesis is presented in five chapters. In the Introduction I have presented the background and the goal and aims of the study, as well as a description of the process used in conducting this literature review.

In Chapter Two I will analyse the essential terms *competency*, *competency-based education* and *competency-based assessment*. Literature is explored to clarify the understanding of these terms to assist and inform the subsequent literature review.

Chapters Three and Four are the two chapters that I have structured to answer the questions that I have formulated for this review. In Chapter Three, I will focus on the historical development and implementation of competency-based education and assessment. In Chapter Four I will focus on issues related to developing competency-based assessment strategies, specifically portfolios and Objective Structured Clinical Assessments (OSCA).

In Chapter Five I will provide a discussion of the literature findings, and how they relate to nursing education and practice in general, and specifically to Maldivian nursing practice and education. Implications for practice, education and research will be drawn from the discussion. In this chapter I will also present the recommendations and a plan for implementation of a competency-based approach in assessment in Maldivian nursing education.

CHAPTER 2

TOWARDS A CLEARER UNDERSTANDING OF THE ESSENTIAL TERMS: concept analysis of *competency*, *competency-based education* and *competency-based assessment*

INTRODUCTION

In order to make meaningful any discussion on competency-based approaches to education and assessment it is essential to clearly identify and understand terms and concepts central to these approaches. Clarification of central concepts will assist in reviewing and analysing the subsequent literature on competency based assessment. Rogers (1997) recommends that focusing on literature to analyse concepts has numerous advantages, since the longevity of the terms in publications and institutionalisation of the terms within the social context can be explored. In this chapter I will explore and clarify understanding of the concept of *competency*, *competency-based education* and *competency-based assessment*.

There has been confusion, ambiguity and lack of clarity in usage of these terms in the literature. The term competency appears confusing and contradictory and it has also been identified by number of authors that there is no generally accepted definition of competence or exact phenomena which indicates competence (Tuxworth, 1989; Girot, 1993; While, 1994; Griffin, 1995; O'Connor, Pearce, Smith, Vogeli & Walton, 1999). In addition confusion arises because competence and competency are often used interchangeably, and also when *competence* is used to indicate a capacity in an individual, and as an element of a role in a profession or occupation (Tuxworth, 1989; Gurvis & Grey, 1995). Girot (1993), while reviewing literature on assessment of competency in clinical practice suggests that different authors have defined competence differently and so there is a perception of uncertainty regarding the term, especially in relation to finding ways of assessing it.

DEFINING COMPETENCE/COMPETENCY

Competency is one of the most commonly used terms in education today (Lenburg & Mitchell, 1991; Milligan, 1998). Chambers (1998) reviewed the literature to explore how different authors have used the term *competence*. She stated that although, The Oxford Dictionary (1984) defines *competence* as ability and *competent* as having the required ability, knowledge or authority, there seems to be little consensus in the literature about what the term competence actually implies. She suggests that the difficulties may be due to the fact that each individual may have different perceptions of the term *competence*. Short (1984) suggests confusion arise when *competence* is assumed as a descriptive concept rather than a normative concept and when it is referred to as a thing or activity rather than quality or state of being.

Various definitions of the term *competence/competency* appear in the literature. They arise from different disciplines and also different cultural contexts. The majority of definitions generally emphasise integration of the knowledge, skill and attitude required to perform a particular role. Particularly, earlier definitions of competency place emphasise on outcomes, which is the ability of the individual to perform the identified skill in a real situation (Parson & Capka, 1997). Nevertheless, there are major differences in various definitions given by different authors.

In one definition of competency in nursing, The National Council of State Boards of Nursing (United States of America, US) emphasise competency as the requirement of knowledge, interpersonal, decision making and psychomotor skills expected for the practice role, within the context of public health, safety and welfare (cited in Burbach, 1999). Here the emphasis is on public safety and welfare, which is an important component in a profession that provides health service to the public.

There are a number of definitions that stress the importance of experience in gaining competency, such as the definition given by the Further Education Unit (FEU, 1984) in the UK. They define competency as the need for acquisition and development of sufficient

skills, attitude and experience for successful performance of work. This definition gives importance to employment and other forms of work, where there is responsibility in a variety of roles and expectations, and includes experience as an essential component of competence (cited in Harris, Gurthrie, Hobart & Lundberg, 1995).

In nursing education students should be provided with the necessary experience and opportunities to gain the skills required for the profession. This facilitates the students to gain the ability to transfer skill and knowledge to new situations and environments. The following definition given by National Training Board (Australia) identifies the component of transferability of skill. They define competence as:

> *The concept of competence focuses on what is expected of an employee in the work place rather than on the learning process; and embodies the ability to transfer and apply skills and knowledge to new situations and environments.*
>
> (National Training Broad, NTB, 1992, p. 29)

The definition by NTB emphasises a broad concept of competence in all aspects of work performance and not only narrow skills. According to NTB competency involves the following abilities:

- To perform individual skills (task skills);
- To manage a number of different task within the job (task management skills);
- To respond to irregularities and breakdowns in routine (contingency management skills); and
- To deal with the responsibilities and expectations of work environment (job/role skills) including working with others.

(NTB, 1992)

According to the NTB definition, competency is not only performing at an expected level with experience, but also being able to adjust and carry out the skill in new situations. The definition proposed by NTB is line with Benner's model of *Novice to Expert* (1984), where

she talks about experience as a requisite for expertise and clinical knowledge gained over time even though clinicians are sometimes not aware of the gain in knowledge and experience (Benner, 1984). This definition is not very suitable in an educational context, as it does not emphasise the learning process, but the ability of the employee to complete the required task. Burbach (1999) defines competence in a similar manner to that of the definition by National Training Board. According to Burbach (1999) competence is an individual's capacity to perform his or her job functions whether or not he or she has the knowledge, skills, behaviours and personal characteristics necessary to function well in a particular situation (Burbach, 1999). Knowledge required is not given a high level of importance and disciplined attention within this conception of competency.

The Joint Commission of Accreditation of Healthcare, Organisation (JCAHO, US) provides a comprehensive definition of competency appropriate for nursing. They define competency as how well the individual integrates knowledge, skill and behaviour in delivering care according to expectations (cited in Burbach, 1999). This definition makes it clear for the nursing professional to be responsible for maintaining a certain standard of practice, within his/her scope and practice role. This definition will be used for the purpose of this review.

USE OF THE TERM *COMPETENCY*

Even though the term *competency* frequently appears in the educational and nursing literature, there is lack of consistency and often there is confusion in its use. The concept of competence in nursing gained prominence in the 1970s through the work of del Bueno (Lohrman & Kinkade, 1992). It is becoming important as nurses move across different settings and expand their horizon of practice (Dozier, 1998).

There are several ways in which *competency* has been used. Gelmon (1999) suggests competence is a descriptive term used in a positive and complimentary fashion. Lack of competence or questions of competence imply poor performance. Competence is also viewed in relation to developing vocational skills (Chapman, 1999). Therefore, competency

is sometimes identified in professions as something concerned with what people can do rather what they know (While, 1994). There is argument that this work related concept of competency is driving education exclusively towards a vocational direction in the interest of the employers and the profession, and not students (Chapman, 1999; Goldsmith, 1999). For most undergraduate nursing students this notion of competence implies that competence for the workplace is only where knowledge and skill is always transferred in a homogenous environment and also that the same skills are always performed in the same way. This is considered acontextual, whereas the purpose of nurse education is to prepare students to carry out competent and direct clinical nursing (Chapman, 1999).

Competency has also been viewed in terms of *outcome,* for example, Nagelsmith (1995) identifies that competence is used as an outcome criterion for effective education, coping and development. The notion of competency focusing on outcome has been challenged by a number of authors (Walker, 1995: Goldsmith, 1999). Walker (1995), in analysing the concept of competency, argues that when competency focuses on the outcome rather than the process, it gives way to instrumental, mechanistic and reductive direction in a competencies framework. Goldsmith (1999), too provides a similar view and states that if competency focuses only on outcome, which is achieving the desired behavioural objectives of skill acquisition, it leads to a positivist kind of scientific thinking, in which what you get is more important than how you got it. This notion of outcome focus fails to recognise the complexity of performance in nursing (Walker, 1995).

There are other commentators that contradict the mechanistic, reductionistic and behavioural views of *competency.* According to Weinstein (2000), competency is not only knowing, but it is also being aware that you know. Speers et al (1995) believes competency involves an individual's capacity to perform job functions, with the necessary knowledge, behaviour and personal characteristics, and the key is performance that reflects the integration of knowledge. In this sense neither acquisition of attributes nor focus on outcome alone is sufficient in acquiring competency. Competency is the interaction of the required attributes, which are needed to understand and act in a particular situation to achieve a satisfactory outcome (Toohey, Ryan, McLean & Hughes, 1995). Confederation

of Australian Critical Care Nurses Incorporated (CACCN, 1996) suggest competencies in nursing are not just skills, since they cannot exist without knowledge, clinical skills, and humanistic value. Therefore, the outcome assessment movement in higher education is focused on the mission of education to prepare individuals for the work of current and future needs of the society, as well as to ensure there is competence in the work force (Lendburg, 1991).

Competency is also expressed in relation to workplace. The idea of competency in the work place is not only the ability to employ the skills needed on the job, but also the ability to perform a whole range of activities in a specific area. The ability to transfer knowledge and skills in a new situation is to manage a wide variety of tasks within the job (Rutherford, 1995). This statement is in line with the definition of competency in nursing given by JCAHO, that is, the individual's ability to integrate knowledge, skills and behaviours in delivering care according to standards. Thus, professional competence derives from acquisition of a set of attributes such as knowledge, abilities, skills and attitudes, where they are jointly referred to as competencies (Preston & Walker, 1993).

In nursing, competency is also viewed in relation to legal aspects and accountability in nursing. Driscoll (1990) suggests competency in its purest sense refers to legal competency, defined as the ability to make decisions for oneself instead of having decisions made by another person.

Since there are various definitions and use of the term *competency* in the literature, it is not surprising that there are various interpretations and usage of the terms closely related to competency, namely, *competent, outcome* and *performance*.

Differentiating *competent, competency, outcome* and *performance*

Clarification of these terms will be made first in relation to the stages of skill acquisition proposed by Benner's Model of Novice to Expert (1984). These stages are *novice*, *advanced beginner*, *competent*, *proficient* and *expert*. According to this model, the

competent stage is the third stage in the development of competence in professional nursing practice. A nurse typically performs at the competent level after about two years of practice as a registered nurse in the same or similar situations. Here the competent nurse differs from that of a beginning nurse by having increased clinical understanding, technical skill, organisational ability and the ability to anticipate the likely course of events (Benner, Chesla &Tanner, 1996). The competent nurse still lacks the speed and flexibility of the proficient nurse, but can manage contingencies of clinical nursing (Benner, 1984). It is through experience that the nurse develops competence in handling familiar situations (Benner et al, 1996).

Gonczi, Hager and Athanasou (1993) in their discussion paper for the National Office of Overseas Skills Recognition (NOOSR, Australia) provide the following comprehensive definition of being a competent professional, that is " a professional who has the attributes necessary for job performance to appropriate standards" (p.5). The three important key components in this definition are:

- *Competence* of professionals that is derived from possession of relevant attributes; which are a set of relevant knowledge, skill and attitude necessary for the profession. The attributes are jointly referred to as competencies;
- *Performance* of a role or set of tasks, which is the focus of competence. Within a profession there are various roles and tasks, which are performed; and
- *Performance criteria* are the standards against which judgement is made as to whether the performance of the role is competent or incompetent.

(Gonczi et al, 1993)

Thus, competence of professionals is derived from their acquisition of a set of relevant attributes for successful professional performance. These attributes underlie competence, which is also referred to as competencies, and when viewed in a holistic manner, it is the overall capability of an individual (Gonczi, Hager & Oliver, 1990; Harris et al, 1995). Competence in nursing is when the nurse actually performs in a particular situation with integration of required knowledge skills and behaviour according to the expectations (Gurvis & Grey, 1995).

Competency and *outcome* are terms that need to be differentiated since they are closely related in describing competency in a profession and the assessment of competency. *Competency* is considered as the required attributes of a profession. Competencies are behaviours which need to be acquired to develop the required characteristics to achieve the outcomes (Boland, 1998). Therefore, *outcomes* are general statements that refer to the characteristics that students should acquire and display at a distinguished time, including at the end of an education program. Hence, outcome also reflects the values, beliefs and philosophy of the educational program (Boland, 1998).

There is also confusion between the terms *competence* and *performance* in the literature, the link between the two terms is important (While, 1994). Competence cannot be directly observable whereas performance is what is directly observable and so competence is inferred from performance (Gonczi et al, 1993). Performance criteria are the essential cognitive, psychomotor and or affective behaviours required to achieve competence, which is integrated into competency assessment instruments to assess the acquisition of those abilities (Stephen, 1999). Some competency standards will be difficult to assess through performance and will need sufficient evidence for inference from other sources, such as assessment of knowledge, to make a judgement about competence (Gonczi et al, 1993).

Essential Elements Of Competency

There are four essential components of a well articulated competency (Gurvis & Grey, 1995). They are:

- Competency statement;
- Critical behaviour or criteria;
- Learning options; and
- Evaluation methods.

The competency statement is a broad and objective statement that identifies an expected learning outcome. It is very important to have a direct relationship between the evaluation

strategy and the competency statement and broad learning domain. The evaluation process is also the key to measuring and validating competency statement (Gurvis & Grey, 1995).

Since competencies are observed and tested through performance in a wide domain or area of professional practice, standards are required as a criterion against which performance can be judged (Gonczi et al, 1990). Standards can be expressed in a range from exact statements written as behavioural objectives, to a criterion-referenced approach, which has descriptors of different levels of performance of each competence (Little et al, 1994).

Competency statements for a profession are stated as competency standards, which provides a description of the unique role and context in which the practice is based (Australian Nursing Council Incorporated, ANCI, 1994). The competency standards consist of a competency statement, elements of competency, performance criteria and range of variables (Australian Nursing Federation, ANF, 1997). Wheeler (1993) describes them as the common features of a competency standard. They are:

- Unit of competency, which consists of a short description of its purpose, constituent elements of competency and their associated performance criteria. ANF (1997) describes unit of competency as a title that refers to a defined area of competency, which represents a major function or role of a profession;
- Element of competency is the output term, which describes the activities that an employee in a particular area should able to do. It is a sub division of a unit of competency that is observable in a workplace;
- Performance criteria are the required outcomes, by which the unit of competency and its elements can be assessed as being performed at an acceptable level of performance, and
- Range of variables: places the unit within the context of its application in the industry and also to the specific requirements. It also provides the focus for assessment and development of training.

(Wheeler, 1993)

The evidence guide is an optional feature, which covers specific requirements for assessment and environments for assessment (Wheeler, 1993). It is the set of competency standards that set out the performance criteria against which competence can be assessed and validated (Gonczi et al, 1993). Performance criteria in a competency standard are sometimes developed as a range, which can be cumulative and increase in complexity, such as the competency-standards developed by the University of Western Sydney, Macarthur (UWSM). These authors developed a range of performance criteria for each competency standards for their three years Bachelor of Nursing (BN) Program, where the students are required to demonstrate satisfactorily their performance against each competency and the criteria (Little et al, 1994; McMillan, Bujack & Little, 1995).

Competency-based standards in a profession are also defined by the level of achievement required for an area of professional practice. They can be established at various levels such as for entry, experienced practitioner and specialist (Gonczi et al, 1993). Competency standards provide the standards and expectations of a professional, for both consumers and other professionals. In addition these standards in nursing can provide the means to communicate to all those who are involved in caring for patients to relate and function more consistently and successfully (Sutton & Arbon, 1994). Competency standards also provide the foundation for competency-based education.

COMPETENCY-BASED EDUCATION

Competency-based education and training aims to delineate in explicit terms the competencies, which an individual should have at the completion of a course (While, 1994). Elam (1971, cited by Harris et al, 1995) gives the earliest quoted definition of competency-based education. This definition included three levels of descriptors, namely the essential elements, implied characteristics and related or desirable characteristics needed for competency-based education (Harris et al, 1995).

The essential elements of competency-based education can be briefly described as:

- Competencies (knowledge, skills, behaviour) to be demonstrated by the learner, derived explicitly from the occupational role. Competencies need to be stated in such way that it is possible for assessment of the leaner to be made in relation to specific competencies. These competencies should be publicised in advance;
- Criteria to be employed in assessing competencies should be based in close relation to the specified competencies, which should clearly state the expected levels of mastery under specified conditions;
- Assessment of the students' competency uses performance as the primary source of evidence. Also assessment strives for objectivity;
- It is not the duration of the course or course completion that determines the learner's rate of progress, but the competency demonstrated; and
- The instructional program is designed to facilitate the development and evaluation of the learner's achievement of specified competencies.

(Harris et al, 1995)

In addition to the essential elements of a competency-based education there are implied characteristics in the definition proposed by Elam (1971). They include:

- Individualised and personalised instructions;
- Feedback to guide the learning experience;
- A systematic educational program;
- Emphasis on completion of the program not on entrance requirements,
- The learner being accountable for performance; and
- The learner completes the program when he/she demonstrates the minimum competencies identified for the particular profession.

(Harris et al, 1995)

Desirable characteristics in the definition of competency-based education given by Elam (1971) include, the program should be field centred and materials and experiences should focus on concepts, skills and knowledge that can be learned in a specific instructional setting. Both teachers and learners are involved in the instructional system. Preparation in

this system is for the future career. Therefore, in this definition, there is role integration as the leaner gains comprehensive perception of the profession (Harris et al, 1995).

Burke (1989) also suggests that competencies for competency-based education need to be derived from the analysis of the professional role and they should describe the outcome expected from performance of professional related roles. Also the instructional program should be developed to facilitate the development of these competencies and these competencies need to be publicised and available in advance.

Hence the key components of a competency-based educational system should include:

- A list of competencies which specifies the professional expectations;
- Specific standards for each of these competencies;
- Appropriate educational programs to facilitate the development of these competencies; and
- Identification of assessment methods for each or set of competencies, and guidelines for application of competencies in staff development and appraisal systems.

(Sutton & Arbon, 1994)

The main intention of competency-based education is identifying the key competencies of a profession that can reflect the needs of an actual workplace. Curricula are designed on the actual workplace needs, rather than assumed needs, to make the outcomes of formal education more appropriate to future workplace needs (Bowden and Masters, 1993). In developing the competencies required for a profession, the focus is on transfer of learning, which is an important aspect of education and training, as education is a useless activity without the ability of an individual to transfer skill and knowledge (Harris et al, 1995). This notion of competency-based education also reflects some of the definitions of competencies that have been stated before, which have focused on competency as the ability to transfer skills and knowledge. It has been identified in nursing that competency-based education is more than just learning procedures, but is grounded in care and linked to both the practising nurse and professional standards. Thus this method ensures that what is taught is consistent with the day to day practice of the nurse (Dozier, 1998).

Even though competency-based education is based on acquisition of work related skills and is outcome-based, competency-based education does not necessarily reflect a behaviouristic kind of education (Quirk, 1994). A holistic approach to competence is very different from a behaviouristic approach. In the holistic approach, the nature of competencies involves a complex combination of personal attributes, necessary for a variety of activities and a range of evidence is needed to make a judgement. In contrast, in a behaviouristic approach, competencies are specified as discrete behaviours that can be assessed through direct observation (Preston & Walker, 1993). Competency based approaches to education encompasses a holistic view, and in so doing encourages excellence and recognises degrees of successful performance (Quirk, 1994).

The issues related to the relationship between competence and productivity of the workforce as a result of competency-based education has increasingly become a relevant topic of debate of educational and business leaders (Lenburg & Mitchell, 1991). Competency-based approaches to higher education have generated a broad range of responses, both negative and positive. Findings from a study by Bowden and Masters (1993) reveal that academics view the competency-based approach to education as being too narrow, mechanistic and prescriptive. The major hindrance to earlier attempts to introduce competency-based principles to education and training programs has been attributed to its imprecise definitions and inadequate guidelines for implementation (Bowden & Masters, 1993). Positive responses to competency-based education included perceptions such as, that this method benefits higher education as it clarifies intended outcomes of a particular course in relation to particular professional requirement (Conway et al, 1999).

Introduction of competency-based approaches in education and training has significant implications on how assessment takes place in higher education, since the underlying expectation is that competency-based assessment is based not only assessment of knowledge, but also performance (Bowden & Masters, 1993).

COMPETENCY-BASED ASSESSMENT

Competency-based assessment is defined as the " assessment of a person's competence against prescribed standards of performance" (Gonczi et al, 1993, p.5). Hence, it is the process of judging the competence against pre-established performance standards and determining whether a person meets these standards. Thus, the process requires gathering sufficient evidence about competencies to make a judgement about competence (Masters & McCurry, 1990).

In competency-based assessment, it is the *performance* which is directly observable that is assessed instead of *competence*, and competence is inferred from performance (Gonczi et al, 1993). Since inference of competence is made from performance, a range of performance activities needs to be assessed to make a safe inference. Therefore, greater attention is given to assessment in the real or simulated practice settings for observation and measurement of a person's performance. This method is seen as more valid as it directly portrays a person's actual competence. (Butler, 1990). Hence, competency based assessment is based on realistic and complex workplace problems (Masters & McCurry, 1990).

Competency-based assessment also gives priority to how well the person integrates knowledge in practice, as knowledge is an important aspect of competence. This is different from traditional methods of assessment that are based mostly on just assessment of knowledge. Similarly, attitudes and values are also given importance in competent practice (Hager, 1995). In competency-based assessment there is direct assessment where the individual's ability to integrate knowledge in practice is assessed as opposed to indirect methods of assessing isolated factual knowledge (Masters & McCurry, 1990).

According to Thompson (1991), the philosophy of competency-based assessment is very different from that of traditional assessment. In a traditional assessment approach partial achievement of objectives is acceptable. However, in the competency-based approaches the

person may be judged to be competent in a particular task or skill, only when there is achievement of an overall objective (Thompson, 1991).

Competency-based assessment methods in nursing education ensure students will achieve appropriate levels of competence for entry to practice. In addition to providing opportunities to develop all areas of competence, this process clearly provides opportunities to progress and achieve satisfactory standards of competence in nursing practice (Little et al, 1994). Assessment strategies related to personal learning experience enable students to develop the skill of reflection on practice which allow them to become more aware and responsible for their own learning and development (Little et al, 1994).

Conclusion

In this chapter I have analysed the essential terms of the review, namely *competency*, *competency-based education* and *competency-based assessment*. It has been found there is inconsistency in the usage of the term *competency* in literature. There are several definitions and views expressed in relation to this term, which attempt to clarify its usage in education and in nursing. The most comprehensive definition of competency in nursing has been given by JCAHO, where it is viewed as the individual's ability to integrate knowledge, skill and attitude according to the expectation in an area. This definition does not focus only on outcome, but also the process of developing competency. Competency based education is based on development of the professional competencies, which are an established set of competency standards. Competency based assessment is the process of judging the individual's ability to demonstrate competency, which is judged against the established standards. With this understanding of these concepts, in the next chapter I will further explore the literature on history and implementation of competency-based education and competency-based assessment.

CHAPTER 3

HISTORICAL DEVELOPMENT AND IMPLEMENTATION OF COMPETENCY-BASED APPROACHES

INTRODUCTION

There has been a growing trend in the literature directed towards the use of competency-based approach in both education and also in the nursing profession. Having defined and analysed the concept of competency, competency-based education and competency-based assessment, I will now examine literature which reflects the use of competency-based approaches in a number of professions. Special consideration will be given to the use of this approach in nursing education.

In reviewing the literature on implementation of a competency-based education and assessment, it was found that considerable literature discussed the origin and development of this approach in a number of countries. Other essential elements that emerged from the review include; the need for development of competency-based approach, implementing this approach in education and staff development, development of models and tools to facilitate this approach and the effectiveness of implementing competency-based approach.

ORIGIN OF COMPETENCY-BASED MOVEMENT

There is considerable literature that focuses on how the competency movement started and extended to different professions. This movement originated from Western countries such as USA, UK and Australia, but not from the eastern and Asian countries. The origin of the competency-based approach traces back to the scientific management theories of Fredrick W. Taylor in the early twentieth century, where some elements of competency-based approach have been influenced by the work of Taylor (Bowden & Masters, 1993). Others suggest competency-based education came directly from the behavioural objective

movement of the 1950s in US and from the thinking of the educators, including the writings of Ralph Tyler and John Carroll (Burke, 1989; Collins, 1993). These behaviourist educational psychologists viewed *competent* as being a descriptor and an adjective that could be assessed through overt behaviour. Hence, the initial conception of the word *competent* comes from the visible and tangible world of the behaviourists (Collins, 1993). The competency movement initially focused on intended outcomes and encouraged teachers to express their instructional objectives as changes in observable student behaviours. The aim was to search for methods that had reliability in observation and judgement (Bowden & Masters, 1993). For this reason, the competency movement has also been known as the efficiency movement (Preston & Walker, 1993).

In the US, competency-based education began in 1967, by the Office of Education, which proposed this method as a model for primary teacher education (Bowden & Masters, 1993; Wheeler, 1993; Melton, 1994). This movement flourished in the 1970s when the competency-based approach spread from teacher education to other professions (Bowden & Masters, 1993; Wheeler, 1993).

The movement of competency-based approach in education started in the UK, as part of a government program to reform the vocational education system, although the system has been in existence in an irregular manner since 1970s (Bowden & Masters, 1993; Wheeler, 1993; Rolls, 1997). The National Council for Vocational Qualification (NCVQ) developed a new competency-based National Vocational Qualification (NVQ) Framework, which had to be implemented by industries, as the basis for competent performance and as an assessment method, wherever possible in the workplace (Burke, 1989; Bowden & Masters, 1993; Wheeler, 1993).

In Australia, as in US, the competency-based movement was first started in teacher education and extended to other higher education courses of medicine, nursing and engineering (Bowden & Masters, 1993). Some European countries have also influenced the development towards competency-based assessment in Australia. This was as a result of an Australian mission that visited a number of European countries, which emphasised

competency testing as the basis of vocational assessment. This initiative recommended to Federal Government, that a systematic approach to education and training would in general improve the quality of the system (Bowden & Masters, 1993).

Economic reforms led the Australian Government to formulate policies, concerning area of health and education, for the introduction of competency-based standards in industry and the professions (Masters & McCurry, 1990; Collins, 1993; Preston & Walker, 1993; Sutton & Arbon, 1994; Cheek, Gibson & Gilbertson, 1995; Chapman, 1999). National Competency Standards aimed to increase the skills of the workforce, to improve the productivity and competitiveness with an efficient training system, that supports the industry's skill needs (Wheeler, 1993). The Commonwealth Government viewed competency-based assessment as an important element in reconstructing industrial awards (Masters & McCurry, 1990).

Most developed countries reconstructed their educational system on a national standardised basis mainly due to failure of the traditional system of education to provide professionals with the right mix of skills (Chapman, 1999). Even before these developments, the nursing profession has been motivated to develop competencies, as a means to self-evaluate and increase accountability to the public (Sutton & Arbon, 1994). The transfer of nursing education to the higher sector has led to the need for registration authorities to convey to the universities the essential competencies required for students to achieve and also to provide a basis for accreditation of university courses. The nursing profession recognised the need to control entry into the profession by developing competencies for the profession (Cheek et al, 1995).

The concept of competency has returned to education, through the route of industry and training sectors. Initially, the competency-based approach was advocated and targeted towards the training sector (Collins, 1993). The Australian Standards Framework is also based on behaviourist assumptions, where the model is about skill acquisition. A major issue in education was finding a way from a behaviouristic approach of describing

competency to a more holistic, less materialistic, more human relational and performance capabilities way of defining competency (Collins, 1993).

The competency-based movement was led into Australian universities by the National Office for Overseas Skills Recognition (NOOSR) as Australia has a large intake of overseas immigrants in industry and needed to recognise qualifications (Collins, 1993). NOOSR identified that a competency-based approach could solve the problem. Competencies were made as the basis for testing prior learning. Professions had to make a list of competencies that were required for good practice. There was, however, an argument whether essential competencies identified by a profession for that purpose, should be considered as the outcomes on which Australian University programs should be designed (Collins, 1993). Yet, in a survey conducted by the NOOSR (1995) as part of investigation to find the implications of implementation of competency-based standards, the respondents perceived the following benefits have been gained from development of national competency standards:

- Providing a more equitable basis for registration;
- Quality assurance;
- A resource for universities;
- National consistency of standards;
- Better definition of the profession;
- A basis for communication of competencies at a national level and validation of assessment procedures;
- An important instrument in reflective practice; and
- A chance to examine the profession and what it does.

(NOOSR, 1995)

This survey included views from all the members of the steering group of NOOSR funded projects. The steering group consisted of members from a number of professions including nursing, with representatives from professional bodies, higher educational institutions, organisations and registration boards (NOOSR, 1995). Individuals in the profession in both

practice and education viewed that there are benefits from developing competency standards.

These benefits include maintenance of professional standards and efficiency of the labour market. Competency based standards offer a means of judgement for entry and progression within a profession. In addition establishing these standards can help the profession to plan curriculum, assessment, career structures, and discussion of professional practice within the profession and identification of professional knowledge that has potential to encourage excellence in a profession (Gonczi et al, 1990). Most professional organisations used the process of competency standard development to improve the dialogue between themselves and the universities or higher education institutions in regard to curriculum (Bowden & Masters, 1993). In nursing, apart from conveying to the higher education sector the competencies that need to be developed in the graduate nurse, the development of competencies was viewed as a means of developing the profession and improving the accountability to the public (Heinsfield & Waldron, 1988; Sutton & Arbon, 1994).

Need For Development Of Competency-Based Approach

Competence focus on performance of a role or set of tasks, which may also be multiple tasks within an area of professional practice. Thus, the competency-based approach provides a common framework for developing and linking many aspects of work and education such as work organisation, career structure, improvement of individuals, labour market, credentials, development of knowledge base for occupation, curriculum development and assessment (Preston & Walker, 1993).

There are two reasons recommended for developing competency standards. The first is the recognition of qualifications from other countries or states which can facilitate the exchange of skilled workers and establish common standards (Sutton & Arbon, 1994). Second is the change in the focus of education from process to outcome, which will enable students to progress at varying rates and also receive appropriate acknowledgement for previous learning and experiences (Sutton & Arbon, 1994). Thus, contemporary

educational planners believe this method will enable efficient use of resources resulting in the demonstration of desired competencies at the completion of a course of study (Sutton & Arbon, 1994). Also a rapidly changing socio-economic, education, training and healthcare environment made it more essential to set standards for education and practice of nurses (Perceival, 1995; Heinzer, McGoldrick & McLane, 1996). However, if always restricting practice within the established boundaries, competencies can lead to stagnation and decline of evolving nursing practices. Hence, it is important that the competency statements, especially those involved with high skilled work must continue to evolve and develop over time (Sutton & Arbon, 1994).

There are a number of authors who suggested competency-based approaches to nursing education as being inappropriate (Benner, 1982; Ashworth & Morrison, 199I; Goldsmith, 1999). According to Ashworth and Morrison (199I) "competence is a technically oriented way of thinking, often inappropriate to the facilitation of training of human beings" (p, 260). These authors reviewed some of the problems with competencies developed for nurses in the UK. They suggests that the competency statements are not written in terms of how they can be transferred into actual work settings, where importance is only given to the outcome and not the process involved in achieving the outcome. In this sense a competency-based approach is seen as superficial (Ashworth & Morrison, 199I).

The Australian context

The former Australian Nursing Council Registering Authorities Conference (ANRAC), now formulated as the Australian Nursing Council Incorporated (ANCI) concluded that competencies need to be demonstrated as a prerequisite and major criterion for entry into practice as a registered or enrolled nurse (Thompson, 1991). ANRAC competencies describe the outcomes that are expected of any process, which leads to entry into nursing practice. There is potential for both personal and professional growth using ANRAC competencies in curriculum and by achieving these competencies. Personal growth is achieved through a broad-based educational program, which enables the student to relate to different types of clients, and to other health care professionals. Professional growth is

aided by the educational program which introduces the demands and requirements for the development of advance level competencies (Thompson, 1991). When a nurse is subjected to disciplinary proceeding, ANRAC competencies can be used in conjunction with the registering authority Code of Conduct to determine the outcome (Thompson, 1991).

ANRAC competencies that were used as a basis for practice and education have been validated through a research project conducted by the Nursing Competence Assessment Project (NCAP) (Butler, 1990). Project results revealed the richness and validation of ANRAC competencies in the practice setting. Due to duplication and the need for rewording the competencies, a revised list of ANRAC competencies were developed (Butler, 1990).

There is, however criticism levelled at the competency statements written by ANRAC. Walker (1995) argues that when such language as *demonstrates* is being used in competency statements that focus on outcomes, it leads to an instrumental, mechanistic and reductive focus. Milligan (1998) too suggests that when the statements focus on outcome and say nothing about the process involved in achieving outcomes, they are reductionist and unhelpful for the purpose of nursing and midwifery education.

The UK context

In United Kingdom (UK) there are nine competencies stated by The Nurses, Midwives and Health Visitors Rules Approval Order (1983) which are required for the registration of a nurse. Many nurse education courses are using these competencies, as a basis for producing qualified nurses (Heinsfield & Waldron, 1988; Ashworth & Morrison, 1991). Bradshaw (1997b) though, argues that the UK nursing regulatory authority, United Kingdom Central Council (UKCC) does not provide clear guidelines as how competencies can inform nursing education. UKCC training rules state that the courses leading to qualification of registration should provide opportunities to enable students to accept responsibility for their professional development and for acquiring relevant competencies. In this system it is the individual nurse who is to self-develop, self-actualise and be responsible for their own

educational standards and acquiring competencies (Bradshaw, 1997a). According to these competency standards it can be implied that UKCC is not responsible for nurse's failure to be competent, but the nurse alone takes the responsibility. Competence is tested only when the nurse fails to demonstrate competence and then it is the law that is the only real test of the nurse's competency. Bradshaw (1997b) further argues that although in the English National Board (ENB) Regulations and Guidelines competencies and standards are referred to as the basis of the nurse's responsibility and accountability, however they were not defined in terms of how they can be achieved.

In UK the NCVQ framework is used as a basis for assessment in nursing and midwifery education. According to this framework, all the elements of competencies need to be assessed against each performance criterion to prove competence. Hence there have been views expressed that this method of education and assessment is beurocratic, reductionist and fragmented in nature, rather than reflecting holistic care (Le Var, 1996).

Implementation Of Competency-Based Approaches In Nursing Education

There are a number of articles that focus on implementation of competency-based approach in nursing (Little et al, 1994; Speers et al, 1995; Staab, Granneman & Page-Reahr, 1996; Parsons, 1997; Edwards & Keeley, 1998; Fearon, 1998; Conway et al, 1999; Hodges & Henson, 1999; Luttrell, Lenburg, Scherubel, Jacob & Koch, 1999; Stephen, 1999). There are a limited number of studies that have been published on implementation of competency-based approach and assessment in nursing education.

Pre-registration programs in all schools of nursing in Australia have incorporated competencies and competency-based assessment (NOOSR, 1995). The University of Western Sydney, Macarthur (UWSM), Faculty of Health members' experiences give insight into the complexity of using competency based assessment methodology as a central focus in the learning experience for student nurses. They derived five broad domains of abilities from analysis of practice, which they use as a framework for assessment of students' performance. The competencies that were derived were reviewed,

as to whether they reflected sufficiently, the performance of complex activities and abilities, described by the profile of a nurse graduate from their institute. The performance category, which was the identified domains, includes a comprehensive list of competencies that a graduate needs for entry into practice. They have also further described how each of these competencies can be achieved, as a cumulative process in increasing complexity over the three years of their BN program. Performance criteria for each competency were developed that were cumulative and increased in complexity across the three years. Students were to demonstrate satisfactorily each performance criteria on several occasions. When specific and explicit criteria for each component are published it provides students with the opportunity to prepare for assessment (Little et al, 1994).

Little et al (1994) identifies that the most challenging task in implementing competency-based assessment is articulating the minimum required level of performance of each competence. Even though Little et al (1994) discuss the process of implementing competency-based assessment, they have neither provided any detail of how the process was implemented in UWSM, nor discussed the effectiveness of implementing such a process.

The redesign of the Bachelor of Science in Nursing (BSN) curriculum on the basis of competency outcomes and performance assessment by Luttrell et al (1999) from US perspective, was quite different from implementation of competency-based assessment by Little et al (1994) that was from an Australian context. Luttrell et al (1999) noted, that redesign was based on a survey of students about their views on the evaluation process, which showed students wanting greater objectivity, specific direction on how to improve performance, and also how clinical experience is used to determine their grades.

The redesign of Luttrell et al's (1999) curriculum included reassessing the nursing practice in light of the current political and economic healthcare environment, which resulted in embracing the eight core competencies in the Lenburg model. They are communication, critical thinking, teaching, humanistic caring relationship, and management, leadership and knowledge integration. This competency-based model included deliberate change from

focus on faculty and teaching to a focus on students and their learning. It involved a fundamental shift from a traditional program and course objectives to competency outcomes that will be achieved at the end of the learning program. These outcomes were stated as performance abilities required for contemporary practice in diverse setting, on the basis of professional responsibilities. These competency outcome statements guide all the learning experience and were to be the foundation for the evaluation process. Courses were designed to increase skills as the course and experience in clinical practice increased in scope and complexity. Thus students gained insight into application of skills and increased in competence and confidence. Competency and performance based evaluation was adopted. The faculty and students viewed the competency outcome oriented curriculum as challenging but significantly successful in meeting the diverse needs of the twenty first century (Luttrell et al, 1999).

The three-year bachelor of nursing program in the Faculty of Nursing, University of Newcastle implements a competency-based assessment, in a non-integrated problem-based curriculum, as an instructional strategy. The students are assessed during clinical placement, using ANCI Competency Statements, as a basis for the assessment. Even though these standards guide the curriculum, only in the clinical subjects are the standards clearly incorporated (Conway et al, 1999). Conway et al, (1999) found in a recent study, that assessment of professional competence makes what was previously implicit, quite explicit in using a competency-based assessment strategy, which demand judgement to be made on evidence and be based on professional competencies. Judgement, thus, is not based on the educator's expert opinion. Another study by Conway (1998) found that some clinical educators perceived that when assessment is based on ANCI competencies, instead of assessment of clinical skills, there was no assessment at all. The reason for this may be due possibly to the clinical educators being unable to identify the relationship between the competency statements and nursing practice. These clinical educators were sessional educators who needed guidance and support in this new method of assessment, particularly as they were used to a task oriented checklist in assessing students (Conway, 1998).

Development of competencies for competency-based education and competency-based assessment

One of the advantages that have been identified by developing competency standards has been, it can guide the curriculum in higher education that prepares professionals for practice (NOOSR, 1995). Mansfield (1989) identifies that many existing standards are developed by the need for assessment of learning. Mansfield (1989), thus, argues that it should be the other way round, where learning and assessment ought to be driven by standards that are developed, as they describe needs and are the benchmark against which performance needs to measured and matched. Hence, in a number of countries most of the nursing education programs are based on nationally developed competency standards (Ashworth & Morrison, 1991; NOOSR, 1995; LeVar, 1996).

The competency statements used in UWSM have been developed over seven years by the faculty of UWSM (McMillan et al, 1995). The UWSM competencies had been derived from three sources of research on nursing practice. These are analysis of the practice of nursing by Anderson (1976), nursing activities described by Fivars and Gosnell (1966) and Standards of Nursing Practice developed by Royal Australian Federation in 1983. During the development of these competencies these sources were reviewed to ensure that the competencies reflect both Australian culture and professional practice (McMillan et al, 1995). After these competencies had been used for competency-based assessment for two years, McMillan et al (1995) recommended these competencies as an appropriate method for on-campus and clinical practice assessment.

It has been identified there is a high level of correlation between ANRAC and UWSM competencies, though there are minor differences (McMillan et al, 1995). McMillan et al (1995) conducted a study to extend the ANRAC competencies, in the medical/surgical nursing context, to all areas of nursing practice in New South Wales. Research was done to validate the existence of the competencies in various practice settings and research findings showed there was validity of competencies across different setting in nurses' practice in New South Wales (McMillan et al, 1995).

Competency-based assessment and problem-based learning

Competency-based and problem-based approaches in education and assessment are two notable methods implemented in higher education, which claim to provide opportunities to facilitate individualised learning experience, which ultimately empowers the learner (Conway et al, 1999). Conway et al (1999) conducted a study to explore the staff and students' experiences of implementing a competency-based assessment in problem based learning (PBL) in two different unrelated professional disciplines, namely nursing and construction management. The Bachelor of Construction Management (Building) uses an integrated problem-based learning approach and an outcome-based description of its curriculum, where the assessment criteria are linked directly to learning objectives at each level of the course. The nursing course, however, involved a non-integrated PBL curriculum and competency based approach in assessment (Conway et al, 1999). The findings of the study included responses from students in both disciplines, where students reported being unclear about the purpose and structure of assessment. Though the assessment of professional competence is consistent with the direction of the discipline of nursing and the talk of integrated curriculum as praxis, the reason as being dichotomy between theoretical knowledge and clinical skills. Greater emphasis is given to the theoretical knowledge and also devaluation of clinical education has given way to the staff and students being unable to relate professional competencies in assessment. This perception is reinforced by the non-integrative nature of their curriculum in nursing (Conway et al, 1999).

A key implication from the above study was to shift the emphasis on assessment away from judgement of knowledge acquisition, towards the ability to competently perform specific workplace roles and tasks. Competency assessment of higher order skills can be effectively assessed through assessment of these tasks, where integration of knowledge from wide variety of sources is evident (Conway et al, 1999). Conway et al (1999) recommend that integration of PBL in curricula as both a curriculum design and instructional method, along with competency-based approach can synchronise the needs of the industry, profession and the community with the preparatory role of higher education. There are other authors that

support the idea of combining competency-based assessment and PBL. Betchel et al (1999) identifies PBL and competency-based learning are the most notable approaches to achieve nursing education outcomes. Since PBL is a student-centred approach, which challenges the students to learn for themselves, and therefore enhances development of insight, understanding, reasoning and self-direction in learning (Frost & Dip, 1996). The goal of competency-based education being to gain specific knowledge base and necessary skills and understanding to provide competent nursing care. Hence, through integrating the two approaches, it is possible to create a higher level of learner inquiry and a more expert nurse (Betchel et al, 1999).

Competency-Based Approach In Staff Development And Orientation

Several authors have written about the use of competency-based approaches in nursing staff development and evaluation (Speers et al, 1995; Staab et al, 1996; Hodges & Hansen, 1999; Stephen, 1999; Thompson & Roda, 1999). Most of these studies were based on using competency-based approach in orientation of newly graduate nurses. Competency-based orientation is based on the attainment of established competencies, and assessment of the learner, which is individualised.

The need for competency-based orientation approach rose out of several factors, such as, the need for leaders to be accountable to assess, maintain, improve and demonstrate competence of all their staff (Hodges & Henson, 1999; Stephen, 1999). Economic factors influenced the adaptation of competency-based approach, since it was identified it reduced the cost of orientation (Stephen, 1999). The competencies and performance criteria that were developed in this method of orientation provided clear direction and expectation in the orientation process (Hodges & Henson, 1999). Standards of care for patients improved when the nurses were developed through competency based approach which had clearer guidelines and consistency (Stephen, 1999).

There is consensus in the literature that a competency-based approach in orientation and development of staff is very effective. Speers et al (1995) discussed a competency-based

orientation for perioperative registered nurses, which has proven to be very effective in preparing novice nurses for the perioperative environment. The program was based on identification of 27 competencies of a perioperative nurse, written as competency statements and critical behaviours for each statement. The implementation of competency based orientation enabled assessment and validation of new nurses competency and also identified deficiencies in a timely manner (Speers et al, 1995).

Stephen (1999) conducted a study, similar to those conducted by Speers et al (1995) and Hodges and Hansen (1999). Stephen's (1999) study was based on a competency-based nursing practice model in a multicultural setting where a model was designed for orientation of new nurses. A special team designed an integrated competency-based nursing education and practice model, which involved identification of the competency statements and performance criteria for each nursing role in each clinical setting and a documentation process was established for demonstrating initial and ongoing competent performance. Evaluation of this program showed there were positive results in using competency-based practice model, such as standards of care for patients and standards of performance of nurses were met with greater consistency, compared to previous education and practice model. The orientees and the preceptors in the program expressed the orientation plan was clear, concise and consistent (Stephen, 1999).

Even though the effectiveness of a competency-based approach in orientation of nursing staff has been documented (Speers et al, 1995; Hodges & Hansen, 1999; Stephen, 1999), there are still problems in implementing a competency based orientation, such as the following encountered by Staab et al (1996):

- Assessing competencies were too time consuming;
- Lack of standardised implementation among the nursing areas;
- Inability to review the vignettes at regular intervals;
- Preceptors too focused on tasks;
- Lack of an outcome evaluation; and
- Absence of a follow up plan in cases of inadequate completion.

(Staab et al, 1996)

An action plan was developed to overcome the problems, which included strategies such as standardisation of procedures, educating preceptors and timely review of the program. These planned changes had positive results. When there was standardisation of the procedures, all the areas held the same standards. It also helped to readily identify and solve the problems easily. There was increasing satisfaction for both preceptor and orientee, when their workload on assignments was adjusted. Orientees were more aware of their responsibility when they had signed an agreement, as they were accountable for their learning (Staab et al, 1996).

As well as being used for competency-based approach in orientation programs it has been also used in other staff education program. Edwards and Keeley (1998) developed a competency-based education program for the surgical assistants (nurses who were trained as interface between doctors and nurses in operating theatre). The study was based on the result of a survey analysis, that showed in general the courses undertaken by nurses had been more theoretical and academic in approach, where theory was not related to practice. Therefore, adequate clinical skills were not achieved. This lead to the development of a competency-based program for education of surgical assistants, where education was focused on patient needs and measured by outcomes.

The assessment process of the above mentioned program was based on principles such as, use of predetermined and published criteria, examination of clinical judgement and problem solving abilities to be related performance, occurs within a realistic environment, integrates the necessary and relevant knowledge and skills. In line with these principles, the assessment of surgical assistants included assessing them in the clinical setting by both clinical mentor and clinical supervisor. Even though, this article describes the implementation of the program, it does not does give any detail of the evaluation of the program. The research study is yet to be published (Edwards & Keeley, 1998).

Use Of Competency-Based Models

The literature reports of use of a number of competency-based models (Murray, 1995; Parsons, 1995; Fearon, 1998). These models have been developed to assist in implementing and assessing competency based education.

Fearon (1998) discussed the use of the 'Developing a Curriculum (DACUM) model of competency-based vocational education, developed by Hermon (1987). The model describes a visual method of showing all the skills and knowledge needed to be a craftsperson and enables the performance of a practitioner to be assessed in practice. The skills are written as steps of increasing complexity and reflect the standards of practice (Fearon, 1998). DACUM's model has a performance rating scale, which can be used to determine the different levels of performance of an individual. In this model the novice practitioner discusses with the manager the need to acquire a particular activity and the novice is supervised, to develop the identified activity and after a period of time formative feedback is given. Fearon (1998) identifies the advantages of this model are that, it safeguards the interests of the patient, the practitioner, and the organisations and promotes professional and personal development. The model has prompted nurses to update their knowledge and to identify best practice from research, and allows the boundaries of nursing practice to be adjusted in a supportive way (Fearon, 1998).

Problems encountered with the DACUM include identifying the 'expert' at the top, to start the assessment process. For procedures such as venepuncture or intravenous cannulation, the experts were phlebotomists or anaesthetists and they had to supervise the nursing staff, until the competence was achieved. (Fearon, 1998). Nonetheless, Fearon (1998) challenges whether the model can help the competent or proficient nurse to acquire the knowledge and experience to reach to the level of an expert nurse described in Benner's model (1984). A study to research the application of this model in nursing is needed to test its usefulness for developing nursing practice (Fearon, 1998).

Parsons (1995) too developed a competency-based model, which was quite different from the one Fearon (1995) has proposed. Parsons's (1995) risk-based competency assessment model can be used to make choices about the frequency of competency assessment. This model was not developed to measure the individual ability, but to measure the practice of professional nursing. The model provides a structured mechanism to link competency assessment with improvement in the quality of patient care. The model was designed to identify trends in the performance of key competencies. Incidents and unusual occurrences were seen as errors in skill performance. In this model, learning needs of the staff are to be identified from the performance trends and educational programs are to be developed to meet the specific learning needs. Risk is identified as the most important factor in using this model on competency assessment. Since Parsons (1995) did not describe how and where the effectiveness of the model was evaluated, it cannot be concluded whether this model is effective in identifying the performance trends and to develop educational needs of the nurses.

A model proposed by Murray (1995) is for the assessment of communication skills. In this model, students are required to demonstrate communicative competence, through competent management of a complex communicative interaction process, since the model is based on a process perspective (Murray, 1995). The assessment task in this model is observation of students' ability to adapt to changes in the communication environment. Assessment elements are designed in a way that can allow the assessor to manipulate individual elements in the students' communicate environment and observe the performance as they respond to that situation. Assessment will require the students to demonstrate their choice of communication strategies and awareness of the relationship, interactions and contextual nature of the situation in which they are interacting (Murray, 1995).

Murray (1995) gives an example of how this model can be used in the assessment of nursing students communication, in a presentation. The assessor can create and manipulate a setting of the communication process, and hence have opportunity to assess the students' skills in adapting to changes in the communication environment. Murray (1995) suggests

this is a powerful model because it can allow the assessor to observe the student's ability to change and adapt to circumstances as required.

Murray's model emphasises that the students need to be assessed for their ability to communicate competently in a simulated situation, which is related to real life. This model can be a simple method to implement and can be cost effective and time saving. Because of the authentic and interactive nature of the assessment task it will enable evaluation of a large number of elements involved in communication skill simultaneously and within a single assessment task (Murray, 1995).

The models that have been described above can be used in implementing competency-based approaches in education and also for assisting in assessment in competency-based approaches. However, finding a reliable and effective instrument for assessment of clinical performance has been a dilemma that has dogged nurse educators for many years.

Tools To Evaluate Competency-Based Performance

There is a need for a tool to measure clinical performance in undergraduate nursing programs (Donoghue & Pelletier, 1991). Factors such, as increasing demand for nurses to demonstrate competency and the need for greater transparency and evidence in assessment, necessitates the search for an effective tool, by which to measure students clinical performance. A recurring theme in the literature is the need for an assessment instrument that is objective, reliable and valid (Coates & Chambers, 1992; Chambers, 1998). In spite of this, very few studies were found that focused on the development of a tool to evaluate competency-based performance.

O'Connor et al (1999) discussed a study conducted by a group of managers, clinicians, and educationalists to develop, validate and pilot test a competency based performance indicator to assess performance during the first year of employment of newly graduated nurses. The study involved several stages in the development of the audit tool. They are reactive Delphi study, field study, pilot study and validation study. The result of the Delphi,

field and pilot study was the development of an audit tool, which takes the format of a rose diagram combining the competency statements relating English National Board (ENB) 10 key characteristics of guideline of pre-registration courses and a Likert Scale for scoring. The tool was used to assess the newly qualified nurses at 8 weeks, 6 months and 1 year, and each time feedback was given to them using the tool. The audit instrument was also to measure the improvement in performance of the graduate nurses on a regular basis. It was identified that the tool was sensitive to detect the changes occurring in performance. O'Connor et al (1999) states that the instruments have the potential to demonstrate clinical competency of newly qualified staff and their development over the first year of employment. However, these authors did not include the findings of the validation study, and so the actual validity and reliability of the tool was not described.

In any assessment tool developed for assessing students it is important to clarify the scoring criteria with well defined dimensions to ensure reliable rating of scores for performance (Donoghue & Pelletier, 1991). A tool developed by Donoghue and Pelletier (1991) to assess the clinical performance used numerical rating. The main problem identified was to improve accuracy of the results obtained, there was a need to improve inter-rater reliability by clarifying the rating score. However, even though this tool can provide objective assessment of clinical performance through observation and by scoring the performance, assessment in nursing involves subjectivity too. Hence, in competency-based assessment in nursing both subjective and objective assessment is required to increase the validity and reliability.

Effectiveness Of Competency-Based Approach

Despite growing interest in competency-based approaches in education, only one study has been identified that was done to evaluate the effectiveness of competency-based education and assessment. Thurman and Sanders (1987) conducted a quasi-experimental study to compare the effectiveness of competency-based education, contrasted with traditional education in radiological studies. A purposive sample of eleven first year radiology students were used, where the control group (n=11) were taught using traditional method

and the experimental group (n=5) were taught the same unit using competency-based education instruction method. The results of the study showed that the mean gain of marks of the students in competency-based education group was higher, than mean gain of the students in traditional group. Thus, statistical analysis indicate the competency-based design was more effective than the traditional education design in learning and also in improving students learning and performance. However, there are limitations identified from this study such as the sample group was small and it is dealt with only one course (Thurman & Sanders, 1987).

Even though, this study was not conducted in nursing education, it has implications for nursing. A major focus of many professional education courses is enabling students to develop competencies, since it places practice at the centre of the educational process (Murphy & Atkins, 1994). This notion of developing competencies is of particular importance for nursing, as there is a perceived gap between theory and practice, since currently there is an emerging trend towards praxis oriented curriculum, where the key elements are experience in context, lifelong learning ability and development of a critically reflective practitioner (Murphy & Atkins, 1994).

CONCLUSION

This chapter has reviewed the literature on how the competency-based approach has originated and extended over time. Even though this approach originated from the behavioural movement where educationists viewed education to be based on those objectives that can be observed, at present competency-based education aims to focus on a holistic and integrated approach. Competency development in educational process is viewed as a means to prepare practitioners on the basis of the competencies needed in a profession. In the nursing profession competency development can help to prepare professionals for their practice. It has also been noted there are very limited studies on competency-based assessment in nursing education. However, there has been studies done on implementing competency-based approaches in staff development programs, which have proven to be very effective.

CHAPTER 4

DEVELOPING A COMPETENCY-BASED APPROACH IN ASSESSMENT

INTRODUCTION

The previous chapter has reviewed and analysed how the competency-based movement has originated and developed and also how competency-based approaches in education and assessment have been used in a several professions including nursing. In this chapter I will review literature that examines the development of competency-based assessment strategies. There is a dearth of literature and studies directed towards methods and ways of developing such a system. However as Hall (1995) suggests;

> *Much energy has been devoted to the writing of standards and the accompanying curricula. However, without associated detailed assessment specifications and instruments, competency standards have limited application.*
>
> (p. 1)

Some of the issues in relation to developing a competency-based assessment approach emerging from literature include the process of developing competency based approach in assessment, assessing knowledge, skills and attitude, subjectivity/objectivity debate involved in assessment, reliability, validity, fairness and flexibility in assessment, the role of assessors in assessment and different methods that can be used in implementing a competency-based assessment.

Developing A Competency Based Approach To Assessment

In developing an assessment system there is a need to determine if the philosophical framework of the curriculum is reflected in the educational program (Clifford, 1994). One of the important principles of assessment is to develop assessment strategies in line with the program mission, vision and philosophy (Thompson & Bartels, 1999). Thompson and Bartels (1999) suggest, that if educational values are not reflected in assessment, then assessment will measure what is easy, rather than what the educational program intends to develop and assess. The process of assessing competence in competency based assessment is to determine whether an individual can demonstrate the required competencies in accordance with the established standards (Gonczi et al, 1993).

Since the established competency standards consist of units, elements and associated performance criteria, in a profession there will be numerous elements with multiple criteria to assess. Hence, to assess every element and performance criterion might be a very difficult task (Gonczi et al, 1993). Gonczi et al (1993) recommends development of an integrated assessment framework that can assess a range of elements and performance criteria. This supports the notion of competence in a profession involving more than just mastery of pieces of knowledge, attitude or skills. Atomising competence in the latter way there is a risk of focusing only on the more superficial elements of professional practice, whereas competency is based on the integration and application of relevant knowledge, skills and attitude in performing the professional activity (Bowden & Masters, 1993). Integrated assessment approaches will enable the combination of knowledge, understanding, skill in assessment (Gonczi et al, 1993).

Another important issue that needs to be taken into account in developing competency-based assessment is the tension between the two principle goals of the competency-based movement. They are the aim to be explicit about the competencies that make up a profession and the aim to build an assessment strategy that reflects what a practitioner actually does. Trying to explicitly state the competencies can lead to a long checklist of behavioural objectives which contradicts the emphasis on inappropriateness of

characterising a profession as possession of sets of unconnected facts and skills (Masters & McCurry, 1990). An important limitation in earlier attempts in implementing competency-based assessment has been when assessment has tried to focus on isolated facts rather than measurement of integrated skills (Melton, 1994).

To develop a competency-based approach in assessment, Master and McCurry (1990) suggested a multi-step process, which is described as follows:

- Step 1: analysing the roles and tasks of a professional in their everyday work;
- Step 2: analysing the knowledge and range of skills required by the professional, for his/her professional practice;
- Step 3: deciding about the areas in which the candidates need to demonstrate minimum competence, and the candidates need to be assessed in each of the identified areas;
- Step 4: describing the level of competence in each identified area of minimum competence, where the description is written in terms of competency standard. These standards should include criteria against which to judge the candidate's performance;
- Step 5: developing an assessment strategy to assess each area of competence that needs to be assessed as minimum competence; and
- Step 6: comparing candidate's performance against the standards that were set, and judging whether the candidate has met the required standards.

The above steps describe how competency standards that are developed by analysing a profession can be used to judge and make inference of competence in an individual. In this process suggested by Master and McCurry (1990), there is a need to identify the broad areas in which a candidate must demonstrate at least minimal competence. Similarly, one of the purposes of the development of ANCI competencies is to assess the graduate nurse's ability to demonstrate minimum level of competence for practice (ANCI, 1995). There are arguments against this notion of *minimum competence*, especially in nursing. For example, the view that movement of nursing education to higher education should be past the simplistic level of meeting minimum standards, but directed towards the highest possible level of achievement (Chapman, 1999).

In nursing, competencies are not just skills or personal attributes, but specialised knowledge, cognitive, technical and interpersonal skills, required attitude and behaviours (CACCN, 1995). When using a competency-based approach in higher education curricular it is important to define the higher order competencies with a broader perspective. These higher order competencies must be assessed by viewing performance holistically and in context (Conway et al, 1999). Melton (1994) suggests if competency statements require a candidate to demonstrate certain competencies in a number of different contexts, assessment of all the competencies in all the contexts may not be practical, but using a sampling technique can solve the problem.

Even though, the literature stresses the need to assess competencies in an integrated manner to reflect the holistic nature of a profession, there is lack of research studies or literature on methods of assessing the competencies in a cumulative manner across the number of years of the course in an educational program.

Assessment of knowledge, skills and attitudes in competency-based approach

Traditional methods of evaluation often do not provide holistic assessment which demonstrates the diversity of individualised learning (Wenzel, Briggs & Puryear, 1998). Competency-based assessment gives priority to how well an individual integrates the knowledge, skills and attitudes required for practice. This is different from traditional methods of assessment, where much weight has been given to assessment of only knowledge (Hager, 1995).

Masters and McCurry (1990) identify that recent studies, in a wide range of fields have drawn attention to the crucial role of knowledge in professional practice. Competency-based assessment does not emphasise only directly observable skills or isolated factual knowledge, in competency-based assessment, candidates may be required to comprehend, apply, analyse, synthesis and evaluate data, which are actually using higher order thinking skills (Hager & Gillis, 1995). Hence, the challenge lies in finding appropriate methods of

assessing the individual's ability to integrate knowledge in practice (Masters & McCurry, 1990).

Another important element in the assessment of competence is attitude, as appropriate attitude in a professional nurse is important (Dawson, 1992). Shared attitudes and values is regarded as fundamental in distinguishing an occupation as a profession (Hager, 1995). There is an ongoing debate about measurement of these behavioural skills in an approach that has uniformity, consistency and fairness (While, 1991). In nursing education measurement of these behavioural skills in a consistent manner needs to be given importance especially since educators have expressed frustration in evaluating attitudes as it is difficult to infer from observation alone (Maier-Lorentz, 1999).

Dawson (1992) analyses in detail, the assessment of attitude in nursing. He suggests assessing an activity can never be assessing an attitude and it is only inference, which may not be directly verifiable. When assessing attitude, recognition must be given to the fact that attitude is a dynamic process where attitude may change and develop over time. Also, there may be no such thing as a minimum level of attitude for a profession (Dawson, 1992). In this regard, Dawson (1992) proposes attitude assessment must be regarded as formative, where the advantage is protecting the student's privacy. The student can express what he or she chooses as the attitude and value in a certain situation by giving reasons for choices. Continuous clinical supervision can help to explore and identify issues in attitude. A diary can be a useful method for active reflection of these experiences. The students learn to become constructively self–critical and seek ways to develop professional attitudes (Dawson, 1992).

There is also reference to the notion of an *assessment gap* in the literature related to competency based assessment (Master & McCurry, 1990; Hager, 1995). *Assessment gap* is described as the difference between the amount of evidence with which performance can be reasonably and reliably assessed in actual or simulated setting, and the amount of evidence, which is needed to make a safe inference of competence. Hager (1995) suggests that this assessment gap can be filled with supplementary evidence, that tests for knowledge and

understanding. This added evidence together with performance evidence enables a more realistic inference of competence.

Validity And Reliability In Competency-Based Approach In Assessment

The issue of validity and reliability is widely discussed in the literature especially in relation to assessment of educational outcomes (Cropley, 1995; Hall, 1995; Rutherford, 1995; Toohey et al, 1995). Cropley (1995) identifies validity and reliability including fairness and flexibility as the main attributes of a competency–based assessment, as they are important for effective assessment.

In competency-based assessment, validity of assessment is high, since this method of assessment needs to be conducted in a setting which resembles as closely as possible the actual work-place setting (Rutherford, 1995). Hence, competency-based assessment provides realistic proof of competence, not just from written examination. To achieve validity and maintain it throughout the process, the assessor and other key staff involved should identify the standards required to measure and the method of assessment that is best suitable for it. Valid assessment will evaluate appropriately the issue which is being assessed (Wilkinson, 1999). There are a number of authors who suggested that using multiple methods of assessment would enhance the validity of results (Hager & Gillis, 1995; Rutherford, 1995; Thompson & Bartel, 1999).

Reliability in assessment is being concerned with the accuracy or consistency of the outcome of the assessment process (Masters & McCurry, 1990). Competency-based assessment systems makes allowance for reliability through building in quality assurance measures. That is, by writing competency standards, as clearly as possible of what exactly is required in the work setting, hence, ambiguity is minimised. Competency standards developed at a national level, such as national competency standard for a profession, can ensure reliability as they are validated to ensure that these statements reflect the competencies required in a profession (Rutherford, 1995). To achieve reliability assessment practices need to be monitored and reviewed to ensure there is consistency. Also the

assessors need to be competent in terms of using the competency standards (Cropley, 1995).

Since competency based approach to assessment is dependant upon the expert opinion of judgement it becomes a subjective matter and takes a political dimension (Hall, 1995). Development of clearer guidelines for assessors and availability of a general agreement on how criteria are to be interpreted can increase the reliability. It is difficult, however for assessors to apply criteria and make interpretations about performance always in a consistent manner (Hager, 1995).

In addition to validity and reliability, Rutherford (1995) identifies transparency as an important feature of competency-based assessment. The methods of assessment and the standards against which assessment is being carried out, should be made clear to all those concerned including students and assessors. Every aspect of the assessment process must be clearly seen and understood.

SUBJECTIVITY/OBJECTIVITY DEBATE

Much has been written in relation to subjectivity/objectivity (Hepworth, 1991; Clifford, 1994; Hall, 1995; Chambers, 1998). The issues of subjectivity and objectivity will arise when discussing assessment, and it is important to understand the particular tension that arises between *objectivity* and *subjectivity* in competency-based assessment. This tension is seen to be healthy, and problems arise when this tension is not acknowledged. A competency-based approach to assessment requires a high element of judgement, which involves people and application of their expertise, even though judgement is to be made in relation to certain performance criteria. But at the same time there can be an objective component involved too, where knowledge can be assessed through multiple-choice test and marked by machines. However, all important judgements in life are highly subjective and assessors need to recognise this (Hall, 1995).

Chambers (1998) believes that the main obstacle to valid and reliable assessment of competence is lack of objectivity in tools that are used in making judgements. When efforts are made to reduce subjectivity, problems arise such as use of criterion-referenced tools. These tools have been critiqued as too behaviouristic for contemporary nurse education (Chambers, 1998). On the other hand Hepworth (1991) stresses the need for the nursing profession to accept the subjective nature of assessment and that subjectivity needs to be inversely related to validity and reliability. This adheres to the current philosophical notion of holistic nursing, which claims the whole person, is more than the sum of the parts and the parts do not necessarily reflect the whole. Therefore, one could argue that it is not logical to assess a holistic activity or approach in nursing by reducing to its parts. Since nursing is a subjective phenomenon, it is important to value the personalised experience which will make learning more meaningful for the students (Hepworth, 1991).

Assessors In Competency-Based Assessment

In assessment of clinical practice in nursing the assessor assesses the student in terms of the student's ability to provide holistic nursing based on identified assessment criteria (Hepworth, 1991). The question of who should assess is a difficult issue in competency-based assessment as the assessors role is a complex one (Hall, 1995). In a study done by Neary (1997) to define the role of assessors, mentors and supervisors, the findings revealed that the skilled practitioners perceived there was continuing confusion and misunderstanding of being an assessor which overlaps with being a mentor and a supervisor. There are quite a lot of dilemmas involved in assessment such as finding constructive ways of giving feedback and guiding students (Neary, 1997). However, there is a gap in the literature and research on the role of the assessor in competency based assessment.

Since the assessor plays an important role in assessment, it is important for the assessor to be familiar with the correct implementation of assessment to maximise the validity and reliability (Wilkinson, 1999). If assessment takes in different context, it will be difficult for assessor to apply the criteria for assessment and always make judgement in a consistent

manner (Bloch, Clayton & Favero, 1995). Conway (1998) recommends that assessors involved in assessment need guidance and support. Staff development programs can facilitate this process. Hence, training of assessors is crucial to the success of implementing a competency-based assessment (Gonczi et al, 1993).

Cost of competency-based assessment

Another factor impacting on the implementation of competency-based assessment is cost (Cropley, 1995; Hager, 1995). In competency-based assessment individual students need to be assessed for their ability to demonstrate all the required competencies in a setting, which closely resembles that actual setting of a practitioner. Hence, this method is more expensive than traditional methods of assessment, as it needs to be administered individually, which takes time and resources. But properly designed competency-based assessment can have high validity as a measure of the person's ability to carry out the performance. The decision has to be made as to what extent its high level of validity outweigh the extra cost. (Cropley, 1995).

Using Multiple Methods In Assessment Strategy

Use of a combination of methods can add breadth and depth to the investigative process and increases the persuasiveness of the findings (Mahara, 1998). All existing forms of assessment can potentially be used for competency-based assessment, however preference must be given to those methods capable of assessing competence in an integrated manner (Gonczi et al, 1993). Also it is important to build the assessment strategy into the total educational program from the beginning to ensure that assessment is an integral part of program (Forker, 1996).

Integrated methods have a number of advantages. They reflect a holistic approach as they seek to combine knowledge, understanding, problem solving, technical skills, attitude and ethics in assessment. Integrated assessment methods are problem oriented, interdisciplinary, embrace professional practice, cover groups of competencies, demand

analytic ability and combine theory and practice (Gonczi et al, 1993). Decisions made about the student's clinical practice become more trustworthy when combinations of evaluation data are used (Mahara, 1998).

There are a variety of methods available to assess nursing students' clinical performance. Performance checklists, rating scales, written exams, self-evaluation methods such as numerical rating and narrative formats, peer evaluation strategies, observations and interviews/discussions about performance in actual situations as well as simulated scenarios. The evaluation methods that combine principles of fourth generation evaluation, qualitative data collection and decision making procedure can provide rich, holistic and artistic portrayal of a students' practice, while at the same time providing a systematic and disciplined approach (Mahara, 1998). Fourth generation evaluation processes based on the interpretive and critical paradigms can facilitate the student's and teacher's' ability to understand student's practices and hence make meaningful judgement. The interpretative and critical view fits well with the paradigm of constructivism, wherein clinical evaluation allows teachers and students to work jointly to create a picture of the student's practice and to determine practice in relation to professional standards. Hence, the evaluation process becomes a teaching-learning strategy for fostering student's commitment to evaluation and a means for ensuring professional competence (Mahara, 1998). This method also supports the importance of process-oriented practice. Even though this method is ideal fostering a learning process at the same time as assessment, it can be time consuming and it may not always be possible when there are large number of students.

Choosing methods for assessment is about weighing up all the factors impacting on assessment and making decisions based on what is educationally sound, but also what is economically and practically viable.

Methods available for competency-based assessment

A number of authors provide lists of assessment methods that can be used in competency-based assessment (Masters & McCurry, 1990; Little et al, 1994; Luttrell et al, 1999). The

methods of assessment listed by Little et al (1994) to assess nursing students' performance in a competency-based assessment are in-line with Gonczi et al (1993). They are:

- Structured tasks which can be a short answer questions relating to a commonly encountered nursing situations;
- Extended written responses;
- Oral assessment;
- Clinical-based assessment, and
- Portfolios.

Luttrell et al (1999) developed two types of instrument in their redesign of a BSN program that have been used to assess competency outcomes. They were Competency Performance Examination (CPE) to assess the students' abilities in clinical courses and Competency Performance Assessment (CPA) to assess the didactic non-clinical courses. CPE includes a written component and psychomotor component, which involved performing in a skill laboratory, which is based on a clinical situation. The students were also expected to demonstrate competency in psychomotor skill with a simulated client. Through this method of assessment, students can test their ideas and learn from peers. Luttrell et al (1999) reported an increase in the students' confidence, in their ability to make clinical judgements and decrease anxiety of the students. However, in pilot testing CPE a number of problems were identified, notably the amount of time it took for full assessment of certain competencies (Luttrell et al, 1999). According to Luttrell et al (1999) CPAs provided a unique opportunity for students to prepare for real life experiences in the nursing world, since the assessment involved the students to explore issues related to nursing.

All the existing forms of assessment can potentially be appropriate for competency-based approach, since it is the way in which they are used and the way results are interpreted which infers a competency-based approach (Gonczi et al, 1993). These assessment methods need to be related to the units, elements and the performance criteria of competencies. A literature review on assessment in competency-based education by Toohey et al (1995) identified a recurring theme was the need to avoid narrow interpretation of competency and assessment based on checklist of discrete set of tasks. There was recognition of the need to

implement methods of assessment that can assess the performance of an individual in an integrated manner and so provide a holistic picture of the individual's performance.

A central issue in nursing education has always been how to best measure clinical performance, which can provide a holistic picture of the student's competence (Bujack, McMillan, Dwyer & Hazelton, 1991a). Authentic assessment methods in nursing education provide holistic appraisal of diverse student learning (Wenzel et al, 1998). Use of a portfolio is emerging as an effective and efficient means to document such personal achievements and professional accomplishment. It can demonstrate knowledge and skills based on professional standards and competence (Ryan & Caltron, 1997). Another possible way of incorporating a student-centred approach into curriculum which is increasing in popularity is Objective Structured Clinical Assessment (OSCA)/ Objective Structured Clinical Examination (OSCE).

While portfolios provide a learning approach by which to maintain and measure competence with evidence of achievement (Priest & Roberts, 1998), an OSCA is capable of measuring a combination of competencies at the same time, which can reflect holistic nursing. Hence, when portfolio and OSCA are used in conjunction they can offer a comprehensive picture of student's capabilities and achievement of professional competencies.

Portfolio

In the recent nursing literature there has been a focus on use of portfolios in nursing (Glen & Hight, 1992; Jasper, 1995; Stockhausen, 1996; Martin, Kinnick, Hummel, Clukey & Baird, 1997; Ryan & Caltron, 1997; Malcolm, 1998; Murrel, 1998; Priest & Roberts, 1998; Wenzel et al, 1998; Thompson & Furrow, 1999).

Wenzel et al (1998) provides a number of advantages in using portfolios for both students and nurse educators. Students benefit by being able to meet individualised needs, continue life long learning, involvement in self-reflection and personal responsibility in learning,

valuing improvements and accomplishments and developing collaboration among students and faculty (Wenzel et al, 1998). Portfolios have numerous valuable applications (Ryan & Caltron, 1997). Portfolios can provide evidence of achievement and can be used for continuous assessment throughout the course of study (Priest & Roberts, 1998). Using portfolios, the development of the individual may be in terms of knowledge acquisition, psychomotor and interpersonal skills, academic and research skills and professional attitudes and behaviours (Jasper, 1995). Portfolio assessment involves use of a learning contract, which can be used for assessing the achievements of relevant clinical practice (Murrel, 1998).

The key element in portfolio creation is that it is the student who decides what will be included (Stockhausen, 1996; Zvacek, 1997). Hence, portfolios enable the students to relate clinical practice to theory, and also to reflect on their practice (Malcolm, 1998). Reflective learning will encourage students to integrate theory with practice, appreciate the happenings and utilise every experience into a new potential learning experience (Wong, Kember, Chung, & Yan, 1995). However, as the portfolio provides documented evidence of a student's understanding, students only can determine what is appropriate, and hence it may be difficult to make a judgement on the quality of learning through a portfolio (Stockhausen, 1996). Hence, this can decrease the reliability of portfolios (Kirkpatrick et al, 1998).

Other disadvantages of portfolios are the time involved, in terms providing feedback and also grading them. It is difficult to grade because the achievement is a personal goal rather than a faculty prescribed one. Developing pre-established guidelines for portfolio implementation and second person judging the portfolio can increase the reliability (Kirkpatrick et al, 1998).

Thompson and Farrow (1999) describes their experience of implementation of a workbook portfolio that can help the students to make the unique challenges offered in the course mental health clinical placement. The portfolio consists of a weekly workbook, which assist them in planning and structure their learning and as a means for dialogue between the

student and the tutor. Formative assessment of the workbook forms the foundation for dialogue between clinical tutor and student. Summative assessment of the portfolio comprises self-selected parts of the workbook. They are marked according to identified criteria which the students are provided with prior to the their commencement of clinical placement. Use of workbook portfolio was evaluated and feedback included this method greatly enhancing students learning on mental health areas. There was clear advance of student's critical thinking, reflection and integration of theory and practised. Though, this method involved a large amount of work and time (Thompson & Farrow, 1999).

Portfolios can be assessed in terms of how well the students can articulate and demonstrate their understandings and actions (Stockhausen, 1996). Hence, portfolios allow constructivism, where the students have the opportunity for concrete clinical experience through identifying patterns and build upon concepts and act on a more solid foundation. Thus, portfolio as a method of assessment can document student's progress and at the same time allow the students to develop understanding of nursing knowledge and practice (Stockhausen, 1996).

OSCA/ OSCE

OSCE/OSCA is increasing in popularity in curriculum due to its student-centred approach (O'Neill & McCall, 1996). OSCA is capable of assessing a number of competencies and hence it provides a high level of integrated assessment. OSCA is also a process-oriented method of assessment (Gonczi et al, 1993).

The procedure of conducting OSCE consists of setting up of a number of time limited stations, through which each student rotates. Each station consists of a scenario, which has been devised for the students to experience. The students are observed at each station by one particular examiner who rates the student's performance using pre-set criteria. This method is said to be objective, due to use of the pre-set criteria derived from expert consensus and also as examiners actions are too controlled as they are trained to assess

based on a checklist provided. (Bramble, 1994). But this method also involves subjective professional judgement (Priest & Roberts, 1998).

Traditional OSCE had been centred on assessing isolated nursing competencies, which is inappropriate for use in nursing. Bramble (1994) identifies, though OSCA has been acknowledged as a valuable tool for assessing medical students, little has been documented of its use in nursing. Bujack et al (1991a) too suggests that OSCA can present difficulties for nursing if it adheres to a medical model, as it does not reflect the nature of nursing practice.

OSCA involves simulated situations (Bramble, 1994; O'Neill & McCall, 1996). Cognitive learning theory supports clinical simulation as a teaching strategy for effective learning, as simulated activities allow students to react in a variety of situations that can be encountered in clinical practice without fear of making mistakes and can also increase students' confidence (Johnson et al, 1999).

O'Neill and McCall (1996) conducted a pilot study of nursing OSCE with second and third year students in a traditional nursing course. Feedback from the study included comments from students who found that this kind experience help them to gain confidence before they came in contact with actual patients in the clinical setting (O'Neill & McCall, 1996).

Fahy and Lumby (1988) conducted a similar study (n=12) as study O'Neill and McCall (1996) to evaluate the effectiveness of OSCA. The majority of the students in this study expressed it was a fair and valid test of nursing knowledge. They felt they were able to integrate behavioural sciences and nursing knowledge. However, some students expressed they were too nervous to perform well and felt they were too rushed to think. Teachers' involved in the study commented they were able to identify areas of curriculum which students had mastered and those areas that students had not learned well. Another problem identified was that in some stations students were not able to complete activities within the time allocated (Fahy & Lumby, 1988).

Bramble (1994) conducted a quasi-experimental study on OSCA in a graduate nurse practitioner course to determine the effect of participation in this type of simulation would have on students' cognitive and clinical competence. The analysis of the results indicated that participation in OSCA simulation did not lead to significantly better cognitive or clinical performance (Bramble, 1994). However, participants of the study strongly agreed OCSA is a valuable learning experience and feedback provided was important for their improvement in cognitive and clinical performance.

Bujack, McMillan, Dwyer and Hazelton, (1991b) conducted a study to determine the validity and reliability of the use of OSCA as an integrated assessment tool for the purpose of assessing the extent to which a student nurse can plan and provide comprehensive nursing care. The results of the study were similar to that of Bramble (1994). The study results showed a significant portion of students rated OSCA as a positive learning experience where they were able to demonstrate their abilities in clinical situations. They also viewed there was integration of course units in this method of assessment. There was also strong agreement that OSCA represented the reality of nursing practice and it is effective through use of simulated patients. However, students stated there was high degree of stress and anxiety involved, but there was also sense of challenge. They also felt there was insufficient time. The panel of experts provided feedback such as OSCA is a learning experience for students, an occasion for students to demonstrate their clinical performance activities, there was reality of nursing and there was effective use of the simulated patients. OSCA was rated positively except for the stress that is involved in it (Bujack et al, 1991b).

However (Bujack et al, 1991b) identified draw back of OSCA development was it was initially very expensive in terms of work for staff and payment for simulated patients, resources and equipment used such as video. But it was comparatively less costly than conducting separate traditional assessment item for each course unit. The cost of paying for simulated patients can be justified given the extent with which it enhances a real life setting (Bujack et al, 1991b).

Conclusion

In this chapter I have reviewed the issues that need to be considered in developing a competency-based assessment. Competency based assessment assesses the student's ability to demonstrate competency using integrated assessment. Hence this approach to assessment in nursing measures the individuals ability to integrate knowledge skills and attitude to perform competent practice. In developing a competency based assessment it is important to consider the issues of subjectivity, objectivity, reliability, validity, fairness and transparency. It is also important to select integrated assessment methods, which are capable of assessing a number of competencies. At the same time multiple assessment methods need to be used to make judgement about the individual competence. A number of integrated assessment methods such as structured short answer questions relating to practise setting, clinical-based assessment, oral assessment, extended written responses can be used for assessment of clinical nursing practice. Portfolios and OSCA are two notable methods that can be useful for assessment of competency in nursing. Although there is literature available on methods of assessment there is lack of empirical studies to support the use of different methods of assessment.

In the next chapter I will discuss the implications of the literature review especially in relation to Maldivian nursing practice, nursing education and research. I will also formulate recommendations from the review findings for Maldivian undergraduate nursing education and a plan to implement these recommendations.

CHAPTER 5

DISCUSSION

> *Assessment is the key that unlocks the essence and challenge of professional nursing practice.*
>
> (McGovern, 1997, p.81)

This extensive literature review has sought to understand competency-based assessment in nursing education. The review has thus, analysed the philosophical and methodological underpinnings of the competency-based approach in education and how these are reflected in nursing education. A central assumption of this review was that competency-based assessment could facilitate the development and demonstration of competencies required by a graduate nurse on entry to professional nursing practice. Whilst there are many issues impacting on successful implementation of competency-based assessment, this assumption has been supported in the literature. Thus, it is possible to develop and propose recommendations for the implementation of a competency-based assessment in undergraduate nursing education in the Maldives.

In this literature review, I sought to analyse the literature on competency-based assessment in education and in nursing education. In undertaking this review I explored a number of related questions:

- What is competency?
- What are philosophical and methodological underpinnings of competency-based assessment?
- What are some of the areas in which a competency-based approach to education is being used?
- What are the strength and weaknesses of these programs?
- How is competency-based assessment implemented in higher education and how has it been integrated into nursing education?

- What recommendations can be drawn from the literature review findings to inform the implementation and ongoing use of competency based assessment in nursing education in the Maldives?

Understanding the term *competency*

There were various interpretations of the term *competency* identified in the literature. There was also confusion between the terms *competence*, *competency* and *competent*. There is difficulty in operationalizing these terms *competence* and *competency* are used interchangeably and also referred to as a thing or activity, rather than a quality or state of being.

From the several definitions of competency found in literature, the JCAHO provided the most comprehensive definition of competency that can be used for nursing. According to them *competency* is how well the individual integrates skill and behaviour in delivering care according to expectations (JCAHO, cited Burbach, 1999). This definition relates to one of the widely accepted definitions of nursing, which is the definition given by American Nurses Association (1980), that sees nursing as "the diagnosis of human response to actual or potential health problem" (cited in Oremann, 1991, p.2). The characteristics identified in this definition include; the phenomena of concern which nurses needs to show, application of theory to determine nursing actions, acquisition of skills and competencies, carrying out the nursing action and evaluating the effects of nursing action (Oremann, 1991). Hence, to practice nursing, there needs to be integration of knowledge, skill and attitude through acquisition and demonstration of the required competencies. Therefore, this definition of competency was chosen to inform this review and the implementation of a competency-based assessment in the undergraduate nursing program in the Maldives.

Competency, is a concept which is gaining increased recognition in nursing. Inspite of this, there is often lack of consistency in usage of the term. There are number of ways *competency* is used. Firstly, it has been used in a complementary fashion, to reflect the

ability to perform well in a situation. Secondly, it has been used to refer to what people can do, often with a narrow task-oriented focus, rather than knowing how to apply knowledge and skill in a given situation. Lastly and more appropriately it has been referred to as integration of knowledge, skills and attitude in performance of a work related function.

There is also an emphasis on the *outcome* in the majority of definitions of competency, since competency originated from the behavioural educationalists in the 1950s, where it initially focused on intended learning outcomes and expressing instructional objectives in terms of student's behaviour. The view about competency focusing on outcome rather than process is challenged in the literature. There are authors who argue that when competency is focused on outcome rather than process it gives way to behaviourisitc, instrumental, mechanistic and reductive direction in competency framework where importance is given to the notion of what you get is more important than how you got it (Walker, 1995; Goldsmith, 1999).

The contemporary views of competency, involves not only knowing, or just being able to do something, but also being aware that you know. Hence, contemporary definitions of competency are about the acquisition of the required attributes (knowledge, skills and attitude), and the ability to integrate these attributes to perform successfully in a situation according to expectations. These expectations are competency standards, which identify the skills, knowledge and attitude required for a profession, which can also describe the unique role and context in which the professions practice is based. *Competency-based education* aims to explicitly state the competencies, which an individual should acquire at the end of the educational program to become a competent professional to enter the practice setting. In *competency-based assessment* the student is assessed against the competencies standards for a profession.

There are legal and ethical bases for the development of competency standards, since competency development is about the establishment of the boundaries in which a profession practices. Hence, there is also a utilitarian view involved which attempts to

provide a criterion for distinguishing between right and wrong actions (Reed & Ground, 1997).

Competency is indeed, a complex phenomenon where meaning is often conferred according to the purpose being served. Major problems in defining competencies seem to arise from the way they are expressed. They need to be framed within a holistic approach, which reflects the complexity of a profession. The literature emphasises the development of competency standards which describe the unique roles and functions in a comprehensive manner, are capable of being applied in the actual practice setting.

Implications for Maldivian Nursing Practice

Professional competencies are derived from acquisition of a set of attributes such as knowledge, abilities, intellectual and psychomotor skills and attitudes. There is reference in the literature, regarding the advantages of developing competency-based standards. They include maintenance of professional standards, labour market efficiency, recognition of qualifications from other countries, and as a basis for communicating the practices of a profession to the public and other professions (Gonczi et al, 1990; Preston & Walker, 1993). Maintenance of professional standards is perhaps, the most useful advantage. Most countries developed professional competency-standards as a means to develop and maintain the standards of practice in the profession. Competency standards provide in explicit terms descriptions of attributes required by a professional, to successfully perform in their practice setting. These standards will help to minimise misunderstanding both within and outside the profession. Also it offers a sound basis for judgements to enter and progress in a profession.

The motivation to develop competencies in Australian nursing arose from the nursing profession itself, where competency development was viewed as means by which the profession can monitor and maintain its own standards, self evaluate and enhance accountability to the public (Sutton & Arbon, 1994). Similarly, if the Maldivian nursing profession is to advance, there needs to be a method, by which the profession can be

monitored, maintained and developed. The Maldivian Nursing Council has stated that they will regulate nursing practice and education through the set of rules and regulations that have been formulated (Ministry of Health, 1999). However, there is a need to develop a set of competency standards that can be used as a measure against which practice and education can be based.

Maldivian nursing is unique and nursing is context and culture dependent. The Maldivian culture is also unique. Competency standards developed in another culture cannot be adopted in the Maldivian context. Thus, there is a necessity to develop competency standards that fit Maldivian culture, and reflect Maldivian nursing practice. Competency standards serve as a benchmark and provide infrastructure for linking care, quality and competence and a reference point for organising nursing practice (Dozier, 1998). Hence, the development of the Maldivian nursing standards can provide a foundation to build on and develop nursing practice in the Maldives. Thus, established competency standards can serve as a foundation for standards of care, competency based education and quality assurance and improvement (Dozier, 1998). The Maldivian nursing competencies can be the framework to guide the nursing practice in the Maldives.

There have been views expressed by Maldivian nurses that they are in need of a framework to guide their practice. There have also been difficulties encountered due to lack of standards that Maldivian nursing practice is based. Practising nurses are sometimes at loss, when they encounter problems and when they do not have guidelines to refer to. Another problem faced by Maldivian nurses is, up until recently and even now many Maldivian nurses undergo their nursing education in neighbouring countries. Therefore, when they enter nursing practice in the Maldives, the only guidelines they have is their job description. Therefore, practice is mostly based on their education and own beliefs and philosophy of what constitutes best practice. Also at present, there are a lot foreign nurses from neighbouring countries that have been employed due to a shortage of qualified Maldivian nurses. Hence, there are lots of instances when there is inconsistency in nursing care, since there are no standards or guidelines available.

Maldivian nursing is still very task oriented. More importance is given to completion of a required task rather than to addressing the holistic nature of nursing. The process of developing competency standards can provide the opportunity to explore important issues in the Maldivian nursing context, stressing the importance of providing holistic nursing care.

When newly graduated nurses are qualified through a competency-based nursing educational program, the profession can be assured that the graduate nurses are competent to practice in the workforce. These qualified nurses will be aware of their competencies and also expectations in the practice setting. They will be able to constantly reflect to improve their standard of practice.

Implications for Maldivian Nursing Education

> *The purpose of the Diploma in Nursing and Midwifery course is to train nurse-midwives to be competent in providing professional and comprehensive nursing care to individuals, families and communities in illness and in health. This nurse does by functioning as members of the health network/team, through a program which is oriented to the needs of the country (Maldives), communities and individuals. Further, the course is expected to provide a basis for professional and personal development in order to maximise the nurse's contribution to society as an individual, a responsible citizen and a competent worker.*
>
> (Institute of Health Sciences, IHS, 1991, p.6)

The nursing curriculum of IHS clearly states its purpose in providing education to produce competent nurses to the workforce of the healthcare setting in the Maldives. Even though, the profile of the nurse graduate is not explicitly stated, it can be inferred from the above statement. The attributes critical to this purpose are the ability to:

- Provide professional and comprehensive nursing care to the individuals, family and communities;

- Function as a health team member; and
- A responsible and competent worker.

A major problem that has been identified in the nursing program at IHS is that the philosophy of IHS to educate competent nurses is neither reflected in the teaching and learning process nor in the assessment. Therefore, a major issue in the recent curriculum revision was to develop a draft set of competency statements, which reflect the philosophy and purposes of the nursing program. The competency statements that were developed are as follows:

- Communicate effectively with patients family and other health professionals;
- Behave in accordance with legal, professional and ethical standards;
- Acquire inquiry and analysis skills;
- Develop inter-personal relationship;
- Adapt to changes;
- Work practice based on reliable, up to date evidence and recognised, current international standards;
- Pursues opportunities for professional development;
- Has comprehensive knowledge to provide safe and holistic care;
- Uses a variety of means of collecting data to assess patients needs and care;
- Prioritises care;
- Acts as agent for health promotion;
- Designs, conducts, evaluates and reports on health promotion and educative activities;
- Assess and diagnoses the physical, mental and social needs of the client;
- Manages the client appropriately, based on the physical, mental, social assessment;
- Assess needs of the community, using a variety of research (data gathering and management) skill; and
- Mobilises the community to identify health needs and improve its own health.

This draft set of competencies is now used as a basis for guiding the curriculum, teaching and learning process and the assessment. Intended learning outcomes for the different subjects were drawn from these statements. However, there are numerous limitations in

these competency statements. First, these statements cannot be described as competency standards as they do not have all the elements which should be in a developed competency standard. Since these competency statements do not have performance criteria, there are no performance indicators against which competency can be assessed. For competency statements to be effective, they must be worded in realistic and measurable terms (Luttrell et al, 1999). The competency statements of IHS were developed through a workshop in which only professional nurse teachers have participated in, with no contribution from the clinical nurses. These statements were also not validated as whether they truly reflect the nursing practice in the Maldives.

If the aim of nursing education in the Maldives is to produce competent nursing professionals who will perform according to expectations, then these expectations need to be stated precisely and in achievable terms. Competency standards developed at a national level, thus, can identify the standards by which the nurses can base their practice and also be used as a framework on which to base the nursing education.

It has been identified from the literature that there are number of advantages in implementing competency-based education. That is, competency-based education is:

- Outcome focused
- Incorporates actual work setting as the learning environment;
- Uses criterion reference evaluation; and
- Emphasises performance more than just knowledge.

(Speers et al, 1999)

By incorporating a competency-based approach in nursing education at IHS, the intended leaning outcomes can be drawn from competency standards. These competency standards will reflect the knowledge, skills and attitude the students need to acquire. When these are explicitly stated it will be clear for all those who are involved in nursing education, including students who will be aware of the learning needs and can work towards achieving them. In competency-based education, there is stress on incorporating the actual work setting as the environment. Since clinical education is a major part of the nursing course at

IHS, the students spend a large amount of time in the clinical setting. However, some problems encountered are that the students are not adequately supervised in the clinical setting and clinical nurses (mentors) are often not aware of the students' learning needs. By incorporating competency-standards in the student's learning, students, mentors and others involved will have a clear direction of what is to be achieved.

The disadvantages of competency-based education that have been identified are that it is time consuming and requires lot of planning initially. Though it may initially be difficult, once a systematic method of education is adopted at IHS, it will solve the problems of unplanned assessment that sometimes occurs. Another disadvantage identified by some authors is that irrespective of how a student has completed the work, it is the outcome which is given importance instead of the process required for achieving it (Speers et al, 1995). But contemporary definitions of competency stress the importance of process as well as the outcome to be achieved. It is a matter of ensuring process is incorporated into the assessment strategies adopted for instance through the use of portfolio or OSCA.

The ideas of higher education are reflected in competency-based approaches to education. In higher education the learners need to *learn how* to *learn what*. By clearly stating the required outcomes of professional competencies higher education focuses on developing these competencies through providing the potential learning experience. Thus, students need to be given the opportunity to learn to practice and reflect on the principles embedded in their practice (Barnett, 1990). Hence, there is the notion of the student as a *reflective practitioner* as advocated by Schon (1983). This is particularly important in nursing, as nursing students need to constantly reflect on their learning to gain meaning and understanding (Barnett, 1990). Thus, the general trend in nursing now is curriculum as *praxis* which is about experience in context, lifelong learning ability and development of a critically reflective practitioner (Conway, 1999). Competency based-education is based on, learning in context and preparing practitioners for requirements of the workplace. In competency-based education there is the need to demonstrate the required competencies at the end of the course. It is the assessment process, which determines whether the required

competencies are achieved and in competency-based assessment competency is inferred from performance.

It has been stated that the students' real curriculum is shown in the assessment process (Little et al, 1994). When competency-standards are used as a basis for assessment, it can articulate the link between assessment activity and competence in professional practice. When these competency standards are explicitly stated, the students will be able to reflect more broadly on their learning experiences and the assessment methods. In competency-based assessment, the process involves judging the competence of a student against pre-established standards. The process also requires gathering sufficient information to make a judgement about competence. There is reference in the literature that highlight the effectiveness of using competency-based assessment (McMillan et al, 1995; Luttrell et al, 1999). The students in these studies expressed that they were much clearer about the expectations to be met.

The competencies developed for competency-based assessment in UWSM, were derived from nursing practice and validated to ensure they reflected holistic nature of nursing practice. These competency standards included performance criteria against which performance can be measured. These authors suggest that publishing specific and explicit criteria for assessment gave the students the opportunity to prepare for assessment. The students' viewed the performance criteria as the learning objectives and it also served as a framework to provide feedback to the student. Performance criteria were cumulative and increased in complexity across the three years of their program. Though this method can provide a clear guideline on how to develop the competencies in increasing complexity across the three years of the educational program, it may not be always be possible, since at the same time it can hinder the development of competencies for a more challenging student. Hence, a challenge in implementing competency-based assessment will be to articulate the competencies to be developed across the full educational program.

By implementing competency-based assessment at IHS, the students will be clearer about the competencies they need to develop, overcoming the problem identified previously

where students were not clear about what is being assessed. Competency-based assessment also gives importance to how well an individual integrates knowledge, attitude and skill to demonstrate the competency. In competency-based assessment, it is the performance, which infers the student's competence. Hence, to assess performance, in this approach it is important to assess performance in context. Therefore, when a judgement about a student's performance is made in the actual or a simulated setting, the will be more reliable than just assessing knowledge.

Trying to explicitly state every facet of nursing practice and trying to assess them in isolation can generate a long checklist of behavioural objectives which is inappropriate, since it will be characterising a profession as possession of sets of unconnected facts and skills (Masters & McCurry, 1990). Hence, in competency-based assessment, there is stress on the importance of combining a number of elements in competency standards. This can be achieved through integrated assessment methods that give importance to holistic approach in assessment and which also address the complexity of nursing practice.

A variety of methods can be used for competency-based assessment, which include observation, interviews structured tasks such as OSCA/OSCE, extended written responses to assess the students ability to apply, analyse and synthesise knowledge, clinical based assessment and portfolios. Portfolios provide a means for students to present a wide variety of materials from learning, to reflect on the learning experience and to gather evidence on standards related to practice. This is an important method which can be used to assess student's learning in the clinical setting as it provides a means of dialogue between the student and the clinical educator. However, it is important to provide guidelines for implementation of the portfolio and also to assess expected outcomes. At IHS clinical portfolios can be used as a method of formative assessment in the clinical area, where students provide evidence of their professional and personal growth in terms of developing the required competence. It will also be necessary to develop assessment criteria for effective implementation of the portfolio.

Assessment methods that can be conducted in an actual or simulated setting are a medium for providing integrated assessment, and also increasing the validity of assessment as the performance is assessed in a setting that closely resembles the actual practice setting. This may be possible with such methods as OSCA, which can be designed by using simulated settings. As there is large number of studies that identifies the effectiveness of OSCA, it is one method that can be used to assess competencies in nursing. However, this method needs time for planning and is costly in terms of time and resources. At present the student population at IHS is very few and it is possible to conduct OSCA to assess the clinical competencies. This type of assessment occurs in a very controlled non-threatening environment for the students. The clinical examination that is conducted in the ward can be a stressful experience for the student as it is complex environment where the student or the assessors may not be able to control the multiple stimuli in that setting. Even though, at present OSCAs can be implemented in IHS, there is a need to review over time as the students number increases, which might make it impractical to conduct OSCAs.

The assessor plays an important part in assessment, hence, they need to be familiar with correct implementation of the assessment procedure to maximise validity and reliability. Providing clear guidelines and general agreement on how criteria are to be interpreted increases reliability. Studies have shown the negative effects when assessors are not properly trained and when they are not given clear guidelines (Conway, 1999). In the Maldivian nursing context, there needs to be ongoing staff education programs to facilitate the process of developing the assessors. At present it is usually the clinical nurses who are not involved in nursing education, who assesses clinical practice of the nursing students at IHS.

In developing assessment strategies the philosophical framework of the curriculum needs to be reflected in the educational program (Clifford, 1999). To implement a competency-based approach in assessment, there needs to be articulation of this approach in the philosophy and also teaching methods. Hence, to successfully develop a competency-based approach in assessment at IHS, the whole program needs to have a competency-based approach. Competencies need to be developed that will reflect the Maldivian nursing

practice and they can be used as guiding framework for curriculum teaching and learning and also assessment. Luttrell et al (1999) suggest a shift from a traditional to a competency-based curriculum is a major process that requires examination and change in every aspect of the program from the philosophical statement to the teaching/learning methods and documentation of students progress. Modification of only assessment strategies will not be enough to bring about effective change.

Apart from using competency-based approaches in educational programs in higher education, studies have shown that when a competency-based approaches is used in the professional work environment it has been effective in number of ways. *Competency-based orientation* for newly qualified graduates and newly employed staff was found to be a success. Competency-based orientation prepares the newly graduate nurse to become oriented to the new setting by developing the required competencies. The positive results of developing competency-based orientation, include improving the standard of care, the patients received, competencies providing a clear direction and expectation for new nurses, and reducing cost of orientation. Hence, this method can be implemented in the Maldivian nursing context, since at present there is increase employment of foreign nurses in the workforce. Competency- based orientation programs can be designed and implemented on a regular basis. New nurses will be able to able to develop the required competencies, which in turn will improve the standard of nursing care and act as a means for the professional growth.

Implications For Research

Increase in use of competency-based approaches in nursing education necessitates the need for further research to validate the effectiveness of competency-based approach in nursing education. Lack of these studies can be the reason for much argument against implementing competency-based approach in the profession. Studies can be used as the basis for identifying areas of weaknesses in competency-based education and also assessment. Aspects that need to be researched are the effectiveness of implementing this approach in

education and assessment, methods and tools to use in conducting competency-based assessment.

Both qualitative and quantitative research needs to be conducted in Maldivian nursing education settings to identify the problems in nursing education especially in relation to assessment. The competency statements that have been developed at IHS need to be further developed and stated in a manner that they can be used as a basis to guide the curriculum, teaching and learning and also assessment. Further they need to be validated as to whether they reflects the practice of Maldivian nursing.

Competency standards that are developed and validated at a national level can also be used as a framework to guide the IHS nursing curriculum as well as nursing practice in the Maldives. However, always limiting the nursing practice within the boundaries of competency standards can hinder the development of a profession. Therefore, even in Maldivian nursing context, competency standards need to be revised at a regular basis. Also as the profession grows competency standards need to be developed to reflect advanced level practices and practice of nurses working in speciality areas.

Recommendations For Maldivian Nursing Education

Since one of the aims of this review were to develop recommendations for implementation and ongoing use of competency-based assessment in undergraduate nursing education in the Maldives, following are the recommendations that have been derived:

1. Developing nationally accepted competency standards in nursing practice could provide means to explicitly state the competency required for practising nursing in the Maldives. This can be used as a basis for articulation of expectations between the profession and higher education. Nursing education in the Maldives can be based on the nationally developed competencies.

2. Competency standards need to be integrated in to the curriculum if they are to be used as basis for assessment. Changing from a traditional to a competency-based approach in education will need a fundamental shift in every aspect of the program. There needs to be change in the program's philosophy, profile of a graduate, teaching and learning process and in assessment that reflects competency-based approach.

3. Competency standards should be stated as broad and objective statements which can be identified as expected learning outcomes. There can be a direct relationship between what is taught and what is expected of a professional nurse in everyday practice.

4. Competency-based assessment should provide a systematic means of conducting assessment. Competency-based curriculum should provide opportunities for the students to develop these competencies and students should also be clear about what assessment is intending to measure.

5. The competency-standards and the accompanying performance criteria need to be published in advance to increase the transparency of the assessment process. This can be done by means of providing course and subject outlines at the commencement of each semester, which state the objectives, competencies to be developed, the method of assessment and assessment criteria that will be used.

6. Assessors play an important part in the assessment process, hence staff education programs need to be conducted that focus on competencies and assessment. Assessors need to be trained to carry out the assessment process and they need to be given guidance and assistance.

7. Integrated methods of assessment should be used to ascertain or assess competencies in an integrated manner, since in nursing it is important that the assessment process reflect the holistic nature of nursing. Integrated approaches should seek to combine knowledge, understanding, technical skills, attitudes, and ethics in assessment.

8. The use of competency statements can greatly enhance continuing education, where practitioners can reflect on their current practice, become self-directed and be accountable for continued learning.

To implement the above mentioned recommendations will involve a shift from a traditional to a competency-based curriculum, which, is a major process. For implementation of any process, there needs to be a systematic plan to be carried out over a period of time. Hence, to implement the recommendation, a plan for a four phase project is proposed.

Plan for implementation of a competency-based approach in the undergraduate nursing program at IHS in the Maldives

Phase	Strategies to be implemented	Time period
One	• Development of national competency standards which reflects the Maldivian nursing practice with accompanying performance criteria. • Validation of these competency standards to check as to whether they reflect the Maldivian nursing practice. • Redesigning the instructional strategies in the revised nursing programs to implement the competency-based education. • Developing an assessment strategy with integrated assessment methods to implement the competency-based approach in assessment.	One and half years (January 2001 to January 2002)
Two	• Education and training of the nursing educators, clinical educators, mentors and others involved in nursing education. • Dissemination of information to the Maldivian Nursing Council, Healthcare organisations and	Six months (January 2002 to July 2002)

	others concerned in nursing education. • Informing the students of the changes taking place	
Three	• Implementation of competency-based educational program with accompanying competency-based approaches in assessment. • Provide course and subject outlines in advance, which states the objectives, competencies to be developed, the method of assessment and assessment criteria that will be used. • Provide support and guidance to the assessors and others involved in the program • Development of measures for surveillance and monitoring of the program	2 years July 2002 to July 2004)
Four	• Evaluation of the program to assess its effectiveness after two years of implementation. • Development of an evaluation system that is built into the educational program as a means to monitor the program on a regular basis	July 2000 and then on a regular basis every year

CONCLUSION

This literature review has sought to understand competency-based assessment. In doing so it has analysed the terms *competency*, *competency based education* and *competency-based assessment* in literature. *Competency* is the individual's ability to integrate knowledge, attitude and skills to perform in a particular setting. *Competency-based education* is based on the development of those competencies throughout the educational program, where the abilities being those required by a professional to perform successfully. *Competency-based assessment* is judging the individual against pre-established criteria, which are the competency standards the learner needs to demonstrate as the required competencies of a profession.

This method of education and assessment is very appropriate for use in nursing education, since it aims to develop competent practitioners to carry out the professional activities. Since the public expects safe and competent nursing care, this method ensures the practitioners have the required competencies. Development of competency standards as the basis for assessment in the Maldivian nursing setting will ensure greater consistency between education and nursing practice. There can be a systematic educational and assessment process where students, educators, clinical nurses and others involved are clear about the educational outcomes to be achieved, thus facilitating the professional development of nursing practice. Hence, to implement this method of education and assessment at IHS in the Maldives, recommendations have been developed. Also a plan for a four-phase project is proposed to implement these recommendations.

If Maldivian nursing practice is to advance is a way that is meaningful to nurses, then it is essential that nurses, particularly administrators and educators take leadership role in implementing strategies which will increase the quality of care provided by nurses. This in turn will increase recognition of nurses and the contribution they make. Introduction of competency-based education and competency-based assessment is one means by which these gaols can be achieved.

REFERENCES

Ashworth, P., & Morrison, P. (1991). Problems of competence-based nurse education. Nurse Education Today, 11, 256-260.

Australian Nursing Council Incorporated. (1994). National validation of ANCI competencies for beginning level enrolled nurses across all areas of nursing practice: report to ANCI competencies committee. Canberra: Australian Nursing Council Inc.

Australian Nursing Council Incorporated. (1995). Outline of the ANCI national nursing competencies for registered nurses and enrolled nurses. Canberra: Australian Nursing Council.

Australian Nursing Federation. (1997). Competency standards for the advanced nurse. Melbourne: Australian Nursing Federation.

Barnett, R. (1990). The idea of higher education. Buckingham: Society for Research into Higher Education & Open University Press.

Beanland, C., Schneider, Z., LoBiondo-Wood, G., & Haber, J. (1999). Nursing research: methods, critical appraisal and utilization. Sydney: Mosby.

Bechtel, G. A., Davidhizar, R., & Bradshaw, M. J. (1999). Problem–based learning in a competency-based world. Nurse Education Today, 19, 182-187.

Benner, P. (1982). Issues in competency-based testing. Nursing Outlook, 30, 303-309.

Benner, P. (1984). From novice to expert: excellence and manpower in clinical nursing practice. Menlo Park, California: Addison-Wesley.

Benner, P., Tanner, C. A. & Chelsa, C. A. (1996). Expertise in nursing practice: caring, clinical judgement & ethics. New York: Springer Publishing Company, Inc.

Bloch, B., Clayton, B., & Favero, J. (1995). Who assesses? In W. H. Hall (Ed.), Key aspects of competency-based assessment. Adelaide: NCVER.

Boland, D. L. (1998). Developing curriculum: frameworks, outcomes, and competencies. In D. M. Billings, & J. A. Halstead (Eds.), Teaching in nursing: a guide for faculty. Philadelphia: W. B. Saunders Company.

Bowden, J. A., & Masters, G. N. (1993). Implications for higher education of a competency-based approach to education and training. Canberra: Australian Government Publishing Service.

Bradshaw, A. (1997a). Defining 'competency' in nursing (part 1): a policy review. Journal of Clinical Nursing, 6(5), 347-354.

Bradshaw, A. (1997b). Defining 'competency' in nursing (part 2): an analytical review. Journal of Clinical Nursing, 7(2), 103-111.

Bramble, K. (1994). Nurse practitioner education: enhancing performance through the use of the objective structured clinical assessment. Journal of Nursing Education, 33(2), 59-65.

Bujack, E., Little, P., McMillan, M., Dwyer, J., & Hazelton, M. (1991a). Assessing comprehensive nursing performance: the objective structured clinical assessment (OSCA) part 1 – development of the assessment strategy. Nurse Education Today, 11, 179-184.

Bujack, E., Little, P., McMillan, M., Dwyer, J., & Hazelton, M. (1991b). Assessing comprehensive nursing performance: the objective structured clinical assessment (OSCA) part 2- report of the evaluation project. Nurse Education Today, 11, 248-255.

Burbach, V. (1999). Continuing education: assuring nursing competence. Nebraska Nurse, 32(4), 6-11.

Burke, J. (1989). Introduction. In J. W. Burke (Ed.), Competency based education and training. London: The Falmer Press.

Butler, J. (1990). The identification and assessment of competencies: the nursing project and its implications (Department of Employment, Education and Training & National Office of Overseas Skills Recognition, Research paper no. 4). Canberra: Australian Government Publishing Services.

Cernik, K. & Evans, J. (1992). Developing competency objectives as a basis for planning and assessing health visiting practice and training. Nurse Education Today, 12, 37-43.

Chambers, M. (1998). Some issues in the assessment of clinical practice: a review of literature. Journal of Clinical Nursing, 7(3), 201-208.

Chapman, H. (1999). Some important limitations of competency-based education with respect to nurse education: an Australian perspective. Nurse Education Today, 19, 129-135.

Cheek, J., Gibson, T., & Gilbertson, J. (1995). Competencies: really or merely useful? In G. Gray & R. Pratt (Eds.), Issues in Australian nursing. Melbourne: Churchill Livingstone.

Clifford, C. (1994). Assessment of clinical practice and the role of the nurse teacher. Nurse Education Today, 14, 272-279.

Coates, V. E., & Chambers, M. (1992). Evaluation of tools to assess clinical competence. Nurse Education Today, 12, 122-129.

Collins, C. (1993). Introduction. In C. Collins (Ed.), Competencies: the competencies debate in Australian education and training. Canberra: Australian College of Education.

Confederation of Australian Critical Care Nurses. (1996). Competency standards for specialist critical care nurses. Hornsby, New South Wales: Confederation of Australian Critical Care Nurses.

Conway, J. (1999). Curriculum as praxis. Paper presented at the working with enquiry based and problem based learning in nursing conference, Winchester, UK.

Conway, J., Chen, S. E., & Jefferies, M.C. (1999). Assessment of professional competence in problem based learning settings: two case studies. Paper presented in the 1st Asia conference on PBL, Hong Kong. (In press).

Cropley, M. (1995). Validity. In W. C. Hall (Ed.), Key aspects of competency-based assessment. Adelaide: NCVER

Dawes, B. S. G (1999). Skills, behaviours and motivation serve as a framework for competency. AORN Journal, 70(2), 188-190.

Dawson, K. P. (1992). Attitude and assessment in nurse education. Journal of Advanced Nursing, 17, 473-479.

Donoghue, J., & Pelletier, S. D. (1991). An empirical analysis of a clinical assessment tool. Nurse Education Today, 11, 354-362.

Dozier, A. M. (1998). Professional standards: linking care, competence, and quality. Journal of Nursing Care Quality,12(4), 22-29.

Driscoll, K. M. (1990). Legal considerations in the refusal of life sustaining measures. In N. L. Chaska (Ed.), The nursing profession; turning point. St Louis: C. V. Mosby Company.

Edwards, C., & Keeley, O. (1998). Competency-based learning for the surgical assistant. Nursing Standards, 12(20), 44-47.

Ewan, C., & White, R. (1996). Teaching nursing: a self-instructional handbook (2nd ed.). London: Chapman & Hall

Fahy, K., & Lumby, J. (1988). Clinical assessment in a college program. The Australian Journal of Advanced Nursing, 5(4), 5-9.

Fearon, M. (1998). Assessment and measurement of competence in practice. Nursing Standard, 12(22), 43-47.

Ferguson, K. E., & Jinks, A. M. (1994). Integrating what is taught with what is practised in the nursing curriculum: a multi-dimensional model. Journal of Advanced Nursing, 20, 687-695.

Forker, J. E. (1996). Perspective on assessment: assessing competency for community-focused nursing practice. Nurse Educator, 21(3), 6-8.

Frost, M., & Dip, S. (1996). An analysis of the scope and value of problem based learning in education of healthcare professionals. Journal of Advanced Nursing, 25(5), 1047-1053.

Gelmon, S. B. (1999). Promoting teaching competency and effectiveness for the 21st Century. AANA Journal, 67(5), 409-416.

Girot, E. A. (1993). Assessment of competence in clinical practice-a review of the literature. Nurse Education Today, 13, 83-90.

Glen, S., & Hight, N. F. (1992). Portfolio: an 'affective' assessment strategy? Nurse Education Today, 12, 416-423.

Goldsmith, S (1999). Beyond competencies in Australian nursing. The Australian Electronic Journal of Nursing Education, [Online], 5 (1), 16 paragraphs. Available htttp://www.scu.edu.au/schools/nhcp/aejne/vol5-1/goldsmithvol5_1.htm. (2000, February, 26).

Gonczi, A., Hager, P., & Oliver, L. (1990). Establishing competency based standards in the profession (Department of Employment, Education and Training & National Office of Overseas Skills Recognition, Research paper no.1). Canberra: Australian Government Publishing Services.

Gonczi, A., Hager, P., & Athanasou, J. (1993). The development of competency-based assessment strategies for the profession (Department of Employment, Education and Training & National Office of Overseas Skills Recognition, Research paper no.8). Canberra: Australian Government Publishing Services.

Griffin, P. (1995). Competency assessment: avoiding the pitfalls of the past. Australian and New Zealand Journal of Vocational Education Research, 3(2), 34-58.

Gurvis, J. P., & Grey, M. T. (1995). The anatomy of a competency. Journal of Nursing Staff Development, 11(5), 247-252.

Hager, P. (1995). Assessment of knowledge, attitudes and values. In W. C. Hall (Ed.), Key aspects of competency-based assessment. Adelaide: NCVER

Hager, P., & Gillis, S. (1995). Assessment at higher levels. In W. C. Hall (Ed.), Key aspects of competency-based assessment. Adelaide: NCVER

Hall, W. (1995). Research in competency-based assessment. In W. C. Hall (Ed.), Key aspects of competency-based assessment. Adelaide: NCVER

Harris, R., Guthrie, H., Hobart, B., & Lundberg, D. (1995). Competency-based education and training: between a rock and a whirlpool. Melbourne: Macmillan education Australia.

Heinzer, M. M., McGoldrick, T., & McLane, S. (1996). The challenges for education in a transformed healthcare system. Nursing Administration Quarterly, 20(4), 80-88.

Hendry, C., & Farley, A. (1997). Teaching practical skills: a guide for preceptors. Nursing Standards, 11(29), 46-48.

Henfield, V. J., & Waldron, R. (1988). The use of competency statements to facilitate individualised learning. Nurse Education Today, 8, 205-211.

Hepworth, S. (1991). The assessment of student nurses. Nurse Education Today, 11, 46-52.

Hodges, J., & Hansen, L. (1999). Reconstructing a competency-based orientation for registered nurses. Journal for Nurses in Staff Development, 15(4), 152-158.

Institute of Health Sciences. (1990). Diploma in nursing and midwifery syllabus and regulations. Male, Republic of Maldives: Institute of Health Sciences.

Jasper, M. A. (1995). The potential of the professional portfolio for nursing. Journal of Clinical Nursing, 4(4), 249-255.

Johnson, J. H., Zewric, J. J., & Theis, S. L. (1999). Clinical simulation laboratory. Nurse Educator, 24(5), 37-41.

Kirkpatrick, J. M., DeWitt-Weaver, D., & Yeager, L. (1998). Strategies for evaluating learning outcomes. In D. M. Billings & J. S. Halstead (Eds.), Teaching in nursing: a guide to faculty. Philadelphia: W. B. Saunders Company.

Lendburg, C. B. (1991). Assessing the goals of nursing education: issues and approaches to evaluation outcomes. In M. Garbin (Ed.), Assessing educational outcomes. New York: National League for Nursing Press.

Lendurg, C. B., & Mitchell, C. A. (1991). Assessment of outcomes: the design and use of a real and simulation nursing performance examination. Nursing and Health Care, 12(2), 68-74.

Le Var, R. M. H. (1996). NVQs in nursing, midwifery and health visiting: a question of assessment and learning? Nurse Education Today,16, 85-93.

Little, P., Bujack, E., & McMillan, M. (1994). Preparation for competent practice. In M. McMillan & J. Townsend (Eds.), Reflections on contemporary nursing practice. Australia: Butterwoths- Heinemann.

Lofmark, A., Hannersjo, S. & Wikblad, K. (1999). A summative evaluation of clinical competence: students' and nurses' perception of inpatients' individual physical and emotional needs. Journal of Advanced Nursing, 29(4), 942-949.

Lohrman, J. M., & Kinkade, S. L. (1992). Competency-based orientation: concept, theory and program development. In J. M. Lohrman & S. L. Kinkade (Eds.), Competency-based orientation for critical care nursing. St. Louis: Mosby-Year Book.

Lovat, T. J., & Smith, D. L. (1995). Curriculum action on reflection revisited (3rd ed.). Australia: Social Science Press.

Luttrell, M, F., Lenburg, C. B., Scherubel, J. C., Jacob, S. R., & Koch, R. W. (1999). Competency outcomes for learning and performance assessment: redesigning a BSN curriculum. Nursing and Health Care Perspectives, 20(3), 134-141.

Mahara, M. S. (1998). A perspective on clinical evaluation in nursing education. Journal of Advanced Nursing, 28(6), 1339-1346.

Maier-Lorentz, M. M. (1999). Writing objectives and evaluating learning in the affective domain. Journal of Nurses in Staff Development, 15(4), 167-171.

Malcolm, D. (1998). Community education: a portfolio approach. Nursing Standard, 13(10), 40-44.

Malko, K. (1988). Evaluation for accountability. The Australian Journal of Advanced Nursing, 5(4), 12-17.

Martin, J. H., Kinnick, V. L., Hummel, F., Clukey, L., & Baird, S.C. (1997). Developing outcome assessment methods. Nurse Educator, 22(6), 35-40.

Mansfield, B. (1989). Competence and standards. In J. W. Burke (Ed.), Competency based education and training. London: The Falmer Press.

Masters, G. N., & McCurry, D. (1990). Competency-based assessment in the professions (Department of Employment, Education and Training & National Office of Overseas Skills Recognition, Research paper, No. 2). Canberra: Australian Government Publishing Services.

McGovern, M. (1997). Assessment. In T. M. Valiga & Bruderle, E. R. (Eds.), Using the arts and humanities to teach nursing. Broadway, New York: Springer Publishing Company.

McMillan, M. , Bujack, E., & Little, P. (1995). Competence: learning through assessment and appraisal. In G. Gray & R. Pratt (Eds.), Issues in Australian nursing. Melbourne: Churchill Livingstone.

Melton, R. F. (1994). Competences in perspective. Educational Research, 36(3), 285-294.

Milligan, F. (1998). Defining and assessing competence: the distraction of outcomes and the importance of educational process. Nurse Education Today, 18, 273- 280.

Ministry of Health. (1998). Health master plan 1996-2000. Republic of Maldives: Ministry of Health.

Ministry of Health. (1999). Maldives nursing council regulation. (Unpublished draft). Republic of Maldives: Ministry of Health.

Modly, D. M. (1995). Designing curriculum to advance nursing science and professional practice. In D. M. Modly, J. J. Fitzpatrick, P. Poletti, & Zanotti, R. (Eds.), Advancing nursing education world-wide. Broadway, New York: Springer Publishing Company.

Murray, L. (1995). A model for competency-based assessment of communication skills. Australian and New Zealand Journal of Vocational Education Research, 3(2), 60-71.

Murrel, K. (1998). Using a portfolio to assess clinical practice. Professional Nurse, 13(4), 220-224.

Murphy, K., & Atkins, S. (1994). Reflection with practice-led curriculum. In A. M. Palmer, S. Burns & C. Bulman (Eds.), Reflective practice in nursing: the growth of the profession. Oxford: Blackwell scientific publications.

Nagelsmith, L. (1995). Competence: an evolving concept. Journal of Continuing Education in Nursing, 26(6), 245-248.

National Office of Overseas Skills Recognition (NOOSR). (1995). The implications of national competency standards: final report (Department of Employment, Education and Training & National Office of Overseas Skills Recognition, Research paper, no. 9). Canberra: Australian Government Publishing Services.

National Training Board. (1992). National competency standards: policy and guidelines (2nd ed). Canberra: National Training Board Limited.

Neary, M. (1997). Defining the role of assessors, mentors and supervisors: part 1. Journal of Advanced Nursing, 11(42), 34-39.

Nightingale, P., Wiata, I. T., Toohey, S., Ryan, G., Hughes, C., & Magin, D. (1996). Assessing learning in universities. Sydney: University of new South Wales Press.

O'Connor, S. E., Pearce, J., Smith D., Vogeli D., & Walton, P. (1999). Monitoring the quality of pre-registration education: development, validation and piloting of competency based performance indicators for newly qualified nurses. Nurse Education Today,19, 334-341.

Oermann, M. H. (1991). Professional nursing practice. In M. H. Oermann (Ed.), Professional nursing practice: a conceptual approach. Philadelphia: J. B. Lippincott Company.

O'Neill, A., & McCall J. M. (1996). Objectively assessing nursing practices: a curricular development. Nurse Education Today, 16, 121-126.

Parsons, E. C., & Capka, M. B. (1997). Building a successful risk-based competency assessment model. AORN Journal, 66(6), 1065- 1071.

Pavlish, C. (1987). A model for clinical performance evaluation. Journal of Nursing Education, 26(8), 338-339.

Percival, E. C. (1995). Achieving national standards for regulation of nursing. In G. Gray & R. Pratt (Eds.), Issues in Australian nursing. Melbourne: Churchill Livingstone.

Preston, B., & Walker, J. (1993). Competency-based standards in the profession and higher education: a holistic approach. In C. Collins (Ed.), Competencies: the competencies debate in Australian education and training. Canberra: Australian College of Education.

Priest, H., & Roberts, P (1998). Assessing students' clinical performance. Nursing Standards, 12(48), 37-41.

Quirk, R. (1994). Educational issues in the design of courses based on competency standards: a discussion paper. St Leonards, New South Wales: Education Development Division.

Reed, J., & Ground, I. (1997). Philosophy for nursing. London: Arnold.

Reed, J., & Procter, S. (1993). Assessment of reflection. In J. Reed & S. Procter (Eds.), Nurse education: a reflective approach. London: Edward Arnold.

Reed, J., & Procter, S. (1993). Assessment of reflective practice. In J. Reed & S. Procter (Eds.), Nurse education: a reflective approach. London: Edward Arnold.

Reilly, D. E., & Oermann, M. H. (1992). Clinical teaching in nursing education (2nd ed.). New York: National League for Nursing.

Rogers, L. B. (1997). Concept analysis and development of nursing knowledge: the evolutionary cycle. In L. H. Nicoll (Ed.), Perspectives of nursing theory (3rd ed.). Philadelphia: Lippincott.

Rolls, E. (1997). Competence in professional practice: some issues and concerns. Educational Research, 39(2), 195-210.

Rowntree, D. (1987). Assessing students: how shall we know them? London: Kogan Page.

Rutherford, P. D. (1995). Competency based assessment: a guide to implementation. Melbourne: Pitman Publishing.

Ryan, M., & Carlton, K. H. (1997). Portfolio application in a school of nursing, Nurse Educator, 22(1), 35-39.

Schon, D. A. (1983). The reflective practitioner: how professionals think in action. New York: Basic Books.

Short, E. C. (1984). Competence re-examined. Educational Theory, 34, 201-207.

Speers, A. T., Gilberg, K ., & Koch, F. A. (1995). Competency-based orientation for registered perioperative nurses. AORN Journal, 62(4), 567-578.

Staab, S., Granneman, S., & Page-Reahr, T. (1996). Examining competency-based orientation implementation. Journal of Nursing Staff Development, 12(3), 139-143.

Stephen, M. (1999). Designing a competency-based practice model in a multicultural setting. Journal of Nursing Staff Development, 15(2), 56-62.

Stockhausen, L. J. (1996). The clinical portfolio. The Australian Electronic Journal of Nursing Education, [Online] 2 (2), 36 paragraphs. Available htttp://www.scu.edu.au/schools/nhcp/aejne/vol2-2/v2-21ljs.htm. (2000, February, 23).

Sutton, F. A., & Arbon, P. A. (1994). Australian nursing-moving forward? Competencies and the nursing profession. Nursing Education Today, 14, 388-393.

Thompson, M. (1991). The implementation of the ANRAC competencies. An examination of pertinent issues. Adelaide: Australian Nurses Registering Authorities Conference.

Thompson, C., & Bartels, J. E. (1999). Outcomes assessment: implications for nursing education. Journal of Professional Nursing, 15(3), 170-178.

Thompson, R., & Farrow, T., (1999). The workbook portfolio: facilitating undergraduate student leaning in the mental health clinical area. Nursing Praxis in New Zealand, 14(2), 21-29.

Thompson, E. J., & Roda, P. I. (1999). Ensuring competencies of multidisciplinary staff in patient-focussed care. Dimensions of Critical Care nursing, 18(4), 36-44.

Thurman, G. K., & Sanders, M. K. (1987). Competency-based education versus traditional education: a comparison of effectiveness. Radiologic Technology, 59(2), 164-169.

Toohey, S., Ryan, G., McLean, J., & Hughes, C. (1995). Assessing competency-based education and training: a literature review. Australian and New Zealand Journal of Vocational Education Research, 3(2), 86-113.

Tuxworth, E. (1989). Competency based education and training: background and origins. In J. W. Burke (Ed.), Competency based education and training. London: The Falmer Press.

Walker, K. (1995). Courting competency: nursing and the politics of performance practice. Nursing Inquiry, 2, 90-99.

Weinstein, S. (2000). Certification and credentialing to define competency-based practice. Journal of Intravenous Nursing, 23(1), 21-28.

Wenzel, L. S., Briggs, K. L., & Puryear, B. L. (1998). Portfolio: an authentic assessment in the age of the curriculum revolution. Journal of Nursing Education, 37(5), 208-212.

Wheeler, L. (1993). Reform of Australian vocational education and training: a competency-based system. In C. Collins (Ed.), Competencies: the competencies debate in Australian education and training. Canberra: Australian College of Education.

While, A. E. (1991). The problem of clinical evaluation – a review. Nurse Education Today, 11, 448-453.

While, A. E. (1994). Competence versus performance: which is more important? Journal of Advanced Nursing, 20, 525-531.

Wilkinson, J. (1999). A practical guide to assessing nursing students clinical practice. British Journal of Nursing, 8(4), 218-222.

Wong, F., Kember, D., Chung, L. Y. F. & Yan, L. (1995). Assessing the level of student reflection from reflective journals. Journal of Advanced Nursing, 22(1), 48-57.

Woolley, G. R., Bryan, M. S., & Davis, J. W. (1998). A comprehensive approach to clinical evaluation. Journal of Nursing Education, 37(8), 361-366.

Zvacek, S. M. (1997). What is my grade? Assessing learner progress. Tech Trends, 43(5), 39-43.