

UNIVERSITY OF THE WESTERN CAPE

**A CROSS-SECTIONAL SURVEY TO ASSESS THE
COMPETENCE OF STUDENTS REGISTERED FOR
THE B CUR PROGRAMME AT THE UNIVERSITY OF
THE WESTERN CAPE**



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DECLARATION

I, LORETTA ZELDA LE ROUX, **DECLARE THAT “A CROSS-SECTIONAL SURVEY TO ASSESS THE COMPETENCE OF STUDENTS REGISTERED FOR THE B CUR PROGRAMME AT THE UNIVERSITY OF THE WESTERN CAPE”** IS MY OWN WORK. I HAVE FULLY ACKNOWLEDGED ALL REFERENCES USED OR QUOTED IN THIS TEXT.

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DEDICATION

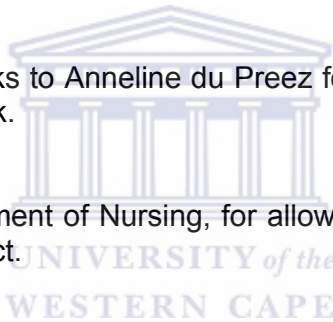
THIS WORK IS DEDICATED TO ALL NURSING STUDENTS, NURSING LECTURERS AND ALL HEALTH PROFESSIONALS IN SOUTH AFRICA.



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ABSTRACT

A CROSS-SECTIONAL SURVEY TO ASSESS THE COMPETENCE OF STUDENTS REGISTERED FOR THE B CUR PROGRAMME AT THE UNIVERSITY OF THE WESTERN CAPE

The purpose of the study was to describe the extent to which the B Cur programme at the University of the Western Cape prepared graduating learners for professional competence. The research methodology was a quantitative approach, based on descriptive research, with a clinical competence development model to guide the data collection procedure. The target population of the study included a sample of all learners in the four-year B Cur programme, from first to fourth year. Stratified random sampling was used to select the sample for this research and data were collected by means of a five-point Likert scale questionnaire. Data was organised and managed by using the SAS statistical software package. Descriptive statistics were used with measures of central tendency and dispersion included and findings were illustrated by means of descriptive tables and figures. Correlation technique was used to determine the effects of the independent variable on the dependent variable.

The results of the study indicated progression in competence did not occur as students progressed through higher levels of their training, except for the third year of study. The findings concluded that competence development is continuous and ever-evolving, and nursing educators should continuously review the curriculum, as well as teaching and assessment methods that would facilitate active learning and the development of competence both in the classroom and the clinical setting.

TABLE OF CONTENTS

Title page.....	(i)
Declaration.....	(ii)
Confirmation of editing.....	(iii)
Dedication.....	(iv)
Acknowledgements.....	(v)
Abstract.....	(vii)
List of figures and tables.....	(xiii)
List of annexure.....	(xiv)
List of abbreviations used.....	(xv)

CHAPTER 1

INTRODUCTION

1.1	TITLE.....	1
1.2	BACKGROUND TO THE STUDY.....	1
1.2.1	Current trends in nursing education.....	1
1.3	OVERVIEW OF COMPETENCY-BASED EDUCATION.....	3
1.4	ASSESSMENT IN COMPETENCY-BASED EDUCATION.....	6
1.5	SIGNIFICANCE OF THE STUDY.....	8
1.6	PROBLEM STATEMENT.....	9
1.7	PURPOSE OF RESEARCH.....	9
1.8	OBJECTIVES.....	9
1.9	HYPOTHESIS.....	9
1.10	RESEARCH METHODOLOGY.....	10
1.10.1	Research approach.....	10
1.10.2	Research design.....	10
1.10.3	Sample technique.....	10
1.10.4	Data collection.....	10

1.10.5	Data analysis.....	11
1.11	OPERATIONAL DEFINITIONS.....	11
1.12	OUTLINE OF THE DISSERTATION.....	12

CHAPTER 2

LITERATURE REVIEW

2.1	INTRODUCTION.....	14
2.2	HISTORICAL BACKGROUND ON COMPETENCY-BASED EDUCATION.....	15
2.2.1	Competency-based education in South Africa.....	16
2.3	THEORETICAL REVIEW OF COMPETENCY-BASED EDUCATION.....	19
2.3.1	Implications of competency-based education on the outcomes of the learning process.....	23
2.3.2	The process of writing outcome statements.....	25
2.3.3	The implications of competency-based education on the teaching and learning process.....	26
2.3.4	The role of experiential learning on the teaching and learning process.....	29
2.3.5	The implications of competency-based education on the assessment of learning.....	33
2.4	EMPIRICAL LITERATURE.....	35
2.5	CONCEPTUAL FRAMEWORK.....	41
2.6	CONCLUSION.....	50

CHAPTER 3

RESEARCH METHODOLOGY

3.1	INTRODUCTION.....	51
3.2	RESEARCH APPROACH.....	51
3.3	RESEARCH DESIGN.....	51

3.4	THE POPULATION.....	52
3.4.1	Target population.....	52
3.5	SAMPLE DESCRIPTION.....	52
3.5.1	Sample technique.....	53
3.5.2	Sample frame.....	53
3.5.3	Sample size.....	54
3.6	DATA COLLECTION INSTRUMENT.....	54
3.7	RELIABILITY AND VALIDITY.....	55
3.7.1	Reliability.....	55
3.7.2	Validity.....	55
3.7.2.1	Content validity.....	55
3.8	ETHICAL CONSIDERATIONS.....	56
3.8.1	Permission.....	56
3.8.2	Informed consent.....	56
3.8.3	Respect for human dignity.....	57
3.8.4	Anonymity and confidentiality.....	57
3.8.5	Protection from harm.....	57
3.9	DATA COLLECTION.....	57
3.10	DATA ORGANISATION.....	58
3.11	CONCLUSION.....	58

CHAPTER 4

DATA ANALYSIS

4.1	INTRODUCTION.....	59
4.2	REALISATION OF THE STUDY.....	59
4.2.1	Sample description.....	59

4.2.1.1	The final sample size.....	59
4.3	DATA ANALYSIS.....	60
4.3.1	Summary of results.....	60
4.3.2	Presentation of the instrument.....	62
4.3.3	Presentation of results.....	64
4.3.4	Correlation of competency variables and year.....	68
4.4	CONCLUSION.....	74

CHAPTER 5

SUMMARY, LIMITATIONS, IMPLICATIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1	SUMMARY OF THE STUDY.....	75
5.2	DISCUSSION OF THE RESULTS.....	76
5.2.1	Feelings of competence in first-year students.....	77
5.2.2	Feelings of competence in second-year students.....	79
5.2.3	Feelings of competence in third-year students.....	81
5.2.4	Feelings of competence in fourth-year students.....	83
5.3	LIMITATIONS.....	85
5.3.1	Similarities and differences between competence and performance.....	85
5.3.2	The data collection instrument.....	86
5.3.3	Other variables influencing competence.....	86
5.4	IMPLICATIONS.....	87
5.5	RECOMMENDATIONS.....	89
5.5.1	Future research projects.....	89
5.5.1.1	Replication of the study.....	89
5.5.1.2	Focus on various aspects comprising competence.....	89
5.5.2	Recommendations specific to the study.....	90

5.5.2.1 Implementation of learner-centred teaching and learning strategies that will cultivate student competence.....	90
5.5.2.2 Clinical experiences of students should adequately meet learning objectives.....	90
5.5.2.3 Reviewing the purpose of assessing students.....	91
5.5.2.4 More collaboration between the schools of nursing and service sectors...	92
5.5.2.5 In-service education for staff.....	92
5.6 CONCLUSION.....	93
6. REFERENCES.....	95



LIST OF FIGURES AND TABLES

FIGURES:

Figure 2.1: Diagrammatic presentation of Stufflebeam's evaluation model.....	46
Figure 4.1: Competence 1.....	71
Figure 4.2: Competence 2.....	72
Figure 4.3: Competence 3.....	72
Figure 4.4: Competence 4.....	72
Figure 4.5: A scatter plot presenting the association between Competence 3 and Competence 4.....	73



TABLES:

Table 3.1: Sample frame.....	53
Table 3.2: Presentation of final sample size.....	57
Table 4.1: Presentation of final sample size.....	60
Table 4.2: Mean scores in section 1.....	65
Table 4.3: Mean scores in section 2.....	66
Table 4.4: Mean scores in section 3.....	67
Table 4.5: Mean scores in section 4.....	68
Table 4.6: The correlation procedure.....	70

LIST OF ANNEXURES

Annexure 1: Letter of application to Department of Nursing, UWC

Annexure 2: Letters of approval

Annexure 3: Letter for informed consent

Annexure 4: Data collection tool



LIST OF ABBREVIATIONS

ABBREVIATION	MEANING
B CUR	Bacaulaurette Curationis
CBE	Competency-based education
CIPP	Consent, Input, Process and Product
NQF	National Qualifications Framework
OBE	Outcomes-based education
OSCE	Objective Structured Clinical Evaluation
SAQA	South African Qualifications Authority
UMass	University of Massachusetts
UWC	University of the Western Cape



CHAPTER 1

INTRODUCTION

1.1 TITLE

A cross-sectional survey to assess the competence of students registered for the B Cur programme at the University of the Western Cape.

1.2 BACKGROUND TO THE STUDY

1.2.1 Current trends in nursing education

Dissatisfaction with education and training became a continuous and global problem due to poor performance of school leavers in the service sector (Malan, 1997: 1). Nationwide, fundamental rethinking and change occurred regarding the relevance of education.

The education of nurses was also placed under constant scrutiny in terms of how prepared professional practitioners were after completion of educational programmes (Campbell & Mckay, 2001: 22; Flanagan, Baldwin & Clarke, 2000: 362). According to Watkins (2000: 3), nursing education was traditionally focused on an apprenticeship model, in which learning and teaching emphasised mostly knowing about subject content without really linking it to practice, with a resultant theory-practice gap. This resulted in individuals who were not exposed to applying skills such as critical thinking, problem-solving and theory-to-practice application, and who were thus not able to render quality patient care. A growing need existed for nursing programmes in higher education to adopt a multi-disciplinary approach, as it was essential for nursing students to work along others from different disciplines; thus, in a multi-professional team. These kinds of problematic issues eventually resulted in innovative

teaching and learning practices where the central focus was on producing competent practitioners who would successfully fulfil adult or life roles after completion of their respective educational courses.

Since education and training was questioned in terms of how well it really prepared graduates for future life roles, an outcomes-based approach to education was adopted. Outcomes-based education (OBE), won support among countries such as the United States, Canada, Australia and New Zealand since the mid-1980s in order to build the bridge between school education and vocational training (Manno, 1994: 1; Malan, 1997: 3). South Africa also introduced its own version of OBE, which formed the foundation of Curriculum 2005 (Malan, 1997: 3). An underlying theory of OBE is competency-based education, which was introduced due to concerns about the incongruence between higher education and the service sector (Malan, 2000: 22). Higher education programmes, such as nursing, therefore started to shift their focus to the achievement of outcomes in the educational process. Nursing education in South Africa responded positively to outcomes-based education, as it was seen as a way of overcoming the inequalities in education left by the legacy of apartheid.

One of the aims of the School of Nursing at the University of the Western Cape (UWC) was to establish itself as an innovative educational facility in South Africa, which was in line with the 2003 restructuring proposal of the Minister of Education to position the UWC as one of the two enrolling institutions in the region. Part of reaching the goal was that the undergraduate programme (B Cur) had to implement teaching and learning strategies that would promote active learning and according to which self-directed learning would form the centre of academic and clinical teaching and learning. The undergraduate curriculum at UWC's School of Nursing was therefore redesigned to reflect outcomes-based learning, and is being followed since 2005. This implied an increased intake of students

into the programme, and that students who registered for the B Cur programme for the first time in 2005 would follow the new redesigned curriculum.

1.3 OVERVIEW OF COMPETENCY-BASED EDUCATION

Teaching and training is said to be effective when it brings about desired changes in learners to be more knowledgeable and better skilled, as well as positively influencing their attitudes and values. However, across the world, employers complained more and more about “how qualified” new graduates were upon entering demanding job markets. This was directly related to how curricula were organised and administered.

Traditional curricula focused on content, which might have been easy to administer and control, but, according to literature, lacked in preparing learners to practise competently at the beginning level of their chosen profession (Piercey, 1995). The ideal would thus be to establish a system that fosters a strong commitment to lifelong learning and development. In the light of this view, competency-based education has increasingly been perceived as the possible answer to educational improvement, because of its corresponding relationship between education and workplace requirements (Tanner, 2001: 387).

According to the Human Sciences Research Council (1995), competency-based (CBE) education as a model of outcomes-based education implies that an individual is competent if he or she can optimally combine knowledge, understanding, skill and attitudes in his or her performance (Uys, 2003: 29). It emphasises an individualised teaching-learning process, outcomes in terms of what individuals must know and be able to do, as well as flexibility in the achievement of outcomes (Tanner, 2001: 388). This suggested an educational approach that was not only

focused on what learners knew, but also on what they could do with the acquired knowledge.

Knowledge, skills and attitudes are the outcomes, end products or results of the teaching-learning process, and are an integral part of the CBE approach. Failure to achieve the desired outcomes can result in a situation where learners did not really acquire knowledge, skills and attitudes on completion of an educational programme, which makes the awarding of certification for competencies inappropriate and implies an inability to cope with rapidly changing workplace requirements. Concerns that learners were not taught the skills required in life after completion of an educational programme have further led South Africa's Department of Education (DoE) to establish an educational move towards CBE, which would form the foundation of Curriculum 2005 (Malan, 2000), also for education in general.

The outcomes of the teaching-learning process are described in terms of cognitive, affective and psychomotor domains, which indicates the acquisition of specific knowledge, skills and attitudes. These outcomes can occur in stages, with every new stage informing the next stage. Every stage indicates the attainment of a new outcome and yet again becomes the starting point for a new process in which learners strive to demonstrate competence in progressively more complex tasks (Malan, 1997: 15). The notion of mastery learning was therefore reflected in CBE. This implied that the completion of one outcome did not mean that the learning process ended there, but that it was rather a building block to get to the next outcome on a higher level. This view corresponded with Benner's Dreyfus model of skill acquisition, which point out the various progressive stages the learner goes through in meeting the goal of learning, namely novice, advanced beginner, competent, proficient and expert (Benner, 1984). This model was suitable for application to CBE as it signified learning as an ongoing process, moving from inability to achievement.

Since the focus in CBE shifts from teaching to learning, it emphasises a learner-centred approach in which lecturers become facilitators of learning. This postulates the shift from content-based input to competence-based output. Where traditional methods of teaching and training were founded on inputs, such as intentions and efforts, institutions and services, resources and spending, the focus in CBE was on outputs such as goals and ends, products and results (Manno, 1994: 12). As the role of the lecturer changes from learning provider and information-giver to learning facilitator, it implies an implementation of new methods and strategies of teaching, thus a move away from traditional education. On the other hand, this stimulates learners to become actively involved in the learning process, since they become responsible for finding and interpreting information for themselves. This can be proved by certain evidence which would indicate a satisfactory level of competence, and which would imply that the learner is “fit for practice” (Cook, 1999).

Due to the changing role of the lecturer from information transmitter to learning facilitator, other approaches to the teaching-learning process should be used, of which experiential learning is one. Experiential learning is suitable for application to competence-based approaches to education, because it involves active learning, is student-centred, and has a sense of autonomy and flexibility (Mellish, Brink & Paton, 2000: 99). Learning is covered holistically at all three domains of learning (cognitive, affective and psychomotor level). This means that it includes experiences which embrace knowledge, skills and attitudes. Since experiential learning aims to integrate intellect with attitudes and skills, it eliminates any gaps which may exist between thinking, feeling and doing (Nicklin, Kenworthy & De Witt, 2000: 50). Experiences that embrace knowledge, skills or both, results in the active engagement of learners in activities, who are then able to reflect on what they have seen and felt during the experience (Mellish, Brink & Paton, 2000: 98). Experiences therefore shape how the learner understands content.

Just as educators of nursing students were faced with the challenge to develop and implement new methods of teaching and learning which would ensure lifelong competence in learners, they were also faced with the challenge to develop appropriate assessment procedures that would measure professional preparedness of learners for practice.

1.4 ASSESSMENT IN COMPETENCY-BASED EDUCATION

Competency-based assessment involves the "... process of collecting evidence and making judgments on whether competence has been achieved on the basis of performance, against criteria (standards)" (Competency International, 2000: 6).

Competency-based assessment is different from traditional assessment in that the focus is not on what (content) has been learned, but what learners can do with what they have learned (outcome). This implies that when learners write examinations, the questions in the examinations should not require them to just regurgitate content, but should require them to show competence. Competence is therefore measured by performance, which means that individuals should demonstrate (perform) competence. Students consequently develop an understanding of the content, which is a cognitive skill that goes far deeper than just finding the right answer.

Where traditional assessment used passing criteria, based on marking scales, to assess primarily content, assessment in CBE relies on the setting of goals and the collection of evidence to form a judgment on whether a person is competent or not yet competent. This can be done through the use of various assessment tools, as CBE acknowledges the fact that there is more than one way for a learner to demonstrate his or her competence. The implementation of multiple assessment strategies also allows for greater flexibility in the achievement of outcomes, making

assessment more valid and reliable (Quinn, 1988: 337-338). Combining various assessment strategies would more comprehensively reflect knowledge, skills and attitudes, and allow for more a comprehensive assessment of performance. Assessment methods could include direct observation, simulation or a portfolio, all serving as the collection of evidence. Thus, the attainment of every outcome is recorded as evidence of the learner's progress through the course.

Assessment in an outcomes-based system is described by Malan (1997: 29-30) as inclusive of the following:

- Criterion-referenced assessment: Describes the abilities or competencies (specific knowledge, skills or attitudes) that a learner should be able to demonstrate. These abilities (competencies) are referred to as criteria, and a learner's performance will be measured against these criteria.
- Performance assessment: Describes the direct and systematic observation of the learner's actual performance (demonstration of competence). Thus, the learner is required to demonstrate specific skills. Assessment is done in the setting where these specific skills are actually used, and since learners are involved in their own assessment, they learn from these experiences.

Assessment of learning in the CBE approach is based on criterion-referencing, which focuses on the assessment of outcomes and not grading as such (Malan, 2000: 26-27). This involves continuous monitoring of learner weaknesses and reinforcement of learner strengths, which would imply no longer a pass or fail approach, but learners who progress according to ability. The emphasis is therefore no longer on a pass mark or distinction, but rather a demonstration of competence, which reflects its relevance in maintaining continuous competence and professional development.

1.5 SIGNIFICANCE OF THE STUDY

It was significant to undertake this study in view of the changes that have been introduced in the nursing curricula of the B Cur programme at the University of the Western Cape. The study therefore hoped to identify possible aspects that needed to be included in the curriculum which would improve the overall teaching and learning of nursing students, as well as increasing the preparedness of new graduates for competent practice through the course of their training. Underpinning this, would be the importance of the evaluation of an educational programme or curriculum in order to continuously identify how effective and worthwhile the programme is. Continuous reviewing of the curriculum would therefore prove to be beneficial to employers, staff, and students and in general, the consumers of health services.

The study would also be important in indicating how traditional educational interventions were no longer sufficient to accommodate changes and challenges in education and the service sector, or to facilitate theoretical and practical competence as the broader outcome of the educational process. This study would also be a means to indicate the importance of more studies to be done at the School of Nursing to explore teaching and learning approaches that would fully maximise the clinical and theoretical competencies of students and that would emphasise an active and learner-centred approach to learning, thereby overcoming the gap between theory and practice. This would further point to possible shortcomings in current assessment methods and highlight the importance of ensuring that assessment is valid, reliable and aimed at enhancing growth in competence, as well as the development and evolution of professional skills.

1.6 PROBLEM STATEMENT

The new curriculum model adopted by the School of Nursing at the University of the Western Cape (UWC) is based on competency-based educational principles, but due to large class sizes, lecturers mostly resort to traditional methods of teaching and learning, such as formal lecturing. Since teaching and learning still embarks on traditional methods, the same can be said of the assessment of teaching and learning. As part of a learner-centred approach, self-assessment is central to competency-based education, since learners have the opportunity to monitor their own learning and growth, something which is yet to be fully implemented at UWC's School of Nursing. Currently, assessment is heavily based on content acquisition and not merely performance-based. Therefore the challenge which remains is how to balance quantity (large student numbers) with quality (performance).

1.7 PURPOSE OF RESEARCH

The purpose of the study was to assess the extent to which the B Cur programme prepared graduating learners for professional competence.

1.8 OBJECTIVES

To determine whether there was progression in the development of learner competence from the beginning to the end of the programme.

1.9 HYPOTHESIS

The hypothesis that guided this study was that there would be a difference in the level of competence between the learners at various levels of their study.

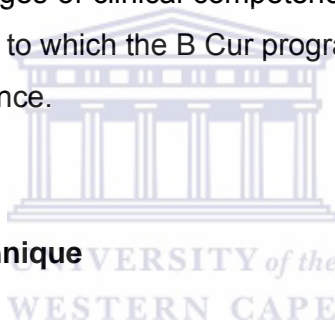
1.10 RESEARCH METHODOLOGY

1.10.1 Research approach

Quantitative research, through the use of a descriptive research approach, was followed to conduct this study, and Benner's model of clinical competence development was applied to guide the data collection procedures.

1.10.2 Research design

Benner's first four stages of clinical competence were used as a guideline to evaluate the extent to which the B Cur programme prepared learners for professional competence.



1.10.3 Sample technique

A form of probability sampling, called stratified random sampling, was used for this research. The population of the study included all learners involved in the 4-year B Cur programme at the University of the Western Cape, from level 1 to 4 during the year 2005. From every class list per year level, a single list of learner participants was compiled by selecting every third name on a class list.

1.10.4 Data collection

A five-point Likert-type questionnaire was used, and close-ended questions were constructed for this purpose. Test items constructed emphasised how learners progressed from novice to proficient, as guided by Benner's first four stages of clinical competence.

1.10.5 Data analysis

The data were organised and managed through the use of the SAS statistical software package. For baseline data, descriptive statistics were used with measures of central tendency and dispersion included, and findings were illustrated by means of descriptive paragraphs and charts. Thereafter, a correlation technique, such as the Spearman Rank Order Correlation, was used to determine the effects of the independent variables on the dependent variable. A 0.005 probability level of significance was used.

1.11 OPERATIONAL DEFINITIONS

Education:

The process of teaching and learning.

Competency-based education:

An educational approach in which the definition of outcomes forms the basis of all educational activities, for example learner assessment and curriculum.

Competence:

Includes the knowledge, skills and attributes that enable an individual to perform a role or task up to a defined level.

Outcomes:

The desired end results of the educational process (acquisition of knowledge, skills and attributes).

Competency-based assessment:

The process during which evidence is collected in order to make a judgement on whether competence has been achieved on the basis of performance.

Cross-sectional survey:

A study engaging in the collection of data of different developmental groups at one point in time in order to gather trends over time.

1.12 OUTLINE OF THE DISSERTATION

A brief outline of how the chapters were divided is as follows:

Chapter 1:

This chapter is an introduction to the problem of the study and indicates a scope of the research, as well as the methods that are used.

Chapter 2:

Reviewed literature is explored, which includes theoretical and empirical literature on competency-based education as it differs from traditional educational methods.

Chapter 3:

Includes the methodology of the study, where the design of the questionnaire, the sample design and the sample size are outlined.

Chapter 4:

The processing, analysis and evaluation of data are outlined.

Chapter 5:

The most important findings of the study are highlighted and possible conclusions and suggestions to these are presented.



CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

The focus of this chapter is to review literature that will help to establish how well curricula for undergraduate nursing programmes prepare students for competent practice after completion of their educational courses. This chapter aims to highlight how competency-based education is different from traditional practices of teaching and learning. As mentioned in chapter 1, competency-based education is an underlying model of outcomes-based education and general literature uses the two terms interchangeably. In this research project, OBE and CBE are used synonymously. The study looks at the following underpinning aspects with regard to competency-based education:

- Historical and theoretical review of competency-based education
- The implications of competency-based education on the teaching and learning process
- The implications of competency-based education on the assessment of learning
- The implications of competency-based education on the outcomes of the learning process
- The role of experiential learning on education
- Theoretical models underpinning the study

Information was obtained from both primary and secondary sources through search engines such as Google and Yahoo, as well as inter-library literature searches. Key words that were used to simplify the search were

the following: competence, competency-based education, outcomes, outcomes-based education, assessment and experiential learning.

According to Ben-Zur, Yagil and Spitzer (1999: 389), the shift from a teacher-centred to a learner-centred approach in higher education can only occur through curriculum reform, and this should be done with the purpose of developing independence and critical thinking, as well as preparing students to deal with an ever-changing health care system to be able to fulfil workplace roles. The literature that was reviewed emphasises the notion of competence and how the implementation of a competency-based approach to education is effective in preparing learners for the life roles they will have to fulfil in the workplace.



2.2 HISTORICAL BACKGROUND ON COMPETENCY-BASED EDUCATION

The move to competency-based education originated in the United States (US) around the end of the 1960s, due to an ineffective schooling system (Botha, 2002: 362). Worldwide dissatisfaction with ineffective education and training could no longer be ignored, as education and training was perceived as poor and irrelevant and it seemed to fail to adequately equip learners to cope with their roles in the job market (Malan, 1997: 3). CBE was therefore implemented because of its focus on what learners can do in the workplace after completion of an educational course or programme. After its implementation in countries such as North America, New Zealand and Canada, this educational approach has showed meaningful improvement in student learning, eventually leading to the review of then current teaching and learning practices in different countries across the world.

CBE is also associated with Ralph Tyler's curriculum objectives and rooted in the work of Benjamin Bloom, who introduced the concept of mastery learning (Malan, 1997: 14). Tyler believed in the importance of objectives

as being essential to planning and identifying learner behaviour after instruction, as well as the content and context in which these are applied. Bloom viewed learning as a process that occurs in steps, meaning that progress occurs from the easiest to the most difficult step. Learners should therefore demonstrate achievement of specific skills before moving on. Every step is viewed as a learning competence and if this step-by-step process of learning is flexible enough in terms of how and where learners should achieve competencies, it will result in successful learning.

Harden, Crosby and Davis (1999: 12) agree that CBE relates to this view, as it specifies the outcomes learners should be able to demonstrate when exiting an educational programme, as assessed by means of educational practices or activities which ensure that the learner achieved those outcomes. Implementing an outcomes-based approach, however, is dependent on the willingness of educators to implement alternative methods of teaching and learning, as well as the availability of flexible time frames in which learners have to achieve desired outcomes. While teachers will have to take full responsibility for careful planning and management, learners will have to take greater responsibility for their own learning.

2.2.1 Competency-based education in South Africa

Education in South Africa was in need of transform, due to inequalities between black, coloured, Indian and white racial classes and the fact that individual education departments had their own systems of education and training. Education in post-apartheid South Africa was in turmoil and experienced a crisis because of factors such unequal educational opportunities, irrelevant curricula, inadequately trained teaching staff and high failure and drop-out rates (Botha, 2002: 361).The movement to an outcomes-based approach to education and training was identified as the only curriculum that would result in change in the South African education context, and would put a strong focus on economic growth (Malan,

1997: 3). The educational system in South Africa was therefore also in support of OBE, not just as a means of eliminating the above types of disparities, but also as a means of answering to international tendencies in educational development (Botha, 2002: 362).

The new curriculum model was driven by various current international ideas and trends and was reshaped to fit local circumstances. Curriculum 2005, which was launched in 1997 by the South African Minister of Education, turned out to be founded on an outcomes-based education and learning approach because of its focus on what was essential for all learners to be able to do successfully after completion of learning courses; thus, outcomes (Botha, 2002: 364).

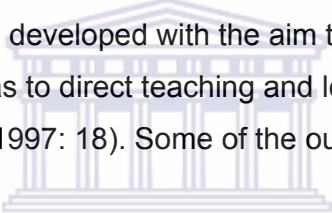
This new format of education (OBE) emphasised outcomes and assessment criteria more than content. Competence became the major concept, as it indicated the achievement of learning outcomes. The OBE philosophy clearly accentuated outcomes of learning (outputs) and not only that which was learned (inputs). This implied that what the learner could do with what he or she has learned was more important than what (content) he or she has learned. Competence was therefore measured through performance and not merely knowledge acquisition.

An essential element for the implementation of outcomes-based education in South Africa to address the fragmentation in the educational system and enhance quality, was the establishment of a national qualifications framework (NQF). The NQF makes provision for an OBE system and is a single training and education framework which should facilitate accessibility of students to the system, and improve education and training.

The South African Qualifications Authority (SAQA) was appointed in March 1997 to provide a framework to guide users of education through the establishment of standards for the entry and exiting of training

courses. SAQA was therefore established to represent all parties in education and training, and was commissioned to develop and oversee the implementation of the national qualifications framework (NQF) for South Africa (Malan, 1997: 4). Nursing education institutions, like all other higher education institutions, were challenged to ensure that their programmes were aligned with the NQF and underpinned by the OBE philosophy.

In order to reflect the life roles that learners will have to fulfil at the completion of an educational programme and upon entering the job market, SAQA developed certain learning outcomes which are known as critical cross-field outcomes. These critical cross-field outcomes are similar to the exit outcomes of Spady (1988: 5), referred to later in this chapter. These outcomes were developed with the aim to benefit the society of South Africa, as well as to direct teaching and learning in educational programmes (Malan, 1997: 18). Some of the outcomes were as follows:

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- Ability to identify and solve problems, display the skill of decision-making based on critical and creative thinking
 - Ability to work effectively as part of a team or group, institution and community
 - Ability to organise and manage personal activities in a responsible and effective manner
 - Ability to collect, analyse, organise, and critically evaluate information
 - Demonstrate understanding of the world as a set of related systems through the realisation that problem-solving contexts do not exist in isolation

For learners to demonstrate competence in these outcomes, SAQA recommended that the underlying intention of any learning programme should be to create an awareness among learners regarding the importance of aspects such as effective learning strategies, participating in community life, cultural sensitivity, and so forth.

Being the end products of our educational system, these outcomes were considered to serve as the effective outputs necessary for the fulfilment of adult or life roles and in pursuing the process of learning. Although OBE allows teachers and curriculum planners the space to be creative and autonomous, the challenge for educators remains in that it demands higher levels of responsibility and accountability to ensure the success of this system. Not only does it require changed training methods, but also new structures and systems that need to be developed to ensure the delivery of quality training.

2.3 THEORETICAL REVIEW OF COMPETENCY-BASED EDUCATION

Since its inception, there has been considerable debate around the value and definition of competency-based education, because of different conceptualisations of what CBE really entails.

Proponents of CBE view it as pragmatic in nature, as it emphasises that the purpose of education and training is ultimately focused on ensuring that learners fulfil particular roles that will meet the needs of society.

Critics of CBE see it as reductionistic, rigid, task-based, and overly prescriptive. This implies that discrete behaviour is mechanically conducted without reference to the context, ignoring underlying attributes (Tanner, 2001: 388). Tasks are therefore not connected with one another. Another criticism of CBE was its focus on content versus process, in that it de-emphasises specific subject content to favour broader outcomes, which

leaves educators with difficulty in deciding what is important enough to remain in the curriculum (McNeir 1993; Tanner 2001: 388).

Much confusion also existed around the terms “competence” and “performance”. Eraut (1994), (as cited in Watson, Stimpson, Topping & Porock, 2002: 422), describes “performance” as the demonstrated ability to do something, and indicates that “competence” represents the potential to perform. Defining the concept of competence may be difficult, due to the variety of uses for the term. It seems that no universal agreement exists among educators on the definition of “competence” (While, 1994: 525-526). It is sometimes regarded as behaviouristic in nature, while at other occasions it is the integration of knowledge and skills. The following are various definitions for competency:

“...what people can do rather than what they know”, (While, 1994: 526).

Campbell and Mackay (2001: 22), postulate that three essential components have to be present in order to define competency, which are as follows:

- i) Competence implies the ability to practice in a specific role;
- ii) The practice setting influences competence, and
- iii) Knowledge, judgment and skill are integrated into competence.

Malan (1997:10) defines outcomes-based education (OBE) as follows:

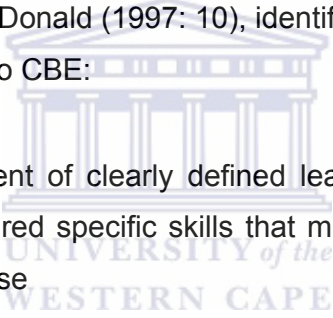
“...the definition of outcomes should form the basis of all educational activity, including the description of qualifications, the development of curricula, the assessment of learners, the

development of educational structures and institutions, and even the planning of finances, buildings and other resources.”

Spady (1994) defines OBE as a “...comprehensive approach to organizing and operating an education system that is focused on and defined by the successful demonstrations of learning sought from each student” (Malan, 2000: 25).

No matter which perspective on competence or competency-based education is followed, what is important is that competence must be easy to recognise, easy to comprehend, and meaningful and useful to the process of learning and teaching.

Van der Horst and McDonald (1997: 10), identify six critical components that are foundational to CBE:

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- The development of clearly defined learning outcomes which are based on required specific skills that must be achieved before the end of the course
 - Skills that can be mastered within a flexible time frame
 - Various instructional activities that should be used to facilitate learning
 - Outcomes that are assessed by means of criterion-referenced assessment procedures
 - Learning outcomes which are demonstrated, based on certification
 - Learning programmes that must be adaptable in order to ensure optimal learner guidance.

In addition, and corresponding with the above six components, Spady (1988: 5), describes the characteristics of a “fully operational outcomes-based school” as follows:

- A mission statement reflects its commitment to the success of all learners, as well as defining how this will be achieved
- Exit outcomes are publicly derived and explicitly state what learners must demonstrate (do) upon leaving the educational programme
- The curricular framework, courses and module outcomes are derived from the exit outcomes
- Instructional delivery is founded upon various teaching methods; it assures successful demonstration of all outcomes and provides multiple opportunities for learners to be successful
- Assessment is based on a criterion-referenced system
- Programme improvement is ongoing and includes staff accountability and collaboration, as well as effective leadership
- An efficient database, future outcomes for all learners, as well as key performance areas such as school effectiveness, are used and regularly updated with the aim to improve current programmes, conditions and practices.

From the above it is clear that in an outcomes-based approach, teaching and learning are focused on the outcomes of the learning process — the acquisition of knowledge, skills and attitudes — that will help learners to fulfil certain roles in life, be it as professional nurses or carpenters. The

most important underlying principle in CBE is thus emphasising what a learner should know, understand, demonstrate (do) and become.

2.3.1 Implications of competency-based education on the outcomes of the learning process

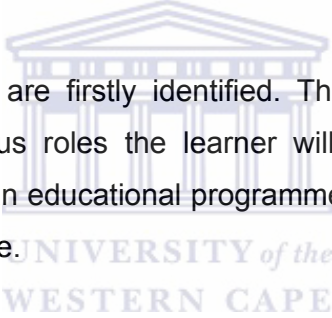
Competency-based education emphasises a shift from input to outcomes. Traditionally, the quality of education was judged by inputs such as the intentions and efforts of the profession, the characteristics of the institution and its services, and the financial resources that were available (Manno, 1994: 12). Botha (2002: 364) argues that these measures alone did not imply quality, as they did not really reflect what learners actually learned in the classroom. Harden et al. (1999: 8) also postulate that CBE is “results-orientated thinking” and the opposite of input-based education.

Outcomes can be loosely described as the end results that one or other process aims to produce (Malan, 1997: 15). Looking at the teaching and learning process, the acquisition of skills, attitudes and knowledge would be the outcomes of this process. Acquiring these outcomes, however, is never terminal or complete, since every time a learner attains a new outcome, it indicates a move to the next outcome, which corresponds with the concept of mastery learning. The process of learning therefore occurs in stages in which a learner can demonstrate his or her competence in progressively more difficult tasks, and thus the results of learning are demonstrated after every significant learning experience. This makes learning an ongoing process.

Harden, et al. (1999: 7) view CBE as a performance-based approach to education in that it focuses on the product, it is what type of nurse will be produced, and not necessarily on the process of education. This does not imply that the methods used to facilitate the teaching and learning process are not effective, but it rather questions how relevant they are to clearly defining the outcome (product) of a learning programme, since explicit outcomes will specify the nature of the product. Spady (1988: 5) notes that

teachers should base their instructions on whatever outcomes they want learners to achieve, meaning that learners must exactly know what is expected from them. Outcomes should be clearly defined and state explicitly what learners should be able to do and understand at the end of an educational programme, thus enabling them to survive and succeed in the work place (Harden, 2002:117).

Spady (1988) pursues the relevance of OBE and recommends a particular process of curriculum development, which he calls a design-down process. In this design-down process, curriculum development moves structurally from exit outcomes, down to subject outcomes, and down to lesson outcomes. The following phases are characteristic of Spady's design-down process:

- 
- Exit outcomes are firstly identified. These outcomes are derived from the various roles the learner will be required to fulfil after completion of an educational programme, for example, the role of a registered nurse.
 - Specific outcomes are then developed for each one of the exit outcomes, thus for each module of the programme. They are directly derived from the exit outcomes.
 - The development of the course outcomes (grade-level outcomes) then follows. These are the outcomes that learners have to achieve at the end of each single year in a programme. Course outcomes are also known as range statements, since they “describe the range and complexity of expected learner performance at each exit point from a course, programme or module” (Spady, 1988: 6).

- Following grade-level outcomes, unit outcomes are formulated, based on the exit outcomes and informed by the subject-specific outcomes.
- Finally, the outcomes for every lesson are developed, which will also be used as the criteria against which a learner's learning progress and development will be measured or assessed.

Clearly, from the above process described by Spady, there is movement from exit outcomes to course outcomes to specific learning activities (classroom) outcomes. Exit outcomes for the curriculum are therefore first specified, then the outcomes for the different curricular phases (levels) are derived from the exit outcomes, and the same is applied to the modular outcomes. Thus, the outcomes of the year level, as well as module and specific learning activities, must always correspond with the exit outcomes.

2.3.2 The process of writing outcome statements

The process of writing learning outcomes for an educational programme must be based on the competencies, which are then used as a framework. When writing outcomes, it is important to use language that emphasise performance, for example, the outcome of interpersonal communication might previously have been written as "learner will understand how to effectively involve patients in decision-making", whereas a performance-based outcome will be written as "learner effectively involves patients in decision-making". Looking at the above competency-based outcome, which is a performance-based outcome, it is clearly and explicitly stated what the learner will be able to do at the end of a learning experience, and not merely what the learner knows.

An important focus of outcomes-oriented educational approaches is the conversion of traditional behavioural objectives to more contemporary outcomes. Traditionally written objectives are therefore rewritten as

outcomes. As previously mentioned, outcomes are end results or end products, and they require learners to engage and become competent in the skills that are used in practice (performance-based outcomes). Objectives, however, focus on ways of learning and give directions for learning the content, which do not necessarily reflect practice-related competencies (Lenburg, 1999). Writing competency-based outcomes would thus imply that verbs such as “describe”, “discuss”, “identify”, “list” and “explain” be converted into active engagement such as “apply”, “integrate”, “implement”, “differentiate” or “formulate”, as the latter will specify actual performance which are based on knowledge, rather than only the required knowledge (Lenburg, 1999).

The ability to integrate knowledge into practice – that is the ability to engage in nursing activities where learned information is used – is thus dependent on this transitional process. In a competency-based system these objectives will also be converted to practice outcomes in answer to questions whether nurses actually apply learned information from the programme in practice.

2.3.3 The implications of competency-based education on the teaching and learning process

According to Meyer (s.a.), it is essential that the educational system in use enhances the personal development of learners, irrespective of where learning occurs (place) or the level at which it occurs.

Competency-based education is different from traditional content-based education. Conventional instruction was primarily content-based and characterised by teaching methods, such as lecturing and demonstration, teaching large groups of students, and limited engagement of students in

self-directed learning (Uys et al. 2004). Meyer (s.a.) summarises the differences between the two systems as follows:

- In content-based education, outcomes of the course or programme are written as objectives, whereas outcomes in OBE clearly indicate what learners must be able to do.
- Content-based education uses content-driven learning material, such as textbooks and study manuals. The content is theoretical in nature and the instructor decides what to include as content. OBE, however, uses outcomes-orientated learning guides, various role-players (e.g. lecturer and learner) influence the content, which is mainly practical in nature and includes specific skills that should be mastered.
- Where the instructor controls the learning events and use pre-determined lessons in content-based education, OBE views the instructor as a facilitator who flexibly presents a lesson and provides guidance to learners to achieve outcomes.
- In content-based education, the level of the learner's competence is assessed by means of paper-and-pencil tests and assessment criteria are vague, whereas OBE implements various assessment methods, such as simulations, portfolios and self-assessment, and assessment criteria are clearly defined.

Hoke and Robbins (2005: 349) postulate that teacher-centred approaches such as lecturing are often problematic, because of content that is too concentrated and covered in limited periods of time. This creates barriers to the fostering of active learning. Learner-centred approaches, such as small group presentations, case studies and so forth, are more useful to

the teaching of critical thinking skills and application of classroom knowledge in the clinical setting.

It is argued that the central point of learning and teaching should be aimed at sufficiently equipping learners with the skills and understanding necessary for modern ways of life (Malan, 1997: 11). Organising a competency-based, outcomes-oriented curriculum would imply that learners demonstrate their competence as they progress through the course. Competence would mean that the learner is able to do something, and not merely knows things.

CBE is concerned with active learning and requires learners who are self-motivated. The role of the lecturer is no longer merely that of a transmitter of information and the learner is no longer only taking in and absorbing knowledge presented to him or her by lecturers. Learners are instead allowed to draw from previous experience and knowledge, and apply it to current information to form new understandings. This stimulates learners to search for information and correct answers themselves, and thus they become actively engaged in their own learning process. Throughout this search for new information, learners can build on existing knowledge, improve their effectiveness through critical thinking, formulate questions, make assumptions and challenge the views of others to develop a deeper understanding of the learning material. They also determine the support they need (resources, material) to get the education they want (UMass, 2003).

Active learning therefore broadens learners' learning boundaries by giving them more control over their own learning and education, and it prepares them for lifelong learning, as they advance through progressively more difficult tasks. One approach to the teaching-learning process that accommodates active learning and participation, is experiential learning, which, through its provision of powerful and relevant experiences, result in

the active engagement of learners through discovery and the application of scientific skills.

2.3.4 The role of experiential learning on the teaching and learning process

Experiential learning has different applications. A famous saying of Confucius, 450 BC, stated the following: “Tell me, and I will forget. Show me, and I may remember. Involve me, and I will understand.”

Experience can be regarded as a rich source of knowledge, because it emphasises involvement, experience and engagement.

Dewey (1963) (cited in Reilly & Oerman, 1992: 27-29) suggests that experiences must be sufficiently challenging in order to promote cognitive learning, with the emphasis on interaction, reflection and experience. These three components are compounded in the formula: **experience plus reflection equals learning**. According to Dewey, for experience to result in learning, it must be able to prepare the individual for deeper, more complex experiences in the future. A meaningful educational experience will thus result in knowledge and skills acquisition, and provide continuity for following comparable situations, which will facilitate continued individual growth (Reilly & Oerman, 1992: 28). Dewey’s philosophy was foundational in the development of various views on experiential learning.

Atherton (2004) cited Kolb’s (1984) model of experiential learning as work that was build on Dewey’s philosophy as it explored the process of learning from experience. This model explains how the learning process occurs in a cyclical way as it moves from experience through reflection to conceptualising and action, and again returns to experience. Kolb explains experiential learning as “a process of having concrete experiences, reflective observations, abstract conceptualisations and active

experimentation” (Ewan & White, 2002: 30). These four concepts are explained as follows:

1. Concrete experience:

Concrete experience entails direct practical experience, where the learner is introduced to a new concept, information or situation. The experience is reflected upon by identifying what has occurred in that experience.

2. Reflective observation:

The experience becomes meaningful to the learner who observe, analyse and reflect on the situation from different perspectives.

3. Abstract conceptualisation:

The learner creates concepts and form generalisations from what was observed. New discoveries therefore become meaningful, since they relate to other discoveries. The learner is able to explain the reasons why things happen the way it does, and thus has an ability to conceptualise (describe) the experience.

4. Active experimentation:

Using concepts and descriptions, the learner is now able to solve problems, create applications and make decisions. Thus, learning experiences are connected to reality.

This model is cyclical and as applications are made to new learning, reflections upon it occurs, and learning ultimately becomes internalised. The experiential learning cycle is also flexible in that learning can start at

any stage, and the cycle may complete suddenly, or over a period of days, weeks or months (Atherton, 2004). Reflection therefore forms a vital link to hands-on learning.

Another model that strengthens and supplements experience-based learning, is Steiner and Bell's (1979) experiential taxonomy (Nicklin et al. 2000: 21). This taxonomy proposes a hierarchy of behaviour which connotes various progressive stages (below) which the learner goes through in meeting the goal of learning from the experience, thus taking the learner from inability to achievement:

- **Exposure level:**

The learner is introduced to the experience, resulting in a consciousness of the experience.

- **Participation:**

The learner's decision to physically become a part of the experience, based on the data already received.

- **Identification:**

The learner identifies with the experience both intellectually and emotionally.

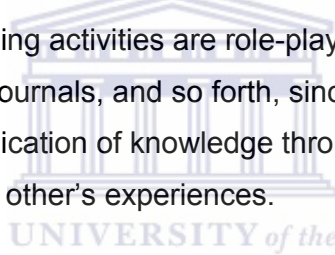
- **Internalisation or reinforcement:**

Experiences become incorporated and begin affecting the learner's daily life, changing behaviours and ways of doing things.

- **Dissemination level:**

The learner now expresses the experience, both inwardly and outwardly, advocating it to others.

The taxonomy compliments previously discussed models of experiential Learning, as it highlights a learner's attempt to interpret and develop a perception of a stimulus by means of referral to previous experiences. Experience (classroom or practice setting) is thus central to the learner's learning process, because of the learner's exposure to new information, ideas and concepts, and because of the ability to connect previous experiences and new learning, which highlights the development of understanding. Instructional methods that incorporates first-hand, personal experience from learning activities are role-plays, presentation of cases, simulation, reflective journals, and so forth, since these facilitate active engagement and application of knowledge through the forced reflection of the learner's own and other's experiences.



Nicklin et al. (2000: 22) point out that an experience-based course rather aims to integrate intellect with attitudes and skills in order to eliminate any gap which may exist between thinking, feeling and doing. Any experience thus produces participation or active involvement in all three domains of the educative process (cognitive domain – using information or knowledge, affective domain – attitudes, values, emotions, psychomotor domain – doing and motor skills). Students therefore become more supportive participants of classroom activities, covering learning in a broader context. Further to the above, the relevance of experience-based learning to competency-based education as learning is covered holistically at cognitive, affective and psychomotor level; thus integrating knowledge, skills and attitudes.

2.3.5 The implications of competency-based education on the assessment of learning

Reviewing the assessment of the educational system means reviewing of curricula, teaching and learning practices, as well as assessment of learning. Competency-based education is outcome-directed and assessment-oriented. Not only does it state the desired outcomes or results, but also how those results or outcomes will be assessed. The purpose and forms of assessment must be clearly linked to the learning process and the learning outcomes (Conway, Chen & Jefferies, 1999: 3). Traditionally, clinical assessment depended on one individual observing another's performance. This was, however, greatly subjected to observer bias and it carried no claim that the observed competence was transferred to clinical practice (Calman et al. 2002: 517). Students may get high grades (if grading is used), which may not necessarily correspond with expected results.

A variety of competency-based assessment strategies can be implemented to measure the performance and achievement of learners. Performance implies that knowledge and skills are effectively applied in a practice setting (Redman, Lenburg & Walker, 1999). CBE emphasises criterion-referenced assessment, which is appropriate in measuring practice competencies, while at the same time rectifying knowledge or skills deficits (Lenburg, 1999).

According to the Department of Education (1998), the simplest unit of assessment must be adequate to cover the integrated knowledge, skills and attitudes that are applicable in practice (Malan, 2000: 28). The learner's performance is therefore judged against a set of criteria (standards). These criteria are predetermined in order to ensure that both the learner and the assessor know the required performance. According to Redman et al. (1999), competency-based assessment is learner-centred, because specific outcomes are clearly stated in terms of what the learner

must do to demonstrate competency. Criterion-referenced assessment is described as a type of mastery teaching, since the achievement of predetermined standards signifies competence, thus performance that is up to standard. However, should the learner fail to achieve the standard, it signifies that the learner is not yet competent (not up to standard). This implies that learning occurs progressively from the easiest to the most difficult point until competence can be demonstrated (Malan, 2000: 26-27). A study done by Del Bueno (1990) revealed that after completion of an educational programme, new graduates took at least eight months of experience in the clinical field to practice confidently and competently. Del Bueno therefore stresses how important it is that educators assess competencies before assigning nursing students to practice settings or allowing them to advance to a next level in the programme.

It is important to always consider what is regarded as competent at specific levels. In order to address this concern, the expected level of performance must be defined clearly to assess whether a learner may be deemed competent or not yet competent. A competency statement is used to define each desired outcome, which is then broken down into smaller sub statements to give direction on how to achieve each competency, for example, competence is demonstrated by satisfactory learner performance and learner performance can be observed, and thus assessed. In competency-based assessment, the cognitive, psychomotor and affective domains provide the framework for assessing knowledge, skills and attitudes.

CBE focuses on formative assessment, but summative assessment is just as important. Formative assessment occurs throughout the learning process, so that learning can be continuously supported by means of meaningful feedback to learners. Summative assessments, which are formal examinations, focus on judging whether the performance demonstrated by a learner is satisfactory (Conway et al. 1999: 4).

Assessment moves away from paper-and-pencil tests, and involve procedures that measure performance. Achieving competencies should not be limited to time constraints, since competence will not necessarily be achieved during one class session or a seven-week academic term (Van der Horst & McDonald, 1997). Unlike traditional practice, where the quality and extent of learning, using anecdotal notes, were evaluated per practice session, the competency-based system provide learners with a guided and unjudged time for learning until verification of competence is required (Lenburg, 1999). During this time, the learner is coached, taught and consulted by the educator until his or her competence should be verified.

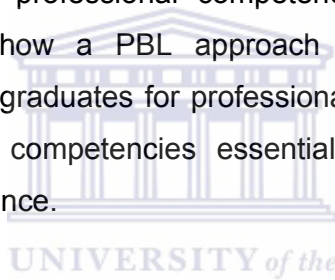
Learners should thus rather be allowed to learn from various learning experiences and over flexible time frames until a satisfactory level of performance is achieved. A portfolio is an example of such a learning experience, as it promotes reflective practice. This allows learners to learn at their own pace and in a self-directed way. Calman et al. (2002: 523) argue that assessments such as practice portfolios measure competence indirectly, since they are based on the assumption that performance is reflected by the quality of the student's written work, and therefore contribute more towards academic rather than clinical competence assessment. Whichever arguments exist, assessment in CBE should be passed on both theoretical and practical level, and it must continue until a learner's performance has improved to the level of competency. Furthermore, the learner may decide when and how often he or she should be assessed. CBE therefore meets learners at their current level and help them to reach their desired level as they master learning.

2.4. EMPIRICAL LITERATURE

The focus of this study revolves around how well learners are prepared to fit the roles they are expected to fulfil after completion of a programme. Several studies were therefore viewed to assess the important link

between higher education and the service sector, how competent performance can result from the integration of vocational competency standards into higher education curricula, as well as the importance of the assessment of that performance.

Conway et al. (1999) conducted a study at the University of Newcastle to investigate the impact of implementing competency-based assessment in a problem-based learning (PBL) programme in two unrelated professional disciplines, namely nursing and construction management. The study looked at the underlying principles of assessment approaches used to determine professional competence of learners within the framework of professional standards. Strongly emphasised in the study was the relationship between professional competencies and higher education competencies, and how a PBL approach to teaching and learning adequately prepared graduates for professional practice, thus resulting in the development of competencies essential for lifelong learning and professional performance.



A case study approach was employed during the study, as this was a practice-based research method and it valued the examination of situations in context. The “learners” were students and staff of the faculties of Architecture, Building and Design, and Nursing at the University of Newcastle, Australia. The “treatment” was the introduction of competency-based assessment into the Bachelor of Nursing programmes. Data were collected by means of interviews with both staff and students from the respective faculties regarding their experiences of assessment, an analysis of reflective journals and staff workshop data, as well as observation.

The results of the study revealed that the assessment criteria on which to base a judgment regarding the learner’s performance demanded the collection of evidence about performance and should incorporate professional performance competencies. It also revealed the importance

of ensuring that the purpose and structure of assessment activities be clear to both staff and students. Students, especially, felt that they lacked clarity regarding assessment goals, as well as guidance about strategies to meet those goals. It became evident that both staff and students had difficulty in linking learning experiences with professional competencies, and they were thus unable to conceptualise how learning experiences could result in producing professionally competent practitioners.

An important lesson that was revealed in this study, is the important link between the goals of higher education and that of the service sector, and how these goals must be centrally integrated and addressed in curricula and assessment criteria, so that the needs of the industry, profession and the community may be synchronised.

Research that was undertaken by Gillis et al. (1998) addressed the assessment of competency and the lessons that can be learned from the experiences of the vocational and training (VET) sector in Australia, and identified the implications of these for higher education. The study investigated how competency-based assessment fitted into the spectrum of assessment possibilities, and argued the dichotomy around the making of judgements on task performance, expressed as either competent or not yet competent. They argue that competency standards (ability to perform up to the expected level or standard) are too static in nature to adequately address an underlying understanding of competence. A competency standard should therefore not only be seen as grading performance on a continuum of more or less competent, but performance should rather be broken down into levels, such as “requiring direct guidance”, “complete procedure without guidance” or “evaluate own task performance”. These types of thresholds should thus be used to describe kinds of performance that are expected, and should be seen as the standard which divide competent from not yet competent.

The study investigated assessment tools, such as checklists, only as a list of assessable elements of competence; thus, single tasks which were separately assessed, but which essentially ignored complex workplace demands, such as multi-tasking and an environment continuously subject to change. A competency-based assessment model was therefore postulated in which norms, benchmarks, criteria and standards were to contribute to the interpretation of competency.

This model was assessed through the use of questionnaires administered to competency assessors in both the workplace and in classroom settings, five targeted case studies of workplace and classroom assessment, as well as analysing documents such as assessment records, verification procedures, artefacts, assessment policies and grievance procedures. The study revealed that assessor behaviour was influenced by unduly localised norms, and that assessment was largely task-oriented, which implied failure to recognise more than just a single task performance as the element to be assessed. Assessors also failed to recognise or assess multiple levels of competency, and checklists were often designed with only simple task performance in mind.

This research highlighted that the underlying principle of competency-based assessment should be to explore issues such as multi-tasking abilities, problem-solving, integrating theory into practice, and adaptability to new situations. These are more than just task performance, but are performances that are necessary to cope successfully in the workplace.

A study done by Redman, Lenburg and Walker (1999) provided an overview of how a redesigned curriculum at the University of Colorado was presented as a practice-based model and how it required competent performance among students. A programme review was held by the university's School of Nursing (CU-SoN), during which it became apparent

that traditional educational interventions were no longer sufficiently dealing with changes and challenges in education and the service sector.

A series of focus groups were held with various stakeholders as a means of responding to expressions of increased dissatisfaction around issues such as a lack of competence in clinical areas, which directly pertained to abilities such as critical thinking, problem-solving, communication and efficiency in assertiveness (highlighted as deficiencies by employers). Graduates, on the other hand, felt unprepared for entry-level competencies needed in the practice setting, and were dissatisfied, because the educational programmes were not fully learner-centred. Stakeholders included alumni, employers of CU-SoN, as well as students currently enrolled in some of the educational programmes.

The findings of this review revealed that a fundamental change in the curriculum was necessary to meet the demands of stakeholders and that it was important for graduates to have achieved expected competencies in order to fulfil roles in the practical arena. The demands of the competitive marketplace could only be met through this sort of accessibility.

As a result of this review, a competency-based outcomes and performance assessment approach was applied to all nursing programmes, with the development of core practical competencies and the replacement of traditional behavioural objectives with outcome competencies. All courses were reviewed from a competency-based perspective, including reviews of competency outcomes, interactive learning methods and assessment. Course syllabi were implemented that included definitions, explanations and information around competency-based approaches and methods to continually remind students of the performance expectations required for the course.

Responses from employers, staff and students revealed the change as a positive experience. The redesign led to the development of a new

evaluation plan for the curriculum, which included measurement instruments for the achievement of competency-based outcomes, the effectiveness of learning strategies, and also student, graduate, faculty and employer satisfaction. This plan served as a foundation to provide continuous quality improvement.

A phenomenographic research study was undertaken by Ramritu and Barnard (2001: 49-53) to look at how six new graduates, who entered the workforce three months before in two acute-care paediatric settings, understood and experienced competence. The research methods used were semi-structured interviews, and participants were asked to draw their understanding of competence.

The results of the study revealed that safe nursing practice formed the foundation of competence, and that other components of competence, such as ethics, knowledge, performance and management of time and workload, were evolving competencies. The study indicated that new graduates were in need of continued support and help from nurses who were more experienced in the clinical field. It also highlighted that the competency standards at entry level and the competencies that new graduates possessed had to match one another. It was further found that new graduate nurses were able to practice independently when performing basic level nursing care, such as hygiene needs, but were less confident in performing more advanced tasks, such as time and workload management. A lack of exposure to certain nursing experiences during undergraduate training also caused them to feel unsafe in the delivery of care.

These experiences of new graduates are relevant to health services employers of new graduates, as well as undergraduate nurse education programmes, since it directly speaks to the need for congruence between higher education and the service sector regarding expected competencies,

and emphasises the need to review teaching and learning strategies that will increase skills performance.

All of the above views relate to the current study in that they directly support the need for partnership and cooperation between higher education and practice in order to ensure that learners gain appropriate experience throughout their course of study, and achieve optimal competence development. Competence development can be enhanced further if students are placed for longer periods in high-quality placements where they will be exposed to the relevant learning opportunities.

While (1994: 527-528) argues that much greater emphasis should be placed on performance that occurs in real-life settings, than on competence, because the achievement of successful performance will ultimately produce high-quality nursing care. According to Piercey (1995), however, competence is measured through the use of performance criteria that describe the process, task and expectations according to which a competent practitioner should be able to perform, and postulates that competency-based assessment is effective in measuring the real world of practice.

This point, thus, stresses the importance of creating real life situations, because that is ultimately where competencies are required. Literature increasingly reveals that new professional practitioners, who are assumingly competent, frequently do not perform at an adequate level. Performance-based assessment should therefore be a central focus of competency-based education.

2.5 CONCEPTUAL FRAMEWORK

A combination of two conceptual frameworks was used in this study. Stufflebeam's CIPP (Context, Input, Process and Product) model was used to guide the study, while Benner's model of skill acquisition was

used to guide data collection.

Evaluating an educational programme or curriculum means to systematically investigate how effective the programme or curriculum is, and it is thus a process that continuously identifies which improvements should be in place and implements them (Singh, 2004).

Different theoretical models may be employed to introduce curriculum change and innovation. Two models will be discussed here: those of Schon (1971) and Havelock (1971), as cited in Kelly (1999: 110). Schon identified three models of dissemination. According to Kelly (1999), dissemination entails planned pathways to transmit new notions and methods in education from where it formed originally to where it should potentially be implemented. The three models of Schon are the Centre-Periphery model, the Proliferation of Centres model and the Shifting Centres model. The second and third models extend on the first model, as they are essentially different versions of fundamentally the same approach, that is the Centre-Periphery approach. The Centre-Periphery model postulates that it is important to first plan and prepare innovations centrally (decision-makers) before disseminating it to the peripheries (implementers). This model assumes that the central planners determine the needs of the customers or clients, and thus follows a one-way, centre-to-periphery process.

Havelock (1971) developed the Research, Development and Diffusion (R, D & D) model. This model highlights how the implementer passively receives the innovation(s) after problems have been identified and/or solved. Kelly (1999) calls this model a “target system”. Havelock’s second model of Social Interaction (SI) focuses on the importance of the social climate of both the consumers and the implementers. The social climate ultimately determines whether innovations take place. This model introduced the start of a shift from the centre to the periphery (Kelly, 1999).

Havelock's third model, the Problem-Solving (PS) model, completed this shift. According to this model, the consumer is actively involved in identifying problems and also in initiating innovations, instead of there being just the receiver-and-sender-relationship. Therefore, mutual support and collaboration can exist between the central planners and the implementers when all affected parties are part of the innovation (Kelly, 1999: 111). From the above, it can be seen that it is important to bridge any gaps that exist between central planners and implementers to ensure the successful evaluation of an educational programme or curriculum. All stakeholders should thus be involved in decision-making and implementing change.

The models mentioned above were not included in this study, as they are judgment-based. They make judgments on the effectiveness of an educational programme, but only at the end of the evaluation process. Alternatively, one of the conceptual frameworks that did guide this study was a decision-oriented strategy, based on Stufflebeam's CIPP model, which allows for the continuous and systematic evaluation of an educational programme. This model is developmental in that it investigates every new stage with the aim of informing the next stage on the necessary changes or innovations, thus making it an ongoing process. This kind of study is based on emphasising questions of worth by providing a knowledge and value base for making and defending decisions.

Programme evaluation entails the identification, clarification and application of justifiable criteria to determine an evaluation object's value or significance in relation to those criteria (Singh, 2004). Educational programmes are therefore compelled to assume accountability for the system by initiating processes that will identify and implement continuous improvement efforts.

Stufflebeam frequently conceptualised evaluation, based on the notion that evaluation was useful in helping educators make and defend decisions ultimately to meet learners' needs (Stufflebeam & Webster, 1980: 5). Stufflebeam's Decision-Making model relates to decisions that are made around the evaluation of an educational programme; thus the effectiveness and worth of a nursing programme.

Decision-oriented studies suggest that evaluation can be used proactively with the aim of improving the programme, or retrospectively to judge the worth of the programme (Stufflebeam & Webster, 1980: 12). Questions pertaining to worth are constantly being assessed. People in decision-making roles involved in this process of questioning include administrators, parents, learners, taxpayers, funders, and so forth. Decisions made must be based on meeting the best interest of learners' needs. Questions frequently dealt with revolve around issues such as programme revision, planning enterprises, and so forth. According to Stufflebeam & Webster (1980: 12), a great benefit of the decision-oriented strategy is that educators can use evaluation continuously and systematically during the process of planning and implementation of an educational programme, which affords them a higher level of accountability for the specific decisions they make.

Stufflebeam's CIPP model identifies four accountability indicators that guide decision-making in a programme. They are context, input, process and product (CIPP), and are discussed in more detail below.

- **Context evaluation**

Context evaluation investigates the environment or context in which a system or organisation exists. It assesses information around the needs of the stakeholders, as well as the rationale and strengths of the programme (Singh, 2004). It examines how relevant and appropriate its educational objectives are in meeting its philosophy,

beliefs and mission. The results of context evaluation determine whether goals are feasible and they also target needed changes.

- **Input evaluation**

Input evaluation focuses on whether it is necessary to implement changes that will meet the programme's goals and objectives in terms of existing or potential human and physical resources, facilities and strategies, and whether other options or alternatives are available with regard to cost-effectiveness. It also assists in deciding whether to adopt or reject curriculum or course content.

- **Process evaluation**

Process evaluation describes the actual implementation and functioning of the system in order to improve or detect deficits.

- **Product evaluation**

Product evaluation measures, interprets and judges whether the produced outcomes (intended and unintended) have met the programme objectives. This phase provides summative data, which can be utilised for decisions on the continuation or revision of the programme, and again initiates context evaluation.

Stufflebeam's CIPP framework (figure 2.1) can clearly be used effectively and systematically to direct the evaluation of an educational programme. Each of the components of this model can stand alone, and, depending on the needs of the organisation or its budget, it can use one or more of the components at any time. This study was based on Stufflebeam's CIPP model as a guide to evaluate the extent to which the B Cur programme prepared learners for competence. Stufflebeam's CIPP model therefore

provides a framework for the evaluation of an educational programme or curriculum in order to investigate its effectiveness.

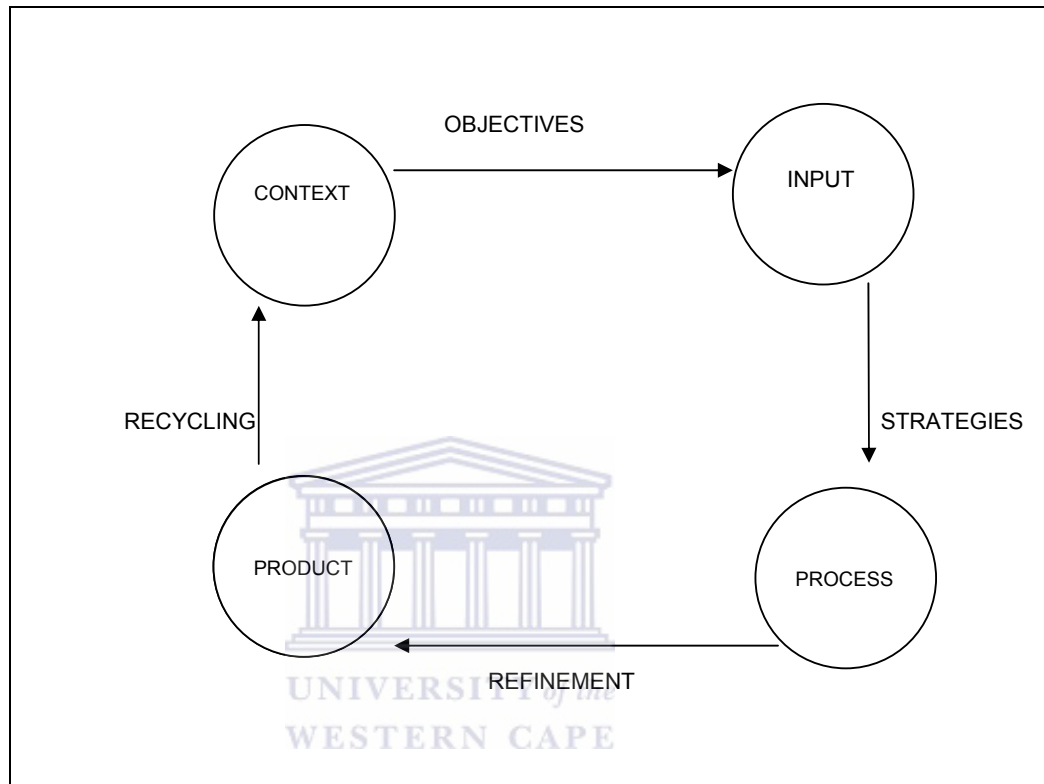


Figure 2.1: Diagrammatic presentation of Stufflebeam's evaluation model
(Source: Adapted from Clark et al. 1983: 55)

Benner's model of skills acquisition (1984), as adapted from the Dreyfus model, highlights the stages of clinical competence, and was used in this study to guide data collection, which entailed skills acquisition and the progression of competence. The first four stages of this model were used in data collection in order to measure improvement in performance from novice to proficient. The last stage of the model, that of the expert, would be more appropriate to measure in the year(s) after the completion of an undergraduate course.

This model postulates the five stages through which learners progress in skills acquisition and development, as well as the important role of experience in driving progression (Nardi & Kremer, 2003). Benner's application of the Dreyfus model (1984) points out the following different levels that reflect the changes in the process towards skilled performance, and emphasises the importance of critical thinking and reasoning skills in order to make sound clinical judgments:

1. Novice:

The novice is the learner who has just started the educational programme, and has no experience and little understanding of and discretion in situations. He or she needs rules to help him or her perform, and his or her learning is therefore rule-based and context-free. This implies that the learner only implements the rules, concepts or principles he or she has learned in the classroom to guide his or her actions, but these are not seen as part of the broader context. An example of a rule-based nursing action would be the learner who measures the blood pressure or temperature of a patient without seeing the need to interpret it. Because it is the first time he or she enters an educational programme, the learner obviously has no previous experience of the clinical area, which also implies an inability to use discretionary judgment. Until the learner masters the ability to use past concrete experiences to guide his or her actions, taught rules are the only driving force guiding his or her practice (Benner, 1984; 1982: 403).

The acquisition of skills occurs progressively for the novice as increased exposure to clinical situations allows for improved knowledge refinement and the repeating of actions, which result in the application of critical thinking through analysis and reasoning (Rhodes & Curran 2005: 257). According to Rhodes and Curran (2005: 257), various learning experiences can be implemented to

facilitate building the bridge between classroom theory and clinical practice, and help the novice to make the transition to advanced beginner.

2. Advanced beginner:

Due to prior experience, performance is marginally acceptable and principles are formulated that will guide actions (Benner, 1984). The advanced beginner is therefore able to see rules, concepts or principles as part of the greater context. An example of the nursing actions of an advanced beginner would be the learner who bases his or her decision to administer oxygen therapy to a patient, not because he or she has waited for a superior to do so, but because of the fact that the oxygen will relieve the patient's dyspnoea.

However, the advanced beginner still needs a great amount of guidance and supervision, as it will take time for classroom learning to be related to clinical experiences. Since advanced beginners cannot yet recognise most important priorities, their nursing care activities need to be backed up by nurses at a more competent level in order to ensure that important patient needs are not left unattended (Benner 1982: 404). With more experience, the novice can move from advanced beginner to competent by completing the programme.

3. Competent:

This stage is typified by the nurse who already has had two or three years of experience. Although he or she can master, cope and manage many clinical situations or procedures, his or her experience are not yet adequate to form a holistic picture of a situation in terms of which aspects are most important. The competent nurse does, however, realise how his or her actions

contribute to long-term goals, which results in the conscious and deliberate planning of actions to achieve a level of effectiveness and organisation (Benner, 1982: 405).

4. Proficient:

With a greater background due to additional experience, the proficient practitioner has the ability to recognise whole situations, which implies an improved ability to make decisions. Typical events in a given situation are expected and plans are modified in response to those events. The proficient nurse therefore has the ability to see when the expected normal picture is absent (Benner, 1982: 405). Decision-making is less difficult, due to the skill of recognising which aspects in a given situation are most important and performance of tasks is quicker and more fluid.

Both the last two phases of the model postulate that critical thinking is necessary to make clinical judgements. Rhodes and Curran (2005) describe clinical judgment as “nursing decisions made about such things as what to assess, what the health data suggest, what to do first, and who should do it”. This implies the ability to form valid conclusions about situations, which are then acted upon, and also the fact that critical thinking is applied through the recalling of facts, organising them into meaningful patterns, and using them as information in a patient care situation (Rhodes & Curran, 2005).

The challenge that faces nurse educators today is to prepare undergraduate learners to develop from novices to the point of proficient nurses in an increasingly changing health care environment. The clinical arena requires nurse practitioners who have sound decision-making skills and a high level of accountability in order to provide nursing care of a high standard and quality.

On the part of learners, a lack of experience is often an overwhelming challenge to learners, which, in turn, influences their ability to make sound clinical judgments, resulting in decreased student learning because of the fear of making a mistake (Del Bueno, 1990; Ramritu & Barnard, 2001). This is understandable, because they are faced with the challenge to preserve the life of individuals under any kind of circumstance.

The remaining challenge for nurse educators and educational programmes is therefore to provide adequate learning experiences that bring reality as close as possible to the teaching. This can, again, be facilitated by an outcomes-oriented educational system where performance-based assessment takes central focus.

2.6 CONCLUSION

In the reviewed literature, the researcher attempted to highlight how the focus of education was shifting from the educator to the student through the application of outcomes-based approaches to teaching and learning.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

Included in this chapter is an explanation of the methods used in this study. Aspects which are addressed include the research approach, research design, sample description, data collection method and instrument, as well as validity, reliability and ethical considerations.

3.2 RESEARCH APPROACH

Quantitative research, with the use of a descriptive research approach, was used to conduct this study. According to Struwig & Stead (2003: 109), quantitative research is decisive research, which includes large representative samples and relatively prearranged data collection methods, during which the testing of hypotheses takes place. Quantitative research is valuable in that it provides objective, systematic observations of nursing practice that can be drawn from fairly large numbers of individuals (Parahoo, 1997). This approach was followed through the application of one of the two conceptual models, namely Benner's stages of clinical competence development.

3.3 RESEARCH DESIGN

The study was based on a descriptive cross-sectional survey with the use of a questionnaire to determine self-reported competency at four levels of a qualification.

This design was relevant to this study, because the researcher planned to use Benner's first four stages of the clinical competence model as a guideline to describe the extent to which the B Cur programme at the University of the Western Cape prepared learners for competence.

3.4 THE POPULATION

The population of the study included all the students that were registered for the B Cur programme during 2005.

3.4.1 Target population

The target population included samples of learners involved in the four-year B Cur programme, from first- to fourth-year levels, at the Nursing Department of the University of the Western Cape.

The criteria for selecting subjects were that they had to be exposed to the same types of learning experiences in classrooms, assessment methods, and the same types of learning experiences in clinical settings. Subjects themselves could reveal first-hand information of how they perceived their progression in acquiring specific knowledge, skills, and attitudes.

The subjects were also easily accessible and available, which resulted in more economical spending of time and finances. Any changes in the quality of education would also impact positively on the learners' progress and development, particularly for students who were still in the programme. Participants would therefore provide valuable information that would be helpful in implementing possible changes where required in the current educational system.

3.5 SAMPLE DESCRIPTION

Sampling refers to the process whereby the chosen or selected portion of a particular population represents the entire population (Polit & Hungler, 1997: 207).

3.5.1 Sample technique

A form of probability sampling, called stratified random sampling, was used to select the sample for this research, since probability sampling reduces sampling errors and bias, while enhancing representation and confidence of the sample (Hek, Judd & Moule, 2003: 62).

Class lists from every group per year level was obtained, from which a single list of learner participants was compiled by means of selecting every third name on each class list, as illustrated under item 3.5.2. Subjects excluded from the sampling frame were learners who had previous training in nursing, for example, enrolled nurses or enrolled nursing assistants, as well as learners who were repeating a certain year level of the programme.

Quantitative research projects normally require larger numbers of subjects to ensure a significant statistical test, and therefore a large sample – 30% and not 10% of the population as is the norm – was chosen. This was necessary in order to reduce the effect of under-representation. This larger sample also allowed for greater generalisation of results, and minimised the non-response factor.

3.5.2 Sample frame

Printouts of class lists of every year level group of learners registered for the B Cur programme in 2005 at the University of the Western Cape were obtained and selected in the following way:

Table 3.1: Sample frame

Year level	Target population	Sample	Percentage
1	300	100	30%
2	300	100	30%
3	90	30	30%
4	65	20	30%

3.5.3 Sample size

The final sample size was 223. This included the 2005 first-year (n= 90), second-year (n= 92), third-year (n= 21) and fourth-year (n= 20) learners involved in the B Cur programme at the UWC.

3.6 DATA COLLECTION INSTRUMENT

The data collection tool constructed for this study consisted of a five-point Likert scale (1 = agree, 2 = strongly agree, 3 = don't agree or disagree, 4 = disagree, and 5 = strongly disagree), with close-ended questions only.

The instrument consisted of four sections, with the purpose of each section being to emphasise how learners progress from novice to proficient, as guided by Benner's first four stages of clinical competence development.

Section 1 of the questionnaire was based on the level of competence and skills development at the first year of study. Section 2 was focused on the second phase of competence development, where performance is supposedly relatively guided by the practitioner's prior experience; thus, performance which is to be expected at the second year of study. The test items of section 3 highlighted the increased ability to master, cope and manage certain situations. This reflected the third year of the programme. Items of section 4 reflected proficient performance, which was expected at the fourth level of the programme.

The questionnaires had to be completed by all year levels of the programme in order to provide a greater overview of how the academic and clinical performance of learners differed at each separate level. The theoretical model of Benner's stages of clinical competence development was accommodated in the data collection instrument.

3.7 RELIABILITY AND VALIDITY

3.7.1 Reliability

Reliability is a reflection of how consistent and stable an instrument measures the attributes it intends to be measuring (Polit & Hungler, 1987: 316).

To improve reliability, a large sample was selected and the instrument used had a large item content. Some items across the four sections were also constructed in more or less the same way in order to measure whether students have answered these items consistently. A further reason for doing it in this way, was to see how different year levels felt about the same concept, and therefore to identify characteristic differences between students' descriptions of the same situation, principle or concept.

Reliability might have been threatened by the fact that the questionnaire only contained close-ended questions, which might have resulted in a different response than in the case of open-ended questions.

3.7.2 Validity

Validity refers to the degree to which an instrument measures what it is supposed to measure (Hek, Judd & Moule, 2003: 74). The types of validity used to judge the accuracy of an instrument are content validity, criterion-related validity and construct validity. Content validity was used in this research project.

3.7.2.1 Content validity

Content validity measures the degree to which the instrument represents those characteristics that are to be assessed (Brockopp & Hastings-Tolsma, 1995: 190). In order to ensure that all the important areas of

concern were reflected in the instrument, the tool was pilot-tested by administering it to 5% of the sample. These participants were requested to indicate whether they had difficulty in understanding the questionnaire's instructions or the meaning of words in the questionnaire. All subjects indicated that no difficulty in answering the questionnaires was experienced, and therefore no additional changes were made to the instrument.

This indicated that the items in the instrument were based on a well-developed conceptual framework that guided the study. Test items in sections one to four of the instrument were based on the progression of academic and clinical competence as it occurs from entry to exit level in an educational programme, as guided by Benner's model of clinical competence development.

3.8 ETHICAL CONSIDERATIONS

3.8.1 Permission

Permission to conduct this study was obtained from the head of the Nursing Department at the University of the Western Cape. Ethical clearance for the study was also obtained from the Faculty of Community and Health Sciences, Higher Degrees Committee. Lecturers from each different year level were approached with the request to obtain access to their respective students.

3.8.2 Informed consent

Participants in the study were fully informed of the reasons for conducting this study, as well as why they were selected. A consent form was given to each participant for completion to indicate their voluntary participation in the study.

3.8.3 Respect for human dignity

Participants were informed both verbally and in writing regarding their right to choose whether or not to participate in the study. They also had the right to refuse disclosure of information or to withdraw from the research process at any time, should they desire to do so.

3.8.4 Anonymity and confidentiality

Participants were ensured that all information collected from this study was to be treated anonymously and confidentially. Participants were therefore not expected to write their names on the questionnaires that were distributed.

3.8.5 Protection from harm

Participants were not forced against their will to participate in this study.



3.9 DATA COLLECTION

The actual collection of data took place during the month of August 2005. Questionnaires were administered to participants with the help of an assistant, because of the large groups of participants. Participants were given approximately fifteen to twenty minutes to complete the questionnaire. The return rate of questionnaires is illustrated by means of table 3.2 below.

Table 3.2: Presentation of final sample size

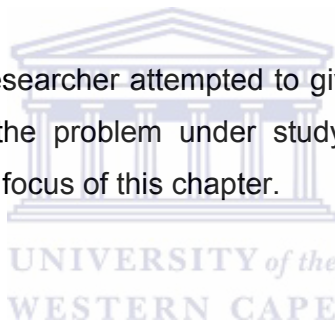
Year of training	Total students/year of training	Return rate
First year	N = 90	90%
Second year	N = 92	92%
Third year	N = 21	70%
Fourth year	N = 20	100%

3.10 DATA ORGANISATION

The data was organised and managed by using the SAS statistical software package. Participant responses were thus categorised, coded and labelled to facilitate easy access in the statistical programme. For baseline data, descriptive statistics were used with measures of central tendency and dispersion included and findings were illustrated by means of descriptive tables and figures. Correlation technique was used to determine the effects of the independent variable on the dependent variable. The probability level of significance was established at 0.005.

3.11 CONCLUSION

In this chapter, the researcher attempted to give a general understanding of how answers to the problem under study were attained. Research methodology was the focus of this chapter.



CHAPTER 4

DATA ANALYSIS

4.1 INTRODUCTION

This chapter includes an outline of the data analysis and explains the findings of the study. The findings that are presented report on feelings of competence of students at different year levels of the qualification, as encountered throughout the four years of the training programme. Data were analysed by means of a statistical software package, known as SAS, with the use of percentages to present the results.

4.2 REALISATION OF THE STUDY

4.2.1 Sample description

4.2.1.1 The final sample size

The sample in the study included a portion of students registered for the B Cur programme at the University of the Western Cape, ranging from first to fourth year. Two hundred and twenty-three ($n = 223$) students participated in the study. This included 90 first-year students out of approximately 300, 92 second-year students out of approximately 300, 20 third-year students out of approximately 90, and 21 fourth-year students out of approximately 65. This reflected approximately 30% of the total number of students from each year in order to support fair representation from all year levels.

Table 4.1: Presentation of final sample size

Year of training	Total students/year of training
First year	N = 90
Second year	N = 92
Third year	N = 21
Fourth year	N = 20
Total per institution	N = 223

4.3 DATA ANALYSIS

4.3.1 Summary of results

All the data collected were entered twice to check for discrepancies and ensure correctness. Some questions were left void in certain cases, which made it difficult to calculate total scores for those specific sections, since total scores were defined per section. In certain regards, items were answered thoughtlessly and were chosen randomly, or the same answer was written for all the questions, which could possibly not reflect the true feelings of that respondent. However, all responses were in the analyses.

The items in the questionnaire were constructed through the use of a Likert scale-type of questionnaire, namely “agree / strongly agree / don’t agree or disagree / disagree / strongly disagree”. The first two choices were therefore in reversed order. In retrospect, the choices per item lacked symmetry in that the first response was “agree”, instead of “strongly agree”. In order, therefore, to reduce any confusion that might have existed as a result of this kind of presentation, these two responses were combined for the analysis.

The researcher used descriptive data analysis measures such as percentages, tables and box and scatter plots. According to Brockopp and Hastings-Tolsma (1995: 200), descriptive research approaches describe data in an easily understandable way. Spearman's rank order correlation was used as a measure of correlation, since all the variables were on an ordinal scale. Ordinal data measurements categorise data in rank order according to certain criteria, but they do not explicitly measure the differences between the data in relation to those specific criteria (Cormack, 2000).

Of main importance in the data analysis was to determine whether students from different years answered questions regarding their progression in competence differently. The instrument consisted of 49 questions altogether and each question's result was interpreted individually.

It was thought to be more practical to summarise the results of multiple questions in a small number of variables or scores, as seen later in the chapter. Scores were therefore constructed to reflect "feelings of competency" by adding together scores on each individual question in a section. The "agree" and "strongly agree" responses were both given a score of 1.5. The other responses were scored 3, 4 or 5 (with 5 corresponding to "strongly disagree"). Questions were then studied to decide if a high score indicated more feelings of competency, and if so, were added to the total. If a low score indicated more feelings of competency, then the question was "reverse-scored". This was done with the purpose of making the responses for every question that reflect more feelings of competency result in a high score. The variables constructed in this way were named Competence 1 – Competence 4. These variables were finally added together to get a total score.

4.3.2 Presentation of the instrument

All four sections of the instrument were applicable to all year levels in the B Cur programme in order to measure feelings of competence at different stages of training. Each section presented in the instrument was based on Benner's (1984) model of skills development. The following is a brief explanation on how these sections corresponded to each of the model's first four stages, namely novice, advanced beginner, competent and proficient:

Section 1:

Items included in this section centred on clinical and theoretical competence as experienced by students in their first year of nursing, thus as novices. According to Benner (1984), the novice learner has just started the educational programme, does not possess a significant amount of pre-existing knowledge, and nursing actions are rule-based and context-free. The novice still needs significant supervision and guidance. The responses of a first-year student would thus be expected to reflect fewer feelings of competency than those of students of higher year levels.

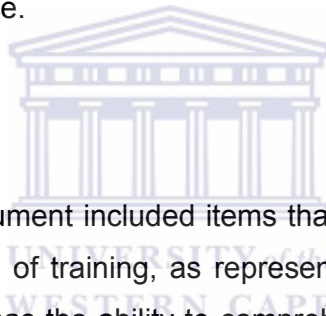
Section 2:

This section concentrated on the student in his or her second year of training and represented the advanced beginner. According to Benner (1984), prior experiences allow for marginally acceptable performance and the ability to see rules, concepts and principles as part of the greater context. The advanced beginner has both a sense of autonomy and inadequacy, and still needs much guidance and supervision, as well as more time to relate classroom learning to clinical experience. Since the advanced beginner has been exposed to more experiences than the novice, it would be expected that the second year student's previous

learning experience would be the link to having more feelings of competence than the novice.

Section 3:

Items in this section revolved around feelings of competence of the third-year student, who is regarded as competent. Benner (1984) postulates that even though students at this level may be competent, they still lack adequate experiences to holistically cope and manage situations in terms of deciding which aspects are most important. At this stage, students should be able to handle more complex situations. Compared to the higher year levels, it is to be expected that lower year levels would reflect less feelings of competence.



Section 4:

Section 4 of the instrument included items that are centred on students in their fourth year level of training, as represented by the proficient nurse. The proficient nurse has the ability to comprehend what is most important in a given situation and has improved decision-making skills (Benner, 1982). Additional experience results in performance that is both quicker and more fluid. At a fourth-year level, due to previous learning experiences, these students are expected to have the most feelings of competence.

In summary, it would therefore be expected that feelings of competency would increase as the year levels increased. Thus, the higher the level of education, the more the feelings of competency. This particular fact drove the analysis, which was to see whether feelings of competence increased as year levels increased.

4.3.3 Presentation of results

Measures of central tendency – that is mode, mean and median – were used to identify systematic variations among the target population, and to identify central characteristics of the data. These were used to establish whether different feelings of competency existed among student nurses at the different levels of the B Cur programme. The table that was constructed for this purpose specifically highlights how the mean scores differ between year levels with regard to feelings of competency.

Tables 4.2 to 4.5 present the means, medians, standard deviations, and the minimum and maximum values of the sum of the scores on questions in the particular sections that addressed competency.

Section 1: The novice

Items included in the first section of the instrument which reflected feelings of competency most strongly, included questions regarding the following: “the perception that nursing practice was easy and effortless”, “feelings of anxiety before starting clinical procedures”, “being competent or not at this particular level”, “whether first-year students can execute clinical procedures without supervision”, “identifying and improving strengths and weaknesses”, “whether practice was only guided by learned rules from the classroom”, and “having the ability to apply theory to practice”.

Table 4.2: Mean scores in section 1

Year of study	Mean	Median	Standard Deviation	Minimum	Maximum
First	22.518	22.000	3.177	16.500	31.500
Second	20.866	20.750	3.167	13.500	29.500
Third	21.895	21.000	2.542	18.500	27.000
Fourth	21.368	23.000	3.511	12.500	26.000

The highest possible score that could be obtained in this section was 35. More feelings of competence are noted among the first-year students than any of the other levels, as reflected by the highest mean score. Scores on feelings of competency therefore did not increase as year levels increased, as was expected. Most standard deviations fall between 2.542 and 3.511. As novice students, first-years had the most feelings of competency in this section. The increased feelings of competence among first-year students could possibly be attributed to their lack of exposure to clinical experiences.

Section 2: The advanced beginner

Feelings of competency were most emphasised through the following items: “the need for supervision”, “doing tasks accurately and thoroughly”, “whether problem-solving activities were difficult or not”, “taking responsibility for seeking and interpreting information without relying on classroom information alone”, “whether training adequately prepared learners for clinical experiences”, “confidence and assertiveness”, and “being slow in completing patient care activities”.

Table 4.3: Mean scores in section 2

	Mean	Median	Standard Deviation	Minimum	Maximum
First	29.806	29.500	3.225	19.500	35.500
Second	28.328	29.000	3.766	17.000	35.500
Third	28.763	29.500	5.149	15.500	34.500
Fourth	28.150	29.000	5.259	16.500	37.500

The highest possible score that could be obtained in this section was 40. More feelings of competency could be seen from among first-year level mean scores, indicating that competence did not increase as students advanced to higher year levels. The standard deviations were smaller in the first two years than the last two year levels. Large standard deviations indicate scores that are more spread from the mean, while small standard deviations reflect fewer differences among scores (Brockopp & Hastings-Tolsma, 1995:206). Although second-year students have developed a sense of independence, their functioning was still inadequate.

Section 3: Competent

Items in this section which highlighted feelings of competence, were the following: “being competent implied being an expert”, “prior experiences enhanced the ability to anticipate events and act accordingly”, “confronting peers who practise unsafe nursing care”, “being able to oversee the work of peers”, “responding to patient needs without the urge to delegate it to others”, “ability to plan own learning needs, objectives, content and assessment”, “performing tasks without needing supervision”, “having difficulty in communicating with doctors”, “enjoying teaching and assessment of peers”.

Table 4.4: Mean scores in section 3

	Mean	Median	Standard Deviation	Minimum	Maximum
First	35.926	35.000	4.297	24.000	45.500
Second	36.732	37.250	3.957	23.500	44.500
Third	37.235	38.500	4.158	30.500	44.500
Fourth	38.263	39.500	6.467	19.500	45.500

The highest possible score that could be obtained in this section was 45. From the above mean scores, it was noted that feelings of competence increased as the year level increased. First-year students reflected the fewest feelings of competence, as observed by the lowest mean score at first-year level. Standard deviations fluctuated between 3.957 and 6.467. Students at higher year levels could therefore have had greater access to opportunities of skills development in the clinical setting, where previous experiences could be related to new learning, which would foster the development of learning and understanding.

Section 4: Proficient

Questions that strongly highlighted feelings of competence of the proficient student included the following: “being competent implied being an expert”, “difficulty in decision-making skills in emergency clinical situations”, “dealing with emergencies calmly and competently”, “being able to do multi-tasking, as well as coping with interruptions at the same time”, “having difficulty in communicating with doctors regarding patient care”, “being sensitive to patient needs and preferences”, “doing tasks accurately and thoroughly”, “being able to perform competently without the need for supervision”, “recognising that nursing actions were related to an institution’s long-term goals”, and “supervising and teaching peers where necessary”.

Table 4.5: Mean scores in section 4

	Mean	Median	Standard Deviation	Minimum	Maximum
First	43.378	43.500	4.802	35.000	53.000
Second	42.768	43.500	6.401	24.000	53.000
Third	42.825	43.750	5.209	30.500	52.500
Fourth	42.884	44.500	7.537	22.500	52.500

The highest possible score that could be obtained in this section was 55. More feelings of competence are evident among first-year students when compared to higher year levels. Standard deviations ranged from 4.802 to 7.537. Feelings of competence were therefore not the highest among fourth-year students. They, like the students at third year, have more clinical experience and were therefore expected to have shown higher levels of competence.

From the above presentation, it can be summarised that feelings of competence did not essentially increase as the year level increased. Mean scores did not increase with time as such, but rather uneven scores were reflected from the above. The only positive direction followed was at the third year level, where there was a steady increase in competence from year 1 to year 4. The standard deviations among year levels were at times close, and at times also scattered, indicating that definite differences existed among the different groups.

4.3.4 Correlation of competency variables and year

In this study, the researcher aimed to determine whether the level of competence increased as the year of training in the programme increased. The dependent variables constructed in this way were named Competence 1, Competence 2, Competence 3 and Competence 4, and

were added together to get a total score. If students felt more competent with increased education, then a positive correlation would be expected between the year (independent variable) and these constructed variables. If, however, the degree of competence did not increase with increasing years, it would reflect a negative correlation or no correlation. As noted at the end of 4.3.2, the purpose driving the analysis was to determine whether competence increased as year levels increased.

The Spearman's rank order correlation was used as a measure of correlation. Spearman's rank order correlation coefficient is a non-parametric measure of the degree of relation or association between two variables that is measured on an ordinal scale (Polit & Hungler, 1987; Doordan, 1998). A correlation that is different from zero (0) reflects that a relationship exists. Mathematically correlations are also always between -1 and +1. Since all the variables in this study, that is Competence 1 – Competence 4, were on an ordinal scale, Spearman's correlation was used.

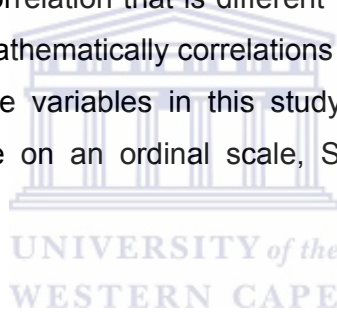


Table 4.6: The correlation procedure

6 Variables: year competence1 competence 2 competence 3 competence 4 total

Spearman Correlation Coefficients
 Prob > |r| under H0: Rho=0
 Number of Observations

	Year	Competence 1	Competence 2	Competence 3	Competence 4	Total
Year	1.00000 225	-0.15184 0.0286 208	-0.13489 0.0488 214	0.18225 0.0114 192	-0.00053 0.9940 201	-0.01785 0.8136 177
Competence 1	-0.15184 0.0286 208	1.00000 208	0.39356 <.0001 203	0.24354 0.0008 185	0.33477 <.0001 193	0.58939 <.0001 177
Competence 2	-0.13489 0.0488 214	0.39356 <.0001 203	1.00000 214	0.35619 <.0001 190	0.43166 <.0001 197	0.69005 <.0001 177
Competence 3	0.18225 0.0114 192	0.24354 0.0008 185	0.35619 <.0001 190	1.00000 192	0.58387 <.0001 184	0.75092 <.0001 177
Competence 4	-0.00053 0.9940 201	0.33477 <.0001 193	0.43166 <.0001 197	0.58387 <.0001 184	1.00000 201	0.85861 <.0001 177
Total 177	-0.01785 0.8136 177	0.58939 <.0001 177	0.69005 <.0001 177	0.75092 <.0001 177	0.85861 <.0001 177	1.00000 177

The table above represents various Spearman correlation coefficients. Looking at the second row, first column of the table, the first number represents the correlation (- 0.151), the second number represents the p value (0.028), and the third number represents the total observations (208).

Negative correlations existed between Competence 1 and year, as well as Competence 2 and year. Competence 4 and year represents a non-significant correlation. The only case where there was a positive and

significant correlation was between Competence 3 and year ($\rho = 0.18$, $p = 0.011$, $N = 192$).

Stronger correlations were noted between the dependent variables, Competence 1 and each of Competence 2 and 4, as well as Competence 2 and each of Competence 3 and 4. All of these variables had p values of less than 0.0001 and correlations ranging from 0.33 to 0.58. This result indicated that the measures used to measure competence were consistent. Thus, if a student felt competent in one section, feelings of competence would also reflect in another section. A graphic representation is given in figure 4.5 of the stronger association between Competence 3 and 4. A weaker association was found between Competence 1 and 3 ($\rho = 0.24$, $P = < 0.0008$).

Only one correlation was positive and significantly greater than zero (0), namely Competence 3 and year, where the Spearman correlation was 0.18 and the corresponding p value was 0.014. This reflected a slight relationship between year level and feelings of competence. All the other variables with year reflected either negative or non-significant correlations.

The following figures represent box plots of the variables Competence 1 to Competence 4.

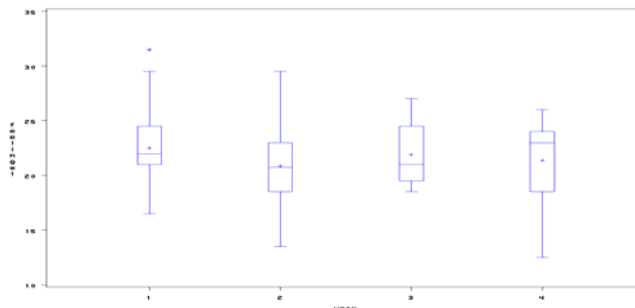


Figure 4.1: Competence1

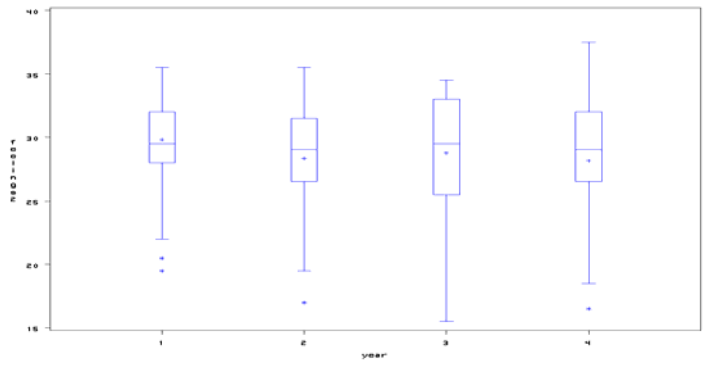


Figure 4.2: Competence 2

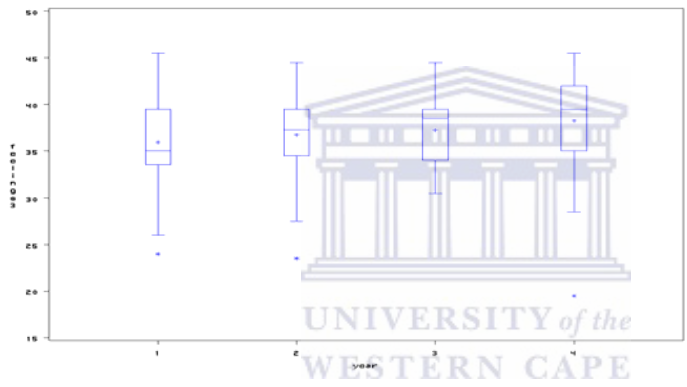


Figure 4.3: Competence 3

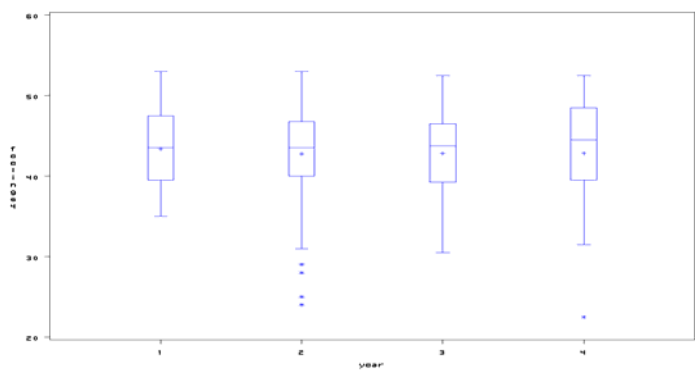


Figure 4.4: Competence 4

Figures 4.1 – 4.4 represent box plots of the variables Competence 1 to Competence 4. Box plots are useful ways of summarising descriptive data

and provide a sense of the data structure (Dupont, 2002). The box plots show the characteristics of the data, such as the medians, means, outliers, minimum and maximum scores. Looking at the above box plots, the plus sign represents the means, while the dividing line in the centre represents the median. The outliers are indicated by asterisks that indicate extreme values that are widely detached from the scores of the rest of the subjects. The vertical lines on either side of the boxes represent the minimum and maximum scores. Only the variable Competence 3 followed a slightly uphill direction, as was evident by the upwards pull of the median value. This reflected a positive relationship, as Spearman correlation is more sensitive to the median than to the mean value. It showed that as time went on, third-year students had higher feelings of competency. The medians of the other variables, Competence 1, 2 and 4, followed slightly downhill directions.

As noted under 4.3.4, the figure below presents a graphic presentation of the association between Competence 3 and 4.

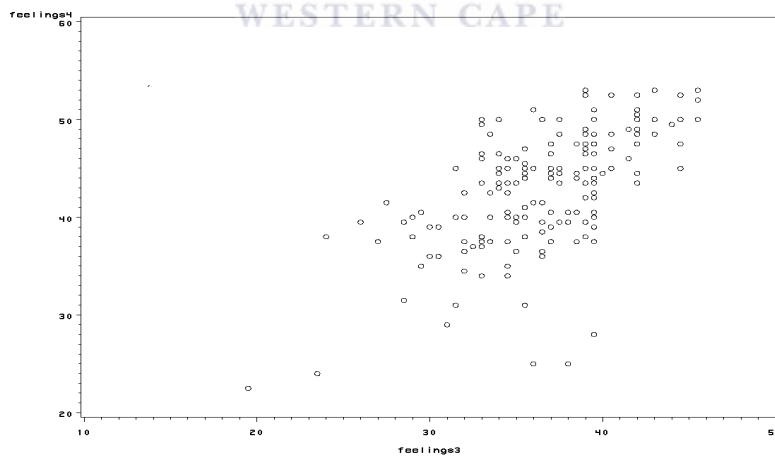


Figure 4.5: A scatter plot presenting the association between Competence 3 and 4

Scatter plots are graphic expressions of how two variables are related to one another with regard to their direction and magnitude (Seaman 1987:

351-352; McLaughlin & Marascuilo 1990). The above scatter plot reflects that a moderately positive linear relationship existed between the two dependent variables, Competence 3 and 4. These two variables had the highest correlations. High scores on the horizontal axis are complemented with high scores on the vertical axis.

All of the above results indicate that the hypothesis that there would be a difference in the level of competence between learners at various levels of their study was partially accepted, since this was only seen in students in their third year of study, where it was noted that feelings of competence increased as the year level increased. The findings of the study were therefore not conclusive to completely support the research question that feelings of competence increased as year of training increased.

4.4 CONCLUSION



This chapter outlined the data that were analysed through the use of tables and correlation. The following chapter will provide a discussion of these findings as they relate to other studies.

CHAPTER 5

SUMMARY, LIMITATIONS, IMPLICATIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 SUMMARY OF THE STUDY

The purpose of the study was to describe the extent to which the B Cur programme at the University of the Western Cape prepared graduating learners for clinical and theoretical competence. This was done against the background that the new curriculum adopted by the School of Nursing at the UWC was based on the principles of competency-based education, but still largely resorted to traditional methods of teaching and learning.

The hypothesis that guided the study was aimed at emphasising that there would be a difference in the level of competence between learners at various levels of their study. To determine this, the literature search that was done, was based on two conceptual frameworks. The CIPP model of Stufflebeam was used to guide the study process, and Benner's model of skills acquisition was used to guide the data collection. Stufflebeam's CIPP model provided a framework for the evaluation of an educational programme or curriculum in order to investigate its effectiveness. Benner's model of skills acquisition was used in data collection to measure improvement in performance from a novice to proficient level. Background information on the study was obtained from various empirical literature studies. Concepts for the search included competency-based or outcomes-based education, competence, outcomes, competency-based assessment and education.

The study embarked on a form of probability sampling, called stratified random sampling, and included a sample of learners involved in the four-year B Cur programme at the University of the Western Cape, from year 1

to 4. Data was collected by means of a five-point Likert-type questionnaire, comprising 49 items. All 49 items were tested individually, but emphasis was put on those items which strongly reflected competence. The questionnaire was completed by students of all the year levels of the programme in order to provide a greater overview of how clinical and academic performance of learners differed at each separate level. The instrument was divided into four sections, and each section was based on one of Benner's stages of skills acquisition.

Data analysis was done by means of the SAS statistical software package, due to specific preferences of the statistician. Descriptive data analysis measures such as percentages, tables and box-and-scatter plots, as well as correlation to measure whether competence increased as students progress to higher levels of training. Very little significant statistical differences were found, as will be discussed below.



5.2 DISCUSSION OF THE RESULTS

All four sections of the instrument had the same expected outcome, which was to determine whether feelings of competency would increase as students moved to higher educational year levels. As a result of this one specific outcome, all four sections will be discussed in combination. As was seen from the data analysis, feelings of competence did not increase as students progressed through higher levels of their training, except for one instance that was picked up in the third year of study.

A weak correlation was found between Competence 1 and year ($\rho = -0,15$, $p = 0,028$) and Competence 2 and year ($\rho = -0,13$, $p = 0,048$), while a non-significant association existed between Competence 4 and year. These results thus suggest that students did not increase in their level of competence as they progressed to higher year levels. The only positive

and significant relationship found was between Competence 3 and year ($\rho = 0,18$, $p = 0,011$), which supported progression in feelings of competence with higher levels of education.

An interesting phenomenon that was noted from the findings, was that first-year students, who were novices as student nurses, reflected the highest mean scores for section 1 (M = 29,806 out of the highest possible score of 40), section 2 (M = 35,926 out of the highest possible score of 45) and section 4 (M = 43,378 out of the highest possible score of 55). This finding suggest that, as novice students, first-years had higher feelings of competence, whether competence was measured at novice, advanced beginner or proficient levels. Section 3 of the instrument, which reflected feelings of competence of the third-year student (resembles the competent nurse), portrayed a steady increase from the first-year level up to the fourth year regarding how competent students felt. This was the only section where first-year students reflected the least feelings of competence. Mean scores in this section ranged from 35, 926 in the first year to 38,263 in the fourth year out of the highest possible score of 45. A discussion of possibilities for feelings of competence as experienced per year level follows.

5.2.1 Feelings of competence in first year-students

The fact that the most junior students showed more feelings of competency in most of the sections was interesting. Benner (1984) describes the novice as a learner who has just begun his or her educational programme, and who therefore does not possess a significant amount of pre-existing knowledge, but is in need of considerable supervision and guidance. His or her actions are mostly based on rules that he or she has learned in the classroom and are not related to the broader context of the situation. Rhodes and Curran (2005) support the

fact that novice students still require a variety of learning experiences in order to facilitate the application of theory in practice.

According to the researcher, increased feelings of competence among first-year students could be attributed to their lack of experience in more complex implementation of nursing care skills. Their lack of exposure to complicated real-life clinical situations, which would require more expert judgment and decision-making, could result in them being unable to actually perceive these kinds of scenarios as critical.

A study done by Nardi and Kremer (2003) on how first-year students viewed themselves as beginning providers of nursing care, found that the greater part of these students had positive perceptions regarding their own learning. Findings of the study revealed that these students already viewed themselves as critical thinkers, culturally skilled, efficient communicators and able to manage resources. Significant to note from this study, is that reflective practice was the learning strategy used in this curriculum. Ramritu and Barnard (2001: 53-54) found that new graduate nurses were able to practice independently when performing basic level nursing care, such as hygiene needs, but were less confident in using more advanced skills, such as managing bigger workloads. This assumption was therefore partially supported when considering undergraduate junior nurses, who, being at the beginning of their training, might not perceive clinical practice as difficult because of limited experiences.

A fact that is noteworthy is that the first-year students in this study were at the time exposed to a case-based learning approach in the Fundamental Nursing module, where case studies were used to stimulate problem-solving of actual or theoretical situations through the application of theory in practice (Khanyile & Mfidi, 2005: 74). This approach is close to competency-based educational methods, because it focuses on learning

outcomes, is student-centred and involves active learning. It is also consistent with the findings of the study by Hoke and Robbins (2005: 349-353) in that active learning strategies, such as small-group presentations and case studies, are useful in teaching critical thinking skills and the application of classroom-acquired knowledge in the clinical settings. Results of first-year students being more competent could therefore partially be attributed to either a lack of clinical exposure and complex real-life situations, or to the fact that innovative changes in the teaching and learning strategy could have made this difference.

5.2.2 Feelings of competence in second-year students

Students at second-year level showed no progression in competence as year level increased. In the second year, where students have just made the transition from being novices to advanced beginners, clinical experiences are still very limited. The researcher is of the opinion that clinical experience forms an integral part of learning in practical careers, such as nursing, since students learn through their experiences and can also relate the work that is learned in the classroom to scenarios in the clinical setting. According to Benner (1984), prior experience allows advanced beginners to perform marginally acceptable, and they are better able to relate concepts and rules to the greater context. The advanced beginner does, however, still need much guidance and supervision, as well as more time to relate classroom learning to clinical experience. Although second-year level students have developed a sense of autonomy, their functioning is still inadequate.

The teaching and assessment of the second-year students in this study was heavily based on traditional educational approaches. Approaches of competency-based education were only partially implemented, for example, problem-solving activities, class presentations and the

assessment of a practice portfolio. Most of the teaching and learning strategies in use were still more content-based and teacher-centred, rather than being performance-driven and learner-centred. Examples of methods in use were lecture methods and the utilisation of textbooks and study manuals. Lecturers were mostly the providers of learning and the givers of information, and learners were not fully given the responsibility for finding and interpreting information for themselves. This could be attributed to the fact that lecturers had to teach classes that were large in size. According to Piercey (1995), traditional curricula that are more focused on content, may be easy to administer and control, but lack in preparing learners to practice competently at the beginning level of their chosen profession.

Clinical and academic performance is also dependent on the rewarding of marks or credits, which may result in students who strive towards excellence through marks, instead of mastering specific competencies. As mentioned earlier, students were assessed clinically by means of a practice portfolio which served as a collection of evidence of outcomes that were attained. However, portfolios were more aimed at scoring performance rather than upgrading and improving weaknesses through continuous feedback and reflective practice. This could result in serious gaps between theory and practice. If portfolio assessment is used adequately, it can help to overcome the bridge between theory and practice and will give students the opportunity to prove, with evidence, how they have attained the required outcomes, how the experience has added to their personal and professional development (whether through patient, supervisor or tutor feedback), and to decide whether they still require further learning when reflecting on their experiences (Spence & El-Ansari 2004: 389; McMullan et al. 2002: 291-292).

Assessment of the clinical practice of second-year students is also based on the use of one instrument only, a rating scale, through direct observation. Performance is therefore graded by means of a score. When

one single instrument is used, its validity and reliability is questioned. It was found that students obtained abnormally high scores, such as 90% for a clinical assessment such as the administration of medication, when the student still lacked the ability to solve calculation problems. This implied that instruments lacked validity in that they were more focused on measuring psychomotor skills, instead of capturing all three domains – knowledge, skill and attitude.

Neary (2001: 15-16) studied the problems and concerns that students and assessors had with regard to the assessment of their nursing practice and clinical competence, and found that one single assessment procedure, such as direct observation, lacked in validity and reliability and was questioned in relation to assessor subjectivity. Neary (2000: 16) proposes that clinical assessment should rather be aimed at self-directed learning methods, such as learning contracts and contract assignments, as these will foster a more supportive and guided system for both students and assessors. It is clear from the above how traditional methods of teaching and assessment could result in an inability of students to acquire the specific skills, knowledge and attitudes necessary to fulfil future workplace roles.

5.2.3 Feelings of competence in third-year students

As noted earlier, this study found that only third-year students felt more feelings of competence as they progressed in their training. Results from third-year scores reflected that, although in need of more experiences, students felt fairly confident in clinical and academic competence. Benner (1984) postulates that, even though students at this level may be competent, they still lack adequate experiences to holistically cope and manage situations in which they should decide which aspects are most important. Their increased levels of responsibility cause them to realise

that peers and co-workers are fallible and can make mistakes, which may result in their trusting the performance of their peers less.

Heslop, McIntyre and Ives (2001: 631-633) found that third-year nursing students felt prepared to make the transition to a graduate year programme with regard to factors such as skill level, clinical experience and time management, but felt unprepared with regard to caring for five or more patients at once or patients who had complicated diagnoses. This is consistent with the fact that, although students have higher feelings of competence with increased levels of training, the lack of clinical experience, in particular, may still cause students to feel anxious that they will not meet expectations to perform competently in the workplace.

At third-year level, students in the study were more exposed to clinical experiences than to the academic setting. As in the second year of training, students at this level were also subjected to more traditionally based teaching and assessment methods. According to the researcher, the fact that they were more exposed to clinical situations could significantly have contributed to their higher levels of competence. These students therefore had greater access to opportunities of skills development in the clinical setting, where experiential learning was indirectly applied, because they could relate previous experiences to new learning, which would foster the development of understanding. Dunphy and Williamson (2004: 111) indicate that the competent student can handle more complex situations, perform well in familiar situations and anticipate the normal progression of events. Nicklin et al. (2000: 20) point out that any experience produces participation or active involvement in all three domains of the learning process – that is knowledge, skills and attitudes – and results in holistic learning and an ability to integrate theory into practice.

5.2.4 Feelings of competence in fourth-year students

Students in the fourth year of training showed no progression in competence as the year level increased. This occurrence was perhaps more acceptable for a student as an advanced beginner, due to limited previous experiences, but not at a fourth-year level of training. Fourth-year students, like the students at third year, had more clinical experience and were therefore expected to have shown higher levels of competence.

At a proficient level, due to previous experience, students are expected to be able to make the right judgments and make critical connections between theory and practice (Benner, 1984). Proficient students have the ability to see what is most important in given situations, and have improved decision-making abilities. Because of their additional experiences, students at fourth-year level should have the ability to read given situations and quickly respond accordingly.

However, the findings of the study revealed that this was not the case. At fourth-year level, students were expected to start making the transition from their roles as university students to the roles they would fulfil in the workplace. The study done by Morolong and Chabeli (2005: 38) to evaluate the competence of newly qualified registered nurses concluded that the nurses were not competent. The registered nurses were fairly competent in assessment skills, but lacked the knowledge and skills of the nursing diagnosis – thus critical thinking skills – and lacked in their approach to provide quality nursing care. May et al. (1999: 110) also point out that only until nursing students become practising registered nurses, will critical thinking evolve more significantly with clinical competence. This study found that there were no statistically significant relationship between critical thinking and clinical competence in senior nursing students. The study done by Del Bueno (1990) revealed that after completion of an educational programme, new graduates took at least eight months of

experience in the clinical field to practise confidently and competently. The results of this particular study stressed the importance of educators assessing competencies before assigning nursing students to practice settings or allowing them to advance to the next level in the programme.

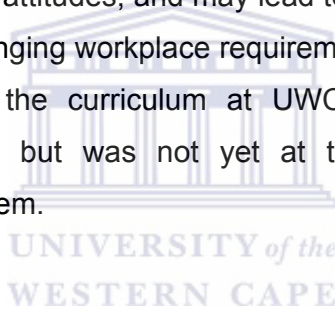
This brings the current study back to the question of how much traditional methods of teaching and assessment – which was central to these students' current curriculum – prepare learners to adequately fulfil workplace requirements. Due to curriculum arrangements, these students are in the clinical and academic settings for only blocks of time. During these blocks, assessment is more content- than performance-driven. This implies a purely traditional practice in that the quality and extent of learning are evaluated per practice or class session, and the achievement of competencies is thus limited by time constraints.

Van der Horst and McDonald (1997) point out that competence will not necessarily be achieved during one class session or a seven-week academic term, and that learners should rather be provided with guided and un-judged learning periods until verification of competence is required (Lenburg, 1999). This will allow learners to learn at their own pace and in a self-directed way, and to be assessed on their performance continuously until performance has improved to the level of competency.

Specific concerns of the educational programme in discussion regarding teaching and assessment were identified from the above study. Problems in relation to specific assessment instruments used and teaching and learning strategies embarked on clearly indicated their effect on the development and progression of students' competence. Measuring competency standards through the use of a single tool alone is not a measurement of competence at all, because one tool cannot assess everything. Assessment should become the driving force behind learning. Instead of assessment only being aimed at the scoring of marks or credits,

it should rather give students the feeling that they are working to increase their understanding and competence, which would eventually benefit the student, the teacher and the service sector, since it instils attributes of lifelong learning and development. Assessment methods should also be aimed at holistically measuring all domains of competence – knowledge, skills and attitudes.

Current teaching and learning strategies, which predominantly emphasise a teacher-centred approach, are more focused on the acquisition of content or knowledge, and can result in learners who are unable to apply acquired knowledge to practical situations. This can also result in an inability to attain the outcomes of the educational programme, namely knowledge, skills and attitudes, and may lead to graduates being unable to cope with rapidly changing workplace requirements. From all of the above, it was evident that the curriculum at UWC was moving away from traditional education, but was not yet at the point of a full-fledged outcomes-based system.



5.3 LIMITATIONS

5.3.1 Similarities and differences between competence and performance

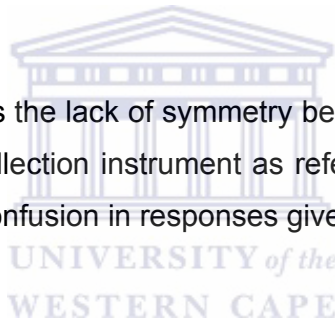
The concept of competence is a very wide aspect, and is often used interchangeably with the concept of performance. This study does not make a clear distinction between competence and performance, but has rather combined these two aspects. This may result in confusion, where competence may be seen as performance and vice versa. The researcher regards this as a limitation, because various literatures require that the two aspects be seen separately, even though they are so closely related to one another.

5.3.2 The data collection instrument

The instrument focused on academic and clinical competence, and presented questions that combined these two sides of competence. The researcher is of the opinion that more different responses might have been elicited if these two facets were broken up into separate parts. Responses received would therefore have specifically pointed to either clinical competence or academic competence.

The data collection instrument consisted of only close-ended questions. Different views might have been obtained from students on their actual feelings of competence if open-ended questions were also built into the questionnaire.

Another limitation was the lack of symmetry between “agree” and “strongly agree” in the data collection instrument as referred to in chapter 4, which might have caused confusion in responses given by participants.



5.3.3 Other variables influencing competence

As noted earlier, the notion of competence is immense and various aspects impact on it tremendously. Competence cannot be separated from the subcomponents such as the learning environment, resource material, teaching and learning strategies, to name but a few. These components were included in the study, but the researcher failed to adequately measure how these variables influenced the students' feelings of competency.

5.4 IMPLICATIONS

In this particular study, only students at third-year level showed progression in feelings of competence as their year of training increased, while students in the first-, second- and fourth-year levels did not have more feelings of competency as the year level increased. The results of the study also indicated that novice students' competence was not distinguishable from more experienced student nurses.

These findings indicate that curriculum for the undergraduate nursing programme at this specific school of nursing needs to be reviewed in how well it prepares students for competent practice during and after their training. This notion is congruent with the CIPP model (Stufflebeam & Webster, 1980), which postulates that the evaluation of an educational programme or curriculum is necessary to continuously identify its effectiveness and worth and implement the necessary improvement. This process of continuing evaluation will ultimately meet the needs of the learners.

The study done by Redman et al. (1999) on the review of an educational programme revealed that traditional educational interventions no longer sufficiently dealt with changes and challenges in education and the service sector. Especially graduates felt unprepared for entry-level competencies needed in the practice setting and were dissatisfied, because the educational programme were not fully learner-centred. As a result of this review, a competency outcomes and performance assessment approach was applied to all nursing programmes and was revealed as a positive experience by employers, staff and students.

Another implication for the curriculum may be that educators find it difficult to decide what is important enough to remain in the curriculum and what is not. Tanner (2001) criticised CBE-approaches in that they favour broader

outcomes more than they focus on specific subject content. This is problematic, since the aim of current educational approaches is to move away from content and focus specifically on what students will be able to do (outcomes) at the end of a training programme. The researcher is of the opinion that if programmes are more focused on content than on their outcomes, it may result in incongruence between exit-level competencies and the workplace roles qualified graduates are expected to fulfil. Outcomes of nursing programmes should therefore be developed and evaluated in such a way that it will help students, particularly senior students, to make the transition from student to professional practitioner.

The findings of the study will also have implications for the teaching and learning approaches used to facilitate competence. An important issue regarding this facilitation is the role of the clinical supervisor in the educational preparation of students. Landmark et al. (2003: 840) emphasise the importance of the role of the supervisor in helping students overcome the gap between theory and practice, and helping students develop competence and skill. Theoretical and practical competence is the broader outcome of the educational process, and the clinical supervisor is instrumental in finding this balance. Ramritu and Barnard (2001: 54) view the role of the clinical supervisor as equally important, since he or she is the expert provider of ongoing educational support and guidance, and should help students to implement safe nursing care.

5.5 RECOMMENDATIONS

5.5.1 Future research projects

5.5.1.1 Replication of the study

There is a need for more research to explore the link between nurse competence, nursing outcomes and quality of care. The same study could be replicated to reinforce its results. A future projection of the study could include more in-depth methodology, according to which questionnaires would include close-ended as well as open-ended questions, interviews and also focus groups. The researcher recommends the inclusion of these research methods, due to the limitations encountered through the administration of a close-ended questionnaire only.

5.5.1.2 Focus on various aspects comprising competence

Competence encompasses a broad aspect, with many components of the educational process that impact on it. Factors such as the learning environment, teaching and learning strategies, clinical practice and academic performance are all influential on the outcome of competence. The researcher recommends that the above-mentioned factors be fully explored and included individually in a future study, since specific data regarding each of those components would yield more conclusive results on the role they play in competence development and progression.

5.5.2 Recommendations specific to the study

5.5.2.1 Implementation of learner-centred teaching and learning strategies that will cultivate student competence

The researcher strongly recommends that more studies should be done in the School of Nursing to explore teaching and learning approaches that will fully maximise the clinical and theoretical competencies of students. Hoke and Robbins (2005:349) point out the barriers of teacher-centred approaches (such as the lecture method), which are often too dense and covered in too limited time frames to facilitate active learning, and conclude that active learning strategies (such as small-group work, class presentations and case studies) are useful in teaching critical thinking skills and the application of classroom-acquired knowledge in the clinical setting.

Another teaching strategy the researcher recommends to be implemented more thoroughly is self-directed learning, which is a developmental process that will help students make the transition from a teacher-centred to a learner-centred approach to learning. If first-year students experienced higher levels of competence because of active learning and learner-centred methods, such as the case-based approach being applied, then surely these types of approaches would also prove valuable to other year levels. The researcher therefore strongly recommends that this approach be applied to all year levels of the educational programme.

5.5.2.2 Clinical experiences of students should adequately meet learning objectives

The development of nursing competence requires practice in the clinical environment. However, it is difficult to ensure that all students obtain clinical experiences. Clinical teaching should therefore allow students

enough exposure to the most real-life clinical experiences possible. Simulation is one such method, but may be cost-prohibitive and time-consuming when teaching large numbers of students. Students placed directly in health services may also not get enough exposure to clinical scenarios, due to the fact that an increase in the number of students puts more pressure on the wards, so that the practising of specific learning opportunities are not always available to all students. The researcher therefore recommends that the importance of the role of the clinical supervisor be reviewed with regard to supporting and guiding students in the clinical field, and helping them to apply classroom knowledge to the practical setting. Landmark et al. (2003: 840) support this in emphasising how competent clinical supervisors are able to help students overcome the theory-practice gap and build the link between these two facets of learning.

5.5.2.3 *Reviewing the purpose of assessing students*

Assessment should not just identify weaknesses, but should rather enhance growth in competence. The focus of assessment should move away from just scoring competence, and rather emphasise the development and evolvment of professional skills. Watson et al. (2002: 423) postulate that assessment methods and measurements are rarely tested for reliability and validity, and the issue always remains what level of performance implies competence and at what level a student can be deemed incompetent.

Measuring instruments cannot capture all the necessary skills; that is, one criterion alone does not point to one thing only, but involves a lot more embedded knowledge and application. For these reasons, it is recommended that too much focus should not be placed on one instrument only, but that students instead take ownership of their own learning and should know where they are heading. Portfolios are one such

method students can use to prove, through reflection on action, in which ways they have upgraded and improved their weaknesses until they have progressed to the level of competence.

5.5.2.4 More collaboration between the schools of nursing and service sectors

Sound collaboration is needed between the different stakeholders in order to guide and direct students in reaching learning objectives. Congruence between higher education and the service sector regarding educational outcomes is important, so that the needs of the industry, profession and the community may be synchronised (Conway et al. 1999). It will also allow students access to clinical opportunities which will facilitate the development of skills required in the workplace.

The review of clinical placements where learners are allocated is also necessary and should offer available and accessible resources required to foster learning and competence development. Experiences in the clinical area can also help enhance experiential learning due to learning occurring through experience. Schools of nursing should therefore be in agreement with what students ought to learn and which type of experiences will facilitate this, so that students will be able to link learning experiences with professional competencies.

5.5.2.5 In-service education for staff

The researcher also recommends the in-service training of teaching staff on various teaching approaches that will stimulate critical thinking and reflective learning in students. This is strongly recommended, since it will help to improve the level of competence in nursing curricula.

5.6 CONCLUSION

The findings of the study revealed that, overall, students did not progress in competence as they move higher up the educational ladder. First-years or novice students scored higher on feelings of competency than students of all the other year levels in most of the sections, which could be attributed to the fact that a lack of expertise and limited clinical experiences may cause them not to perceive nursing as a difficult profession.

No progression in competence was indicated at second-year and fourth-year levels. This was more unacceptable from students in the fourth year, who would have had enough previous experiences to make the critical connections between theory and practice, and whose behaviour should have been guided by previous experiences. At fourth-year level, students are also expected to start making the transition from student nurse to professional nurse. If this critical role shift is not fulfilled, it may cause newly qualified registered nurses to lack competence in delivering quality care to patients.

The highest responses indicating that progression in competence occurred as year level increased were among third-year students. These results indicated that even though students were in need of more experience, they felt fairly competent in clinical and academic aspects.

The findings of other research studies also found that competence continuously develops and is ever-evolving. These findings leave educators of nursing students to revisit and review the curriculum, as well as teaching and assessment methods that will facilitate active learning and the development of competence both in the classroom and in the clinical setting. The challenge therefore still remains that more learner-centred approaches should be implemented, so that students will take ownership

and responsibility for their own learning, especially when the question comes to mind on how to find the balance between teaching large student numbers and producing nurses who will deliver quality nursing care.



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