

**FACTORS THAT AFFECT THEORY-PRACTICE INTEGRATION
OF STUDENT NURSES AT A SELECTED CAMPUS OF A
NURSING COLLEGE IN THE LIMPOPO PROVINCE**

by

MS SUYEKIYE JEANNETH NXUMALO

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**SUPERVISOR: PROF SP HATTINGH
JOINT SUPERVISOR: MRS JE TJALLINKS**

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Student number: 7655819

I declare that the **FACTORS THAT AFFECT THEORY-PRACTICE INTEGRATION OF STUDENT NURSES AT A SELECTED CAMPUS OF A NURSING COLLEGE IN THE LIMPOPO PROVINCE** is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references and that this work has not been submitted before for other degree at any other institution.

.....

SJ NXUMALO

.....

DATE

**FACTORS THAT AFFECT THEORY-PRACTICE INTEGRATION OF STUDENT
NURSES AT A SELECTED CAMPUS OF A NURSING COLLEGE IN THE LIMPOPO
PROVINCE**

STUDENT NUMBER: 765-581-9
STUDENT: SUYEKIYE JEANNETH NXUMALO
DEGREE: MASTER OF ARTS IN HEALTH SCIENCES
DEPARTMENT: HEALTH STUDIES
SUPERVISOR: PROF SP HATTINGH
JOINT SUPERVISOR: MRS JE TJALLINKS

ABSTRACT

The overall purpose of this study was to explore and describe the factors that affect theory-practice integration of student nurses at a selected campus of a nursing college in the Limpopo Province. Quantitative, descriptive, explorative and cross-sectional designs were used to accomplish the objectives of the study. Data collection was done using structured questionnaires with a few open-ended questions. The respondents were student nurses (n=106) and nurse educators (n=9). The findings revealed that failure of biological and natural sciences subjects, the use of traditional teaching strategies, inadequate use of simulation laboratory, inadequate clinical supervision, a shortage of resources, nature of the assessment process, extent of interest in the subject (s) taught, inability to draw clinical experiences during theoretical teaching, overpopulation of student nurses in the clinical area, negative attitude of ward staff and differences between the simulated skills and the actual clinical procedures in the ward affect theory-practice integration.

KEY CONCEPTS

Theory; practice; integration; discrepancy; evaluation; four-year comprehensive programme; student nurse; nurse educator; nursing education; competent.

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Dedication

*I dedicate this study to my mother Jamiye Linah Nxumalo,
my children Nobantu Sandy and Dumisa Daryl*

AND

In the loving memory of my father Isaac Kheto Nxumalo

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CHAPTER 5

Conclusions, limitations and recommendations

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List of abbreviations

AEP	Ethos of nursing and professional practice
AEP	Ethos of nursing and professional practice
AGN	General nursing sciences
AGN	General nursing sciences
AHA	Human anatomy
AHA	Human anatomy
AHN	Community health nursing science
AHN	Community health nursing science
AMW	Midwifery nursing science
AMW	Midwifery nursing science
ANP	Comprehensive nursing science and midwifery practice
ANP	Comprehensive nursing science and midwifery practice
APC	Psychiatric nursing science
APC	Psychiatric nursing science
APY	Human physiology
APY	Human physiology
ASY	Social sciences
ASY	Social sciences
BNS	Biological and natural sciences
BNS 1 P 111	Paper 111 Biochemistry, Biophysics and microbiology
BNS 11	Physiology
BNS1 P 11	Paper 11 Physiology
BNS1 P1	Paper 1 Anatomy
CNS	Community nursing science
DENOSA	Democratic Nurses Organization of South Africa
E	Exemption
FNS	Fundamental nursing science
GNS	General nursing science
MID	Midwifery nursing science
OSCE	Objective Structured Clinical Examination
PHARM	Pharmacology
PNS	Psychiatric nursing science
RSA	Republic of South Africa
SANC	South African Nursing Council
SPSS	Statistical Package for Social Sciences
SSC	Social sciences

List of annexures

Annexure A Ethical clearance certificate from the University of South Africa

Annexure B Letter seeking consent from the Department of Health and Social Development: Limpopo Province

Annexure C Letter of approval: Department of Health and Social Development: Limpopo Province

Annexure D Informed consent to respondents

Annexure E Questionnaire for student nurses

Annexure F Questionnaire for nurse educators

CHAPTER 1

Orientation to the study

1.1 INTRODUCTION

The relationship between theory and clinical practice, both internationally and nationally, has always been a concern in nursing education. Numerous studies have pointed out the discrepancies between theory and practice (Ehrenberg & Häggblom 2007:68; Fealy 1999:75; Field 2004:562; Landmark, Hansen, Bjones & Bøhler 2003:835; Mabuda, Potgieter & Alberts 2008:23). The discrepancies between theory and clinical practice have been caused largely by the deficiencies in the practice of nursing itself or in the classroom (Gillespie & McFetridge 2006:642). Authors like Evans (2009:21) are of the opinion that the relocation of nursing education to university departments from schools of nursing contributed to the theory-practice gap. According to Ehrenberg and Häggblom (2007:68), student nurses and nurse educators view the clinical part of nursing procedures and routine work as having no connection with the theoretical aspects of the programme.

The theoretical and practical components of nursing as a profession form the basis of nursing education and require integration of theory and practice. The content covered in the classroom should relate to the experiences of the student nurses in the real clinical setting. Researchers such as Carlson, Kotze and Van Rooyen (2003:30), Gillespie and McFetridge (2006:642) and Jerlock, Falik and Severinsson (2003:220), however, indicate that there is a theory-practice gap between what the students learn in the classroom and their experiences in the real clinical setting and state that student nurses find it increasingly difficult to integrate theory with practice. Failure to integrate theory and practice is manifested by, for example, the outcomes of examinations, which show discrepancies between theoretical and clinical performance.

The purpose of nursing education is specifically the development of the student nurse as an adult on a personal and professional level. The objectives of the programme should be accomplished. Cognitive, affective and psychomotor development should be completed in the learning process (Morgan 2006:155). The development of analytical,

critically-evaluative and creative thinking skills are therefore of the utmost importance. Creative thinking skills will enable the student to become a competent professional nurse who can make independent clinical judgements in order to render optimal nursing care to patients that is safe and within his or her scope of practice (South African Nursing Council (SANC) 1992:5). The student nurses should be assisted to integrate theory and practice and if gaps are identified, efforts should be made to reduce them. According to Morgan (2006:159), the learning needs of student nurses and the level of care they provide to patients will be affected if the student nurses do not have the ability to link theory and practice. Jerlock et al (2003:221) further indicate that development of confidence and the ability to make independent decisions is hampered if student nurses are unable to see the connection between the two.

1.2 BACKGROUND TO THE RESEARCH PROBLEM

Quinn and Hughes (2007:341) and Kelly (2007:886) indicate that learning that occurs through experience in the real clinical setting is more meaningful than that acquired in the classroom setting. The idea has been emphasised and supported by Rolfe (1996:26), who believes that theory is implicit in clinical practice. Cooperation is therefore important between the nurse educators, clinical facilitators, preceptors and professional nurses working in the units or wards, in order to ensure that students get maximum clinical exposure during the learning process (Jerlock et al 2003:219).

1.2.1 Theory and practice integration

The nursing profession is a matter of both science and art, and training of student nurses relies on both theory and the clinical application of the knowledge in the real clinical setting. These assist student nurses to integrate the two and attain the learning outcomes (Bezuidenhout 2003:19). Although nurse educators are often challenged by their wide-ranging and dynamic roles involving administration and facilitation of learning, which include both teaching and clinical support as well as the pressure to conduct research, they have to assist the student nurses to link theory and practice and vice versa. According to Gillespie and McFetridge (2006:640), the students should not be left alone to draw the links themselves. The authors add that creating the link between theory and clinical practice is demanding and that nurse educators have to keep abreast of the latest development in clinical practice to ensure that the support they give to

students is grounded in both theory and clinical practice (Gillespie & McFetridge 2006:639).

1.2.2 Evaluation

Quinn and Hughes (2007:265) state that one of the roles of nurse educators is to evaluate theory and clinical practice. The authors add that student nurses see evaluation as the most important aspect of their learning and the main priority of their studies. Mellish and Wannenburg (1992:131) are of the opinion that the outcome of evaluation may take the form of a symbol or a mark. The mark obtained during formative evaluation provides a platform for feedback and progress in meeting the objectives of the programme. It also allows for evaluating the development of competencies for practice. Summative evaluation, on the other hand, serves as the tool to allow student nurses to be promoted to the next level of study or completion of the programme. This type of evaluation is final in nature (Oermann & Gaberson 2006:4).

Mellish and Wannenburg (1992:131) posit that evaluation is expected to be undertaken by all those involved in the education and training of student nurses. Competence and expertise in the relevant field by nurse educators are the criteria for evaluation in order for them to make proper judgements. This factor is often ignored in nursing education; competence to undertake evaluation in nursing education is seldom tested.

1.2.3 Clinical supervision

Clinical supervision is important in nursing education as it provides the opportunity for nurse educators to assist student nurses to apply theory in practice. A study conducted by Cele, Gumede and Kubheka (2002:42) into the functions and roles of nurse preceptors in the clinical areas revealed that 87.5% of the professional nurses working in the wards who participated in the study were unable to supervise student nurses due to their heavy workloads, and hence were not actively involved in the clinical teaching of student nurses. The expectation of the SANC (2005) is that nurse educators should spend at least 30 minutes per fortnight per student nurse in the clinical area in order to ensure integration of theory and clinical practice.

A study conducted by Waterson, Harms, Qupe, Maritz, Manning, Makobe and Chabeli (2006:70) into strategies to improve the performance of student nurses in a nursing college revealed that nurse educators could not cope with the increasing number of student nurses due to the merging of nursing colleges. It can be assumed that nurse educators have limited time for student accompaniment.

These are also the findings of the study by Lekhuleni, Van Der Wal and Ehlers (2004:23) into the perceptions of student nurses regarding their clinical accompaniment in the Limpopo province; student nurses indicated that the nurse educators were sometimes not available when needed for enquiries or clarification of theory or practice. In addition Bezuidenhout (2003:19), Davhana-Maselesele (2000:126) and Mabuda et al (2008:23) imply that supervision of student nurses by professional nurses or nurse educators in the clinical setting is not adequate to ensure integration of the theoretical and clinical components of nursing science.

1.3 PROBLEM STATEMENT

Findings by various researchers have revealed that there is a lack of proper integration of theory and clinical practice, student accompaniment and clinical supervision (Bezuidenhout 2003:19; Davhana-Masesesele 2000:126; Jerlock et al 2005:219; Lekhuleni et al 2004:22; Mabuda et al 2008:19; Waterson et al 2006:70). In spite of the cited problems in the clinical setting, it is not clear why the student nurses' overall performance in the clinical practice examinations remains average to above average, compared with under-performance in the theoretical component of the programme.

The researcher has been a nurse educator for the past 15 years and is currently a professional officer in the statutory Nursing Council, where one of the key performance areas between February 2008 and January 2009 was to process the terminations and completion records for student nurses who had undergone the four-year comprehensive programme leading to registration as a nurse (general, psychiatric and community) and midwife. The researcher has observed with concern that there is a general trend in the majority of nursing education institutions offering the four-year comprehensive programme for student nurses to obtain above-average marks in clinical practice, compared with average and below-average marks in theory. If the marks obtained predict achievement or competency in clinical practice, it becomes a concern.

Research findings by Ntombela, Mzimela, Mhlongo and Mashaba (1996:17) into the clinical performances of student nurses who completed the four-year comprehensive programme, as viewed by the professional nurses who followed the old regulations revealed that their performance was “somewhat poor”.

These findings were also confirmed by Morolong and Chabeli (2005:44) who revealed that newly completed registered nurses from the nursing college who have undergone the four-year comprehensive programme were not competent in applying their clinical knowledge and skills to practice. The researcher has also observed that 100% of the student nurses who terminated their training before completing it because of poor academic progress had obtained below-average marks in theory as compared with average to above average marks in practice (SANC 2007).

In tables 1.1 and 1.2, examples are given of two students` marks to support the concern of the researcher and to clarify the statements made.

Table 1.1 Discrepancies between theory and clinical examination marks in nursing college X

THEORY				
1	1 ST YEAR (%)	2 ND YEAR (%)	3 RD YEAR (%)	4 TH YEAR (%)
	BNS 1 (P1 & P11)=E	BNS 11=55	CNS= 52	GNS=59
	BNS 1 (P111)=E	PHARM=75	GNS=65	MID=54
	FNS=E	CNS=67	MID=61	PNS=39
	SSC=E	GNS=69	PNS=54	RESEARCH=74
		SSC=77		
PRACTICA				
	FNS=E	CNS=81	CNS=76	GNS=79
		GNS=73	GNS=82 MID=76 PNS=63	MID=90 PNS=79
THEORY				
2	BNS 1 (P1 & P11)=52	BNS 11=51	CNS=53	GNS=51
	BNS 1 (P111)=57	CNS=56	GNS=56	MID=64
	FNS=59	GNS=52	MID=56	PNS=37
	SSC=51	PHARM=62	PNS=50	
		SSC=57		
PRACTICA				
	FNS=61	CNS=68	CNS=81	GNS=79
		GNS=64	GNS=61	MID=64
			MID=72	PNS=69
			PNS=72	

(SANC 2007)

Key:

BNS	=	Biological and natural sciences
BNS1 P1	=	Paper 1 Anatomy
BNS1 P 11	=	Paper 11 Physiology
BNS 1 P 111	=	Paper 111 Biochemistry, Biophysics and microbiology
BNS 11	=	Physiology
FNS	=	Fundamental nursing science
SSC	=	Social sciences
PHARM	=	Pharmacology
GNS	=	General nursing science
CNS	=	Community nursing science
MID	=	Midwifery nursing science
PNS	=	Psychiatric nursing science
E	=	Exemption

Table 1.1 provides the marks obtained by two student nurses who were randomly selected at nursing college X who terminated their training before completing the required four-year comprehensive programme. The marks indicate their performances in first, second, third and fourth year of study in the four-year comprehensive programme for both theory and practice. From the table it can be seen that from first, second, third and fourth level there is a discrepancy between the theory and clinical marks obtained by the two students in all the major subjects: general nursing science

(GNS), community nursing science (CNS), psychiatric nursing science (PNS) and midwifery nursing science (MID) (see marks in bold).

Table 1.2 Discrepancies between theory and clinical examination marks in a nursing college Y

THEORY				
1	1 ST YEAR (%)	2 ND YEAR (%)	3 RD YEAR (%)	4 TH YEAR (%)
	AGN= 82	AGN II= 73	AGN III- 70	AGN IV= 75
	AHA = 75	AHN II= 56	AHN III= 64	AHN IV= 67
	AHN I= 73	APY= 71	ASY 213= 67	AEP 023= 72
	ASY 023= 73	ASY II= 72	AMW 1= 53	AMW II= 70
	AEP 013= 72		APC I= 68	APC II= 64
PRACTICA				
	ANP I= 97	ANP II= 95	ANP III= 85	ANP IV= 86
THEORY				
2	AGN= 66	AGN II= 71	AGN III- 50	AGN IV= 62
	AHA = 59	AHN II= 58	AHN III= 56	AHN IV= 54
	AHN I= 50	APY= 56	ASY 213= 59	AEP 023= 53
	ASY 023= 59	ASY II= 54	AMW 1= 52	AMW II= 57
	AEP 013= 56		APC I= 60	APC II= 62
PRACTICA				
	ANP I= 79	ANP II= 89	ANP III= 84	ANP IV= 89

(SANC 2008)

Key:

- AGN = General nursing sciences
- AHN = Community health nursing science
- APC = Psychiatric nursing science
- ASY = Social sciences
- AEP = Ethos of nursing and professional practice
- ANP = Comprehensive nursing science and midwifery practice
- AMW = Midwifery nursing science
- AHA = Human anatomy
- APY = Human physiology

Table 1.2 provides a summary of the marks obtained by two student nurses who were randomly selected from nursing college Y who have completed the four-year comprehensive programme. The marks of the two students indicate that both from first to fourth year obtained 79% and above (above average) in clinical practice, as compared with theory, where the marks are much lower (50%).

The extreme discrepancy between theory and clinical practice indicated in the examples given in tables 1.1 and 1.2, ranging from 25% and above, raises concerns about theory-practice integration in nurse education and training. Both tables 1.1 and 1.2 indicate that the problem is not confined to a particular institution but is rather a general trend. It is for this reason that the researcher was motivated to conduct this study in order to explore and describe the factors that affect theory-practice integration of student nurses at a selected campus of a nursing college in the Limpopo province.

In an effort to clarify these challenges and propose possible solutions to enhance theory-practice integration, the researcher explored and described the factors that affect theory-practice integration of student nurses at a selected campus of a nursing college in the Limpopo province of South Africa.

In view of the above problem statement referring to the current situation where there are challenges regarding theory-practice integration, as evidenced by the discrepancies between theory and clinical examination marks, the following research questions formed the basis of this research:

- What are the factors that affect theory-practice integration as viewed by the student nurses at a selected campus of a nursing college in the Limpopo province?
- What are the factors that affect theory-practice integration as viewed by the nurse educators at a selected campus of a nursing college in the Limpopo province?

1.4 PURPOSE AND OBJECTIVES OF THE STUDY

The section below sets out the purpose and objectives of this study.

1.4.1 Research purpose

The overall purpose of this study was to explore and describe the factors that affect theory-practice integration of student nurses at a selected campus of a nursing college in the Limpopo province. Based on these identified factors, recommendations would be made to enhance theory-practice integration of student nurses.

1.4.2 Research objectives

Given the purpose of this research, the objectives were to:

- Explore and describe the factors that affect theory-practice integration as viewed by the student nurses at a selected campus of a nursing college in the Limpopo province.
- Explore and describe the factors that affect theory-practice integration as viewed by the nurse educators at a selected campus of a nursing college in the Limpopo province.

1.5 FRAME OF REFERENCE

This study is based on Kolb's Experiential Learning Model. In the section below a summary of the theoretical framework is given, and chapter 2 gives a detailed discussion of Kolb's Experiential Learning Model and its application in nursing education.

1.5.1 Theoretical framework

The concept *theoretical framework* is described as an "explanation which is based on propositional statements resulting from an existing theory which seeks to create a specific way at looking at particular phenomenon" (Wood & Ross-Kerr 2006:51). Kolb's Experiential Learning Model focuses on the process by which knowledge is created through transformation of experience (Knowles, Holton & Swanson 2005:197; Kolb 1984:38). Kolb's Experiential Learning Model is described as a four-step cycle involving four adaptive learning modes; concrete experience serves as the basis for observation and reflection, and reflection leads to the formation of concepts that can be tested through further concrete experience (Ethridge & Branscomb 2009:401). According to Kolb (1984:65), the four adaptive learning modes create four distinct learning styles, *convergent, divergent, assimilation and accommodation*.

Kolb's Experiential Learning Model (Kolb 1984:65) offers structure to reflection on practice. The person engaging in practice can enter experiential learning at any point, but must follow the sequence in order for learning to take place (De Jong 2006:153).

Kolb's Experiential Learning Model emphasises how theory is influenced by clinical practice and vice versa in the process of learning or development. The focus of nursing education lies in both theory and clinical practice, hence the researcher regarded this model as appropriate for this study because the focus of this study is based on the factors that affect theory-practice integration.

1.5.2 Assumptions

Assumptions are "basic principles that are believed to be true without proof or verification" (Polit & Beck 2008:14). In addition, Mouton (1996:123) states that *assumptions* "function as background beliefs that underlie other decisions in the research process". This is consistent with the views of Fox and Bayat (2007:140) and Burns and Grove (2003:474), who state that assumptions is something that is regarded as correct without verifying the underlying factors. This statement is supported by Hofstee (2006:88). The following assumptions were made by the researcher:

1.5.2.1 Ontological assumptions

The *Oxford Advanced Learners Dictionary for Current English* (2000:228) defines the term *ontology* as "a branch of philosophy that deals with the nature of existence".

- The student nurses and nurse educators at a selected campus of a nursing college in the Limpopo province are aware of the factors that affect theory-practice integration of student nurses.

1.5.2.2 Theoretical-conceptual assumptions

According to Chinn and Kramer (2008:293), *theoretic assumptions* "may be value statement or have potential for empirical testing but are assumed true within the theory because they are reasonable". The assumptions below are based on Kolb's Experiential Learning Model.

- Learning occurs through transformation of experience.
- Theory and clinical practice should be integrated in order for learning to occur.

- Student nurses are human beings and unique, therefore have different learning styles.

1.5.2.3 Methodological assumptions

Methodological assumptions refer to the relevant methods that are used in the research process (Mouton 1996:124). In this study it was assumed that:

- The factors that affect theory-practice integration as viewed by both student nurses and nurse educators at a selected campus of a nursing college in the Limpopo province were best understood by using the quantitative, explorative, descriptive and cross-sectional study design.
- Questionnaires were the preferred relevant method to gather numerical data in this study.
- The probability stratified random sampling used for student nurses and non-probability convenience sampling method used for nurse educators assisted the researcher to include student nurses and nurse educators who met the inclusion criteria. The respondents were able to identify factors that affect theory-practice integration at a selected campus of a nursing college in the Limpopo province.

1.6 DEFINITION OF KEY CONCEPTS

A single construct can have different meanings for different people (Neuman 2006:182), therefore for the purpose of this study, the following terms were clarified pertaining to the factors that affect theory-practice integration of student nurses at a selected campus of a nursing college in the Limpopo province.

1.6.1 Discrepancy

Discrepancy refers to inconsistency between two facts that are supposed to be the same. For the purposes of this study, *discrepancy* means an extreme of difference, in the range of 25% and above, between the marks obtained by the student nurses for the theoretical and clinical examination marks at a selected campus of a nursing college in the Limpopo province.

1.6.2 Theory

Polit and Beck (2008:139) refer to *theory* as the “content covered in the classroom, as opposed to the actual practice of performing nursing activities”.

For the purposes of this study, the term *theory* refers to theoretically related content pertaining to the four-year comprehensive programme of nursing as prescribed by the SANC (1985:1). The content is covered in the classroom setting using various teaching strategies which equip the student nurses at a selected campus of a nursing college in the Limpopo province with the skills for clinical application.

1.6.3 Practice

The *Concise Oxford English Dictionary* (2006:1126) defines *practice* as an “activity or exercise repeatedly or regularly repeated in order to acquire, maintain or improve proficiency in it”.

For the purpose of this study *practice* means skills that are acquired in the real clinical setting that enable student nurses in nursing to develop methods and techniques of rendering optimal nursing care to patients in the clinical settings in which the student nurses are placed (Jerlock et al 2003:224). The aspects to be covered are also described by the SANC (1985:1). In this study, the concept of practice will be used interchangeably with clinical practice.

1.6.4 Evaluation

Evaluation is defined by Oermann and Gaberson (2009:9) as “a process of making judgements about student learning and achievement, clinical performance, employee competence and educational programs based on assessment data”.

For the purposes of this study, the concept *evaluation* means judging the student’s attainment of educational objectives and goals in the classroom and the student nurses’ performance in the clinical setting. The concept will be used interchangeably with assessment. Evaluation in nursing education is also regarded as fulfilling two major roles in the classroom and clinical setting: formative and summative.

1.6.4.1 Formative evaluation

Oermann and Gaberson (2006:4) describe *formative evaluation* as “that type of evaluation which provides for feedback to students about their level of performance in both theory and practice”.

For the purposes of this study, *formative evaluation* refers to any type of evaluation that is used continuously through the academic year for both theory and clinical practice and is used to assess the student nurse’s level of development and yields a year mark towards entry into the final or summative evaluation.

1.6.4.2 Summative evaluation

Oermann and Gaberson (2006:5) describe *summative evaluation* as the evaluation that is done at the end of the learning process and is aimed at establishing whether a student has acquired the learning outcomes for a particular programme.

For the purposes of this study, *summative evaluation* means all types of evaluation that when added together yield a pass or fail final mark which is given at the end of the academic year for student nurses at a selected campus of a nursing college in the Limpopo province. This final mark determines whether the student nurse can be promoted to the next level of study or completion of the four-year comprehensive programme, leading to registration with SANC as a nurse (general, psychiatric and community) and midwife.

1.6.5 Mark

A *mark* is defined as “the form of measurement where the number or a numerical value is attached to the outcome of evaluation” (Mellish & Wannenburg 1992:131). Marks are based on preset criteria.

For the purposes of this study the concept of *mark* refers to the outcome of evaluation, both formative and summative, in theory and clinical practice where a numerical value is attached and expressed in percentages attained by the student nurses at a selected

campus of a nursing college in the Limpopo province. The concept *mark* was further classified into three categories.

In this study, an *above-average mark* is any mark between 75 and 100%, equivalent to pass with distinction, or pass in the case of the supplementary examination, while an *average mark* is regarded as any mark between 50 and 74% and equivalent to pass. A *below-average mark* is any mark less than 50% and equivalent to failing in the supplementary examination, or any mark between 0 and 44% equivalent to failing in the standard examination. A mark between 45% and 49% is regarded as equivalent to qualifying for a supplementary examination in the standard examination.

1.6.6 Student

The *Concise Oxford English Dictionary* (2006:1431) defines a *student* as “a person studying at a university or other place of higher education”.

In this study the term *student* refers to any person who is currently enrolled on a full-time basis at a selected campus of a nursing college in the Limpopo province and undergoing the four-year comprehensive programme leading to registration as a nurse (general psychiatric and community) and midwife. The concept will be used interchangeably with student nurse.

1.6.7 Nurse educator

Nurse

According to the *Oxford Advanced Learners Dictionary for current English* (2000:801) a *nurse* is defined as “a person whose job is to take care of sick or injured people, usually in hospital”. An *educator* according to the *Concise Oxford English Dictionary* (2006:455) is “a person who gives intellectual, moral and social instruction or trains or gives information on a particular subject”.

For the purposes of this study, the concept “*nurse educator*” refers to all registered nurses currently employed at a selected campus of a nursing college in the Limpopo

province with an additional qualification as a nurse tutor according to the SANC register and who is employed for facilitation of learning.

1.6.8 Competent

Quinn and Hughes (2007:297) define *competence* as “the possession and the development of sufficient skills, knowledge, appropriate attitudes and experience for sufficient performance in life roles”.

For the purposes of this study it refers to the student nurses enrolled for the four-year comprehensive programme at a selected campus of a nursing college in the Limpopo province with the ability to perform according to a defined standard within a specific context due to internalised knowledge, skills and values.

1.6.9 Nursing education

Mellish, Brink and Paton (1998:7) describe *nursing education* as “the process where the student nurses are guided and provided with means which enable them to learn the art and science of nursing so that they can apply it to the nursing care of people who need such care”.

For the purposes of this study *nursing education* refers to teaching and evaluation of both theory and clinical practice, formative and summative, at a selected campus of a nursing college in the Limpopo province.

1.6.10 Four-year comprehensive programme

Comprehensive is defined in the *Concise Oxford English Dictionary* (2006:294) as “including or dealing with all or nearly all aspects of something”. The term *programme* is “a planned series of events or a set of related measures or activities with a long-term aim” (*Concise Oxford English Dictionary* 2006:1147).

In this study, the four-year comprehensive programme is a programme comprising of four major subjects, namely general, psychiatric, community and midwifery nursing

sciences, which on completion allows for registration with SANC as a nurse (general, psychiatric and community) and midwife.

1.6.11 Integrate

The *Concise Oxford English Dictionary* (2006:738) defines to *integrate* as to “combine or be combined to form a whole”. In this study integration refers to the ability of student nurses as defined to be able to apply theoretical content to practice and vice versa in the provision of comprehensive patient care.

1.7 RESEARCH METHODOLOGY

The selection of a research methodology, according to Parahoo (2006:183), is the core of a research design and must include the research design, definition and selection of the population of interest, variables (characteristics of the individuals in this population), their status and the relationships to one another, the instruments for data collection and the procedure for data collection. A brief overview of the research design and methods utilised in this study is summarised. Chapter 3 contains a more extensive discussion on the research methodology.

1.7.1 Research design

A *research design*, according to Polit and Beck (2008:765), is the overall plan for addressing a research question so that the integrity of the study is enhanced. A research design further guides the researchers, to plan and implement a study so as to achieve the set goals and is the structure within which the study is implemented (Burns & Grove 2001:223). In this study, a quantitative, explorative, descriptive and cross-sectional design was used to explore and describe the factors that affect theory-practice integration of student nurses at a selected campus of a nursing college in the Limpopo province.

1.7.1.1 Quantitative research design

Burns and Grove (2001:26) describe *quantitative research* as a “formal, objective, systematic process in which numerical data is used to obtain information about the

world” in which logic systematic steps are adhered to. The purpose of quantitative research is to describe new situations (Burns & Grove 2001:30).

1.7.1.2 Explorative research design

Exploratory research is described as a study which seeks to “explore the nature of the phenomenon, the manner in which it is manifested and its underlying processes” (Polit & Beck 2008:20).The researcher explored the factors which affect theory-practice integration of student nurses at a selected campus of a nursing college in the Limpopo province.

1.7.1.3 Descriptive research design

The main objective of descriptive research is to “accurately portray the characteristics of persons, situations, groups and/or the frequency with which certain phenomena occur” (Polit & Beck 2008:752). This study explored, described and documented aspects that affect theory-practice integration of student nurses at selected campus of a nursing college in the Limpopo province.

1.7.1.4 Cross-sectional design

The time sequence for this study was cross sectional because the researcher simultaneously collected data from both the student nurses and the nurse educators about the factors that affect theory-practice integration of student nurses at a selected campus of a nursing college in the Limpopo province (Brink, Van Der Walt & Van Rensburg 2006:10; Wood & Ross-Kerr 2006:117).

1.7.2 Methodology

According to Burns and Grove (2001:223), the research method serves as a rationale for research as well as criteria used for interpreting data.

1.7.2.1 Population

According to Polit and Beck (2008:67), *population* is described as “all individuals or objects with common, defining characteristics in which the researcher is interested”. Wood and Ross-Kerr (2006:149) further define *population* as “everyone in the world who meets the criteria for the people you are interested in studying”.

The population in this study consisted of two groups, namely 308 student nurses enrolled for the four-year comprehensive programme at a selected nursing campus of a nursing college in the Limpopo province and 22 nurse educators responsible for facilitation of learning.

1.7.2.2 Sample

According to Polit and Beck (2008:765), a *sample* is a “subset of population selected to participate in a study”. In this study the sample included 220 of second, third and fourth year student nurses from a selected campus of a nursing college in the Limpopo province and 22 nurse educators responsible for facilitation of learning.

To be included in the study, the student nurses had to be:

- Enrolled at a selected campus of a nursing college in the Limpopo province
- In their second, third or fourth year level of study
- Willing to participate in the study

To be included in the study, the nurse educators had to be:

- Employed full time at a selected campus of a nursing college in the Limpopo province
- Responsible for the facilitation of learning
- Willing to participate in the study

1.7.2.3 Sampling and sampling procedure

According to Brink et al (2006:124), *sampling* refers to the process of selecting the sample that is representative of the population under study. The non- probability stratified random sampling method was used to explore and describe the factors that affect theory-practice integration of student nurses at a selected campus of a nursing college in the Limpopo province. The probability purposive sampling method was used for the nurse educators. The sampling procedure was only applied to student nurses and not for the nurse educators, due to their small number. Questionnaires were distributed to the student nurses and the nurse educators who met the inclusion criteria and also agreed to participate in the study. The detailed sampling procedure will be discussed under section 3.4.2.3.

1.7.2.4 Data collection

According to Parahoo (2006:467), *data collection* is the method used to collect information by researchers during the course of a study. In this study, data was gathered by means of questionnaires from student nurses who were enrolled at a selected campus of a nursing college in the Limpopo province and nurse educators who were responsible for facilitation of their learning.

The structure of the instrument for student nurses comprised the following sections:

Section A: Responses on demographic profile

Section B: Responses on educational background

Section C: Responses on theory-practice integration

Section D: Responses on learning preferences

Section E: Responses on assessment

The structure of the instrument for the nurse educators comprised the following sections:

Section A: Responses on demographic profile

Section B: Responses on theory

Section C: Responses on practice

Section D: Responses on assessment

The questionnaires for both student nurses and nurse educators were structured with 3 open-ended questions for students and 9 for nurse educators.

1.7.2.5 Data analysis

In this study, a statistician analysed the data using the Statistical Package for Social Sciences (SPSS) version 14.0) computer program. The analysis included descriptive statistics, cross-tabulation and logistic regression. The results were presented in frequencies, percentages, graphs and tables. See chapter 4 for a detailed presentation of the results.

1.8 PHASES OF THE RESEARCH

In this study the phases as described by Polit and Beck (2008:64) were followed namely, *conceptual, design and planning, empirical, analytic* and *dissemination* phases. The detailed discussion of these phases is presented in chapter 3, section 3.4.

1.9 ORIENTATION OF THE RESEARCH SETTING

The study was conducted at a selected campus of a nursing college in the Limpopo province of South Africa. The province is situated at the north-eastern corner of South Africa, and shares borders with Botswana, Zimbabwe and Mozambique. It forms the link between South Africa and countries further afield in sub-Saharan Africa. The Limpopo province occupies 11.3% of the country's land area, with an estimated population of 5.4 million (South Africa info 2008). Most spoken languages are: Sepedi, Xitsonga and Tshivenda. Limpopo province consists of five districts, namely, Capricorn, Mopani, Vhembe, Waterberg and Sekhukhune.

The college under study was formed by the amalgamation of the three nursing colleges which were located in two former homelands and one of the TBVC states, namely, Transkei, Bophuthatswana, Venda and Ciskei prior to 1994. The college has three satellite campuses, situated at Polokwane, Giyani (next to Tzaneen) and Thohoyandou. The study focused on one of the three campuses. (See figure 1.1 for the map of Limpopo province and orientation to the area in which the campuses are situated). The three satellite campuses offer the four-year comprehensive programme which leads to registration as a nurse (general, psychiatric and community) and midwife.

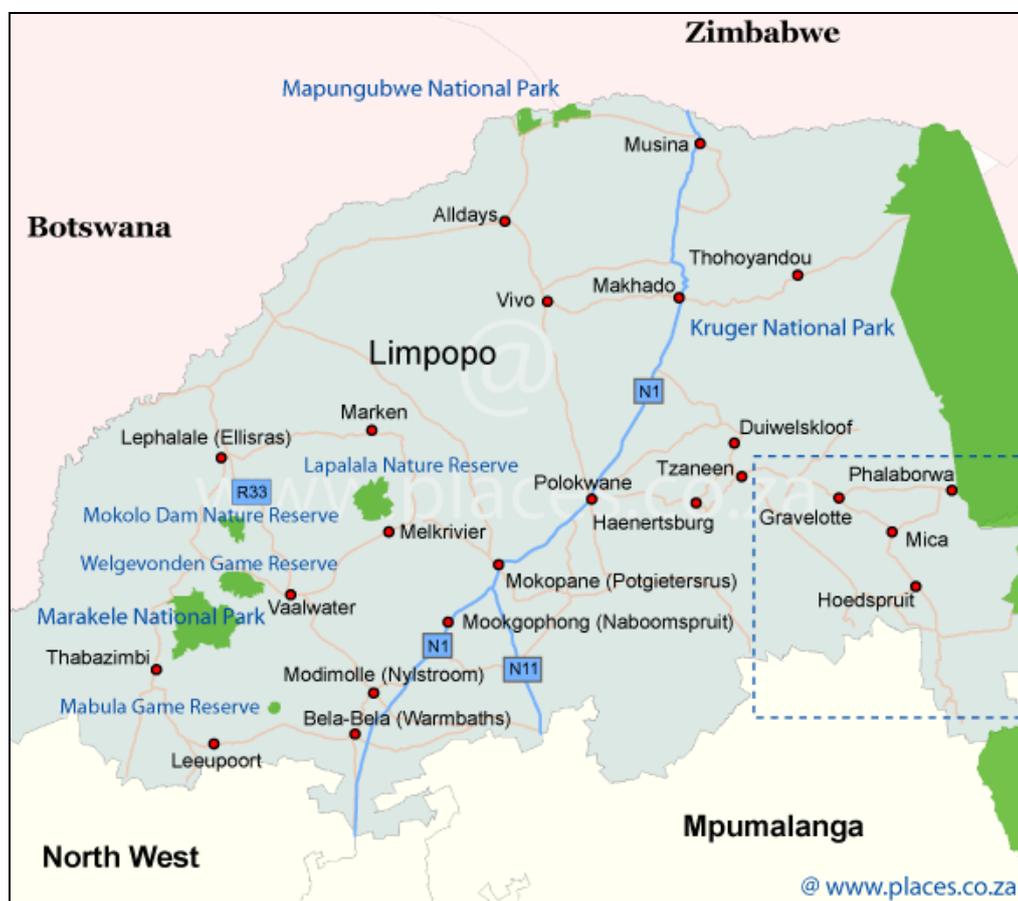


Figure 1.1 Map of Limpopo
(South Africa info 2008)

Figure 1.1 shows where Limpopo province is situated. It is evident that the catchment area for the nursing college in the Limpopo province is a vast area which covers the entire province.

1.10 VALIDITY AND RELIABILITY

1.10.1 Validity

According to Brink et al (2006:159), validity refers to the ability of the research instrument to accurately measure what it is intended for irrespective of the context in which it is applied. The supervisors and the statistician assisted the researcher in formulating the questionnaires. The researcher focused on the content validity, which refers to the accuracy with which an instrument measures the factors under study (De Vos, Strydom, Fouche & Delpont 2002:167). The research instrument was tested for face and content validity by giving the instrument to an independent expert and a statistician who also evaluated it for conceptual and investigative bias.

1.10.2 Reliability

Reliability of the data collection instrument refers to “the degree to which an instrument produces equivalent results for repeated trials” (Bless & Higson-Smith 2000:126). Accurate and careful phrasing of each question to avoid ambiguity and leading to particular answers ensured the reliability of the questionnaire. In this study a pre-testing of the instrument was conducted with five student nurses and two nurse educators who were not part of the survey who completed the questionnaire. The aim of pre-testing of the instrument was to identify inconsistencies and lack of clarity in the questions. The problems identified were with the phrasing of some questions and the problems were rectified.

1.11 SIGNIFICANCE OF THE STUDY

This study was regarded as significant as it attempted to uncover the factors that affect theory-practice integration of student nurses at a selected campus of a nursing college in the Limpopo province. Recommendations were made to enhance theory-practice integration of student nurses. The observations of the researcher and the literature review led to the conclusion that it was important that such study be conducted. Though the aim of this study was not to generalise the findings to other provinces, some institutions offering programmes to nurses with similar challenges could benefit by

possible review of their educational strategies and training processes in order to enhance theory-practice integration. There could be a possible reduction of student nurses who are exiting the four-year comprehensive programme before completing their education due to failure in theory despite their being successful in clinical practice. This could be cost-effective for the government. The authorities in charge of nursing education might re-examine the factors that affect theory-practice integration and come up with enabling strategies to enhance such integration. Lastly, the findings of this study could add to the existing base of knowledge both nationally and internationally.

1.12 LIMITATIONS

This study is unique as it was conducted in the Limpopo province and is limited because the findings cannot be generalised; it was done in a specific environment which is not necessarily similar to other nursing colleges.

1.13 THE ROLE OF THE RESEARCHER

The researcher is currently employed by the SANC as a professional officer. The researcher is also a student in the Department of Health Studies at the University of South Africa. The researcher is required to independently conduct research and submit a dissertation in fulfilment of the requirement for the degree of Master of Arts. The study was not an initiative by the SANC nor did the researcher pose as a professional officer or in any way act as a representative of the SANC.

1.14 ETHICAL CONSIDERATIONS

Neuman (2006:129) defines *ethics* as “what is or is not legitimate to do or what moral research procedures involve”. Stommel and Wills (2004:373) define *ethics* as “an academic discipline based in the philosophic and social sciences that is concerned about both descriptive and prescriptive questions of morality”. Ethical issues are therefore concerns, dilemmas and conflicts that arise over the proper way in which research is conducted. To ensure that ethical considerations were achieved in this study the researcher observed the following:

- The research proposal was approved by the Research and Ethics Committee at the Department of Health studies of the University of South Africa (see annexure A).
- Permission to conduct the study was requested and approved by the Limpopo Provincial Department of Health and Social Development and the principal of a selected nursing college in the Limpopo province (see annexure B and C).
- Informed consent was observed by explaining to the respondents the purpose and objectives of the study, data collection methods and the significance of the study (see annexure D).
- To maintain anonymity, respondents were not linked to collected data as codes were used for individual respondents.
- Right to privacy was maintained by not sharing the information without the consent of the respondents.
- The researcher informed the respondents that they would not be remunerated for participation.
- No physical, psychological and emotional harm was inflicted on the respondents.
- The respondents were informed about giving written consent and that they had the right to withdraw from participating in the study without victimisation by the researcher (see annexure D). The detailed discussion of the ethical considerations observed will be discussed in section 3.8.

1.15 LAYOUT OF THE REPORT

The layout of this study is as follows:

Chapter 1	Orientation of the study
Chapter 2	Literature review
Chapter 3	Research and methodology
Chapter 4	Results
Chapter 5	Conclusions, limitations and recommendations

1.16 CONCLUSION

Data from various studies reveal that there is a gap between the theory and clinical practice in nursing education. This gap brings about inconsistencies in the outcome of evaluation in theory and clinical practice. This chapter focused on the background to the study on the factors that affect theory-practice integration of student nurses at a selected campus of a nursing college in the Limpopo province. The chapter introduced the problem statement, research questions, the research purpose, objectives, assumptions and the significance of the study. The research methodology and design were outlined, the definitions of terms as applied to this study were provided, and the scope, limitations and ethical considerations described. The literature review, which is based on the theoretical framework used for this study, will be discussed in chapter 2.

CHAPTER 2

Literature review

2.1 INTRODUCTION

A literature review is defined in Polit and Beck (2008:757) as “a critical summary of research on the topic of interest, often prepared to put a research problem in context”. According to Polit and Beck (2008:106) and Brink et al (2006:67), a literature search serves the following purposes:

- To assist the researcher to conduct a critical, analytical appraisal of what is already known about the research topic at hand, so that the gaps and weaknesses that exist are identified.
- To identify the research problem and refine the research question.
- To help study the conceptual and operational definitions used in the previous research.
- To prevent unintentional duplication by placing the study in the context of the general body of knowledge and enhance the probability that the new research will make a valuable contribution.
- To analyse the advantages and the disadvantages of research methods used so that they can be adopted or improved.

Bless and Higson-Smith (2000:21), outline some of the disadvantages of conducting a literature search as follows:

- The researcher may be influenced by findings of the previous research
- The researcher might accept any criticisms and fail to discover new possibilities
- It is possible that the researcher might be tempted to work within an established framework without exploring new methods

A brief overview of Kolb’s Experiential Learning Model was provided in chapter 1. This chapter will focus on an extensive exposition of Kolb’s Experiential Learning Model and its application to nursing education. The literature that was examined also includes

other learning styles, adult learning theory, simulation of skills in the laboratory, clinical facilities used for placement of student nurses, unequal weighting of importance assigned to theory as compared to practice, student accompaniment, evaluation in nursing education and challenges associated with clinical evaluation.

2.2 THEORETICAL FRAMEWORK

Theory is defined in Polit and Beck (2008:140) as “an abstract generalisation that offers a systematic explanation about how phenomenon is interrelated”. Burns and Grove (2001:44) define a framework as “the abstract logical structure of meaning that guides the development of the study and enables the researcher to link the findings to nursing body of knowledge”. Therefore a theoretical framework can be described as an explanation which is based on theory and helps the researcher to understand how and why concepts in the study are related to each other.

According to Polit and Beck (2008:144), a theoretical framework serves the following purposes:

- To enable the researcher to make the findings meaningful and generalisable.
- An efficient means of synthesising facts drawn from separate and isolated investigations, thereby making the accumulated evidence accessible and useful.

This research is based on Kolb’s Experiential Learning Model, which argues that “learning is the process whereby knowledge is created through the transformation of experience” (Knowles et al 2005:197; Kolb 1984:38). According to De Jong (2006:153), this definition undermines the notion that learning is either an intellectual activity or one that involves practice, implying that theory and practice are central in nurse education and training. Kolb (1984:30) suggests that experiential learning occurs in a four-stage cycle which involves four adaptive learning modes: *concrete experience*, *reflective observations*, *abstract conceptualisation* and *active experimentation*. Kolb further identifies four distinct learning styles that are formed by the four adaptive learning modes, namely: *divergent*, *convergent*, *accommodative* and *assimilative* (see description under section 2.2.4).

2.2.1 Historical background

Experiential learning has become an essential part of education from infancy to adulthood and also the method of choice for learning and personal development (Ethridge & Branscomb; 2009:400; Kolb 1984:3). In literature, experiential learning is related to the masters such as Dewey, Lewin and Piaget, who are regarded as the most intellectual forefathers of the experiential learning model. Kolb himself is viewed as the leader who advanced the practice of experiential learning (Kolb 1984:4).

The term “experiential learning” was so called because of the central role experience plays in the learning process (Kolb 1984:20). Students are directly in touch with the realities of what is being studied rather than only thinking about it. According to Kolb (1984:4), experiential learning strengthens the linkages between education, work and personal development. This idea has been supported by Dressler and Kneeling (2004) cited in Lee (2007:39), who indicate that experiential learning has personal, academic, work and career related outcomes as some of the benefits. Lee (2007:39) further states that experiential learning also allows for students to apply what they learn in the classroom in actual real-work experience, and vice versa. These linkages could occur in the classroom and the real world with experiential learning methods. The learning process, according to Kolb (1984:4), should ideally offer a system of competencies for describing job demands and corresponding educational objectives. Active involvement of students, student centeredness, a degree of autonomy, flexibility and interaction, some measure of autonomy and a high degree of relevance are the key characteristics of experiential learning (Quinn & Hughes 2007:33). The contributions made by different authors to the understanding of experiential learning will now be briefly discussed.

2.2.1.1 Contributions made by Kurt Lewin

According to Kolb (1984:9), Lewin was concerned with the integration of theory and practice. He believed that for learning to occur there needs to be a dialectical tension and conflict between immediate concrete experience and analytical detachment, because in real life there is a conflict between what is taught in a clinical setting and theoretical content, and this is a central dynamic in the process of experiential learning (Kolb 1984:10). The process of experiential learning, according to Lewin, is an integrated process which begins with concrete experience, followed by collection of

experience and information about the experience in which students reflect on the experience. Reflection leads to theory formation, from which new implications for action can be deduced. These implications arising from conceptualisation help guide future action and new experiences (Kolb 1984:21; Quinn & Hughes 2007:34).

2.2.1.2 Contributions by John Dewey

According to Kolb (1984:4), Dewey believed that it is through experiential learning that education, work and personal development are properly linked. Educational methods that are used should be able to translate the abstract ideas in education into practical realities (Kolb 1984:6). Dewey believed that because most of the students are not vigorously socialised into the classroom and textbook way of learning, field placement helps to capitalise on their practical abilities while applying ideas learned from classroom. He further believed that learning methods that combine work, theory and practice provide a good climate for learning (Kolb 1984:6). According to Kolb (1984:22), Dewey describes how learning transforms the impulses, feelings and desires of concrete experience into higher-order purposeful action. The formation of purpose is a complex and intellectual operation which starts with an observation of the surrounding conditions, leading to gathering of knowledge about the situation in the past through recollection, information and advice and makes a judgement based on what was observed and knowledge gathered and what it signifies. There is a great similarity between Lewin and Dewey because they both emphasise learning as a dialectic process that integrates experience and concepts, observations and ideas which give direction to impulse (Kolb 1984:22).

2.2.1.3 Contributions by Jean Piaget

According to Kolb (1984:12), Piaget`s focus was on the nature of intelligence and how it is shaped by experience. Piaget suggests that intelligence is not natural but is shaped by experience. Learning arises as a product of the interaction between the person and his/her environment; this is similar to the learning models of Lewin and Dewey (Kolb 1984:23). Piaget sees the dimension of experience and learning, reflection and action as the basic continuum in the development of adult thinking (Žorga 2002:271). The development from infancy to adulthood moves from a concrete phenomenological view

of the world to an abstract constructivist view, and from the active ego-centred view towards reflective internalised behaviour (Žorga 2002:271).

According to Kolb (1984:23), Piaget suggests that in learning, mutual interaction takes place between the process of accommodating concepts or schemas to the experiences in the world and the process of assimilating events and experiences from the world into the existing concepts and schemas. Learning results from a balanced tension between these processes. When accommodation processes dominate assimilation, we have imitation-moulding of the person to environmental contours or constraints, and when assimilation predominates over accommodation we have the imposition of the person's concept and images without regard to environmental realities (Kolb 1984:23). The process of cognitive growth from concrete to abstract and from active to reflective dimension is based on constant interaction between accommodation and assimilation (Kolb 1984:23).

2.2.2 Characteristics of experiential learning

Lewin, Dewey and Piaget's contributions to the understanding of experiential learning reflect similarities which could best be described using the following characteristics:

2.2.2.1 Learning is a process and not an outcome

Theories of experiential learning distinguish it in that it departs from the behavioural theories and traditional approach, holding that ideas are not fixed, but are formed and reformed through experience. Two thoughts are never the same because experiences always intervene. If learning is defined by outcomes, learning will not occur because there will not be modification of ideas. Therefore knowledge is regarded as a process and not a product (Kolb 1984:26-27). Lee (2007:40) departs from this notion as this author still values specific learning outcomes as of the utmost importance in experiential learning, viewing it as a powerful way to demonstrate the academic value of experiential learning.

2.2.2.2 *Learning is a continuous process grounded in experience*

It has earlier been indicated that learning occurs when the life experiences are transformed into knowledge, therefore knowledge will be continuously being formed and tested out in the experience of the student. Dewey, cited in Kolb (1984:27), indicated that “continuity of experience was a powerful truth of human existence to the theory of learning”. This implies that experience will shape future decision making: what was learnt in the past becomes vital in understanding future experiences.

Learning as a continuous process has important educational implications. It implies that all learning is relearning; for example, every student enters the nursing profession with more or less accurate ideas about what nursing entails.

2.2.2.3 *Learning requires the resolution of conflicts between dialectically opposed modes of adaptation to the world*

Kolb (1984:31) suggests that learning occurs when there is resolution of conflict when dealing with the world. For example, there are conflicting ideas in the Kolb’s Experiential Learning Model between concrete and abstract experience abilities and between reflection and action. The process of development will only occur if the conflicting abilities are confronted and synthesised. In order for the students to be effective, they need all the four different kinds of abilities: concrete experience abilities, reflective observation abilities, abstract conceptualisation abilities and active experimentation abilities. Students must choose the set of abilities in a specific situation which will enable them to move from being an actor to observer and from specific involvement to general analytic detachment (Kolb 1984:31).

2.2.2.4 *Learning is a holistic process of adaptation to the world*

According to Kolb (1984:31), experiential learning describes the central process of human adaptation to the social and physical environment. In order for the learning process to be viewed as holistic, it should integrate thinking, feeling, perception and behaviour. The learning process is broader; it also involves creativity, problem solving, decision making and attitude change (Kolb 1984:31).

2.2.2.5 Learning involves transactions between the person and environment

Traditionally, the teacher, classroom and textbooks were regarded as important for learning, rejecting the real world environment. With the experiential learning model, experiences rooted in the environment are important for learning (Kolb 1984:34).

2.2.2.6 Learning is the process of creating knowledge

Kolb (1984:36) emphasises that knowledge creation occurs at all levels of life and is the result of the transaction between social and personal knowledge, which can be objective or subjective. But in the process of learning, knowledge will be derived where there is continuous transaction between the subjective and objective experiences (Kolb 1984:36). In order to understand knowledge, Kolb (1984:37) further indicates that there is a need to understand the psychology of the learning process and the origins, nature, methods and limits of knowledge.

2.2.3 Kolb's Experiential Learning Model

Kolb's Experiential Learning Model and the important concepts that form this model will now be discussed. According to De Jong (2006:153), Kolb's Experiential Learning Model affirms the centrality of experiential activities in the learning process, where human development occurs. According to Kolb (1984:21), learning is conceived as a four-stage cycle as depicted in figure 2.1

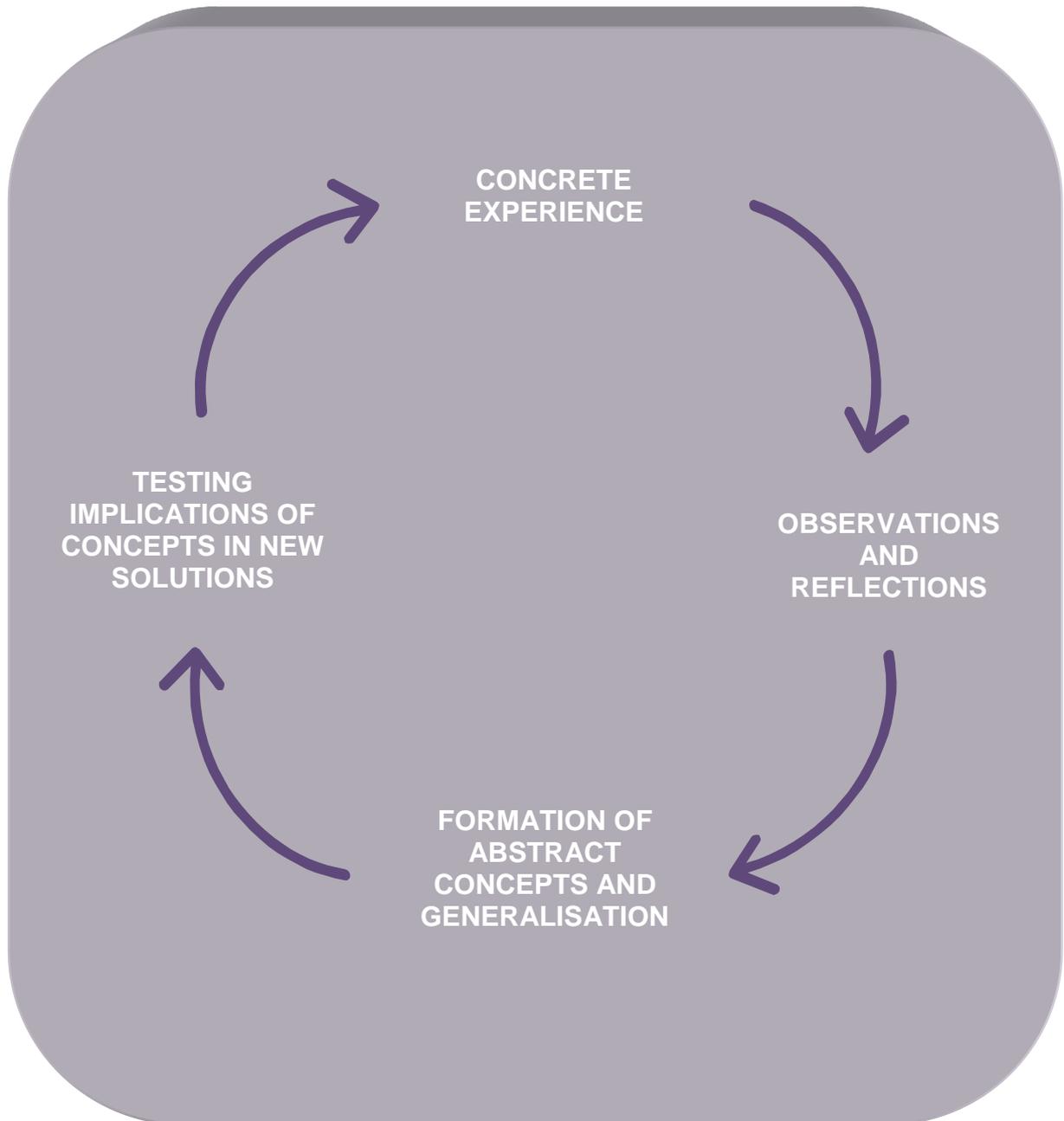


Figure 2.1 Kolb's Experiential Learning Model
(Quinn & Hughes 2007:34)

2.2.3.1 Concrete experience

According to Kayes (2005:250), concrete experience involves the use of direct experience, feelings and emotions when interacting with the world. Experiential learning, according to Quinn and Hughes (2007:34), is a cycle and is directed by individual goals. According to Burton (2006:298), Kolb indicates that learning starts

when a student responds to concrete experience by being involved in tangible issues acquired in performing his or her duties which the student finds interesting or problematic. The experience could be attending a class, a field trip, an interaction or even demonstration of a skill or procedure. The experience brings about feelings as opposed to thinking, and problems at this stage are solved through intuition as opposed to a systematic, scientific approach. Concrete experience is the basis for observation and reflection from which concepts are assimilated and actively tested (Kolb 1984:68, Quinn & Hughes 2007:34). According to Benner and Wrubel, cited in Field (2004:561); “nursing knowledge is practical know how without a conscious theoretical understanding, but through experience in learning situations”.

2.2.3.2 Reflection and observation

Reflection of the experience refers to becoming aware of the experience, recollecting details of the experience and gathering new information about the experience (Kayes 2005:250). Reflection as a concept was first established in education through the work of Donald Schön. According to Schön (1983), cited in Quinn and Hughes (2007:36), the focus of reflection is the relationship between academic knowledge and the competence involved in professional practice. The argument is that professional practice is the application of theoretical principles to solve problems. Theory and practice should therefore be seen as equal. An orientation towards reflective observation is based on understanding the meaning of ideas and situations by carefully observing and impartially describing them. The focus is on understanding as opposed to practical application (Kolb 1984:68). The reflector’s practical experience to a large extent influences the ability to reflect on practice (Landmark et al 2003:835). Students can collect data about an experience while it occurs or after it has occurred. Reflection can take many forms, for example individually or in groups, written or verbally, in a structured or unstructured manner. According to Burton (2006:299), reflective observations allow students to learn from practice in a more in-depth way that enhances practice, a new way of doing something, clarification of an issue, the development of a skill or the resolution of a problem.

Bezuidenhout (2003:15) sees reflective learning as a means whereby the experiences are interpreted, which guides subsequent understanding, appreciation and action. It is stated in Benner (1984) cited in Gillespie and McFetridge (2006:640), that reflection is

also regarded as an essential tool for transforming students from novices to experts. Jerlock et al (2003:223) and Redfern et al (2002), cited in McCarthy and Murphy (2008:310), suggest that if students are not engaging in reflective observations, this will impinge on their ability to integrate theory with practice and on further development of competency, problem solving and decision-making skills.

2.2.3.3 Abstract conceptualisation

According to Žorga (2002:268), “abstract conceptualization is about searching for the meaning of the experience, comparing and searching for possible connections between the reflected experience and other past experiences and linking this with the theoretical knowledge or attitudes”. An orientation towards abstract conceptualisation focuses on using logic, ideas and concepts. The emphasis is on thinking, as opposed to feeling and understanding through intuition. The focus is on building theories and solving problems through a scientific approach (Kolb 1984:69). It is at this stage that students learn to use theories in problem solving, critical thinking, scientific reasoning and the use of nursing processes in decision making about issues (Quinn & Hughes 2007:35).

2.2.3.4 Active experimentation/testing implications of concepts in new situations

An orientation toward active experimentation is based on practical application as opposed to reflective understanding. Students at this stage put emphasis on doing as opposed to observing (Kolb 1984:69). Students test the implications of concepts and theories in solving problems and making decisions associated with new situations. These in turn lead to new experiences and in that way lead to integration of theory and practice (Quinn & Hughes 2007:35).

Kayes (2005:250) asserts that learning occurs when a student utilises one or more of the four modes of learning to resolve a problem. Therefore, in order for learning to be effective and ensure integration of theory and clinical practice, the experiential learning cycle should be completed. Students should be guided through the various stages of the cycle to ensure that crucial links are made between the different stages (De Jong 2006:153). In that way the students will be able to draw the links between theory and clinical practice.

2.2.4 Kolb's learning styles

According to Kayes (2005:250), students develop preferences for using one learning mode over others and this is described as their learning style. Van Rensburg (2009:180) indicates that it is important for educators to assess and understand the learning styles of students as this helps both the educators and the students to develop a more constructive and successful relationship, which is essential in any teaching learning environment. According to Kolb (1984:77) and Bradshaw and Lowenstein (2011:7), the different learning styles are *convergent*, *divergent*, *assimilative* and *accommodative*, as depicted in figure 2.2. According to Kolb (1984:34), the different learning styles can be attributed to the influences of heredity, life experiences and environment.

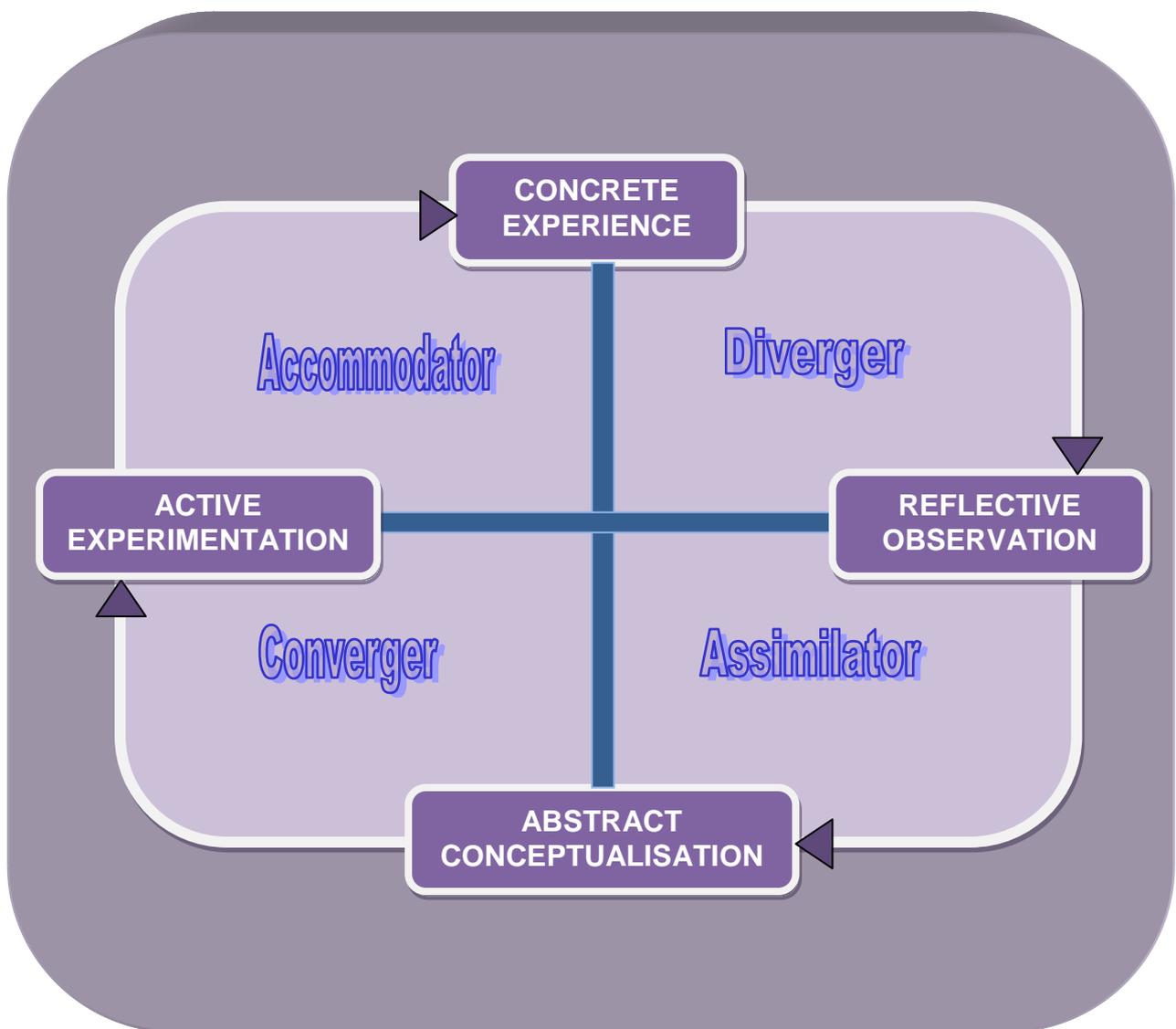


Figure 2.2 Kolb's two dimensional Learning Model and four learning styles

(Loo 2002:253)

2.2.4.1 Convergent

Individuals who rely on this style have the dominant abilities of abstract conceptualisation and active experimentation. These individuals learn by thinking and doing. They prefer to experiment actively with ideas and test the practical relevance of those ideas. According to Quinn and Hughes (2007:42), their strength lies in problem solving and decision making. This style is named “converger” because individuals using this style prefer conventional methods where there is a single answer to a solution or problem. Problems are solved through deductive reasoning. Individuals using this style are unemotional and prefer dealing with technical tasks rather than people (Bradshaw & Lowenstein 2011:7; Kolb 1984:77; Mellish et al 1998:66). Quinn and Hughes (2007:42) describe persons who adopt this style as often seen working in engineering and other physical sciences.

2.2.4.2 Divergent

Divergers perceive information through concrete experience and process it by reflective observation (Little 2004:8). Divergers’ strengths are the opposite of those of convergers. Their strength lies in their imaginative abilities and awareness of meaning and values. Divergers view concrete experiences from many perspectives and the emphasis is on observation rather than action. Individuals using this style perform better in situations requiring generation of alternative ideas and implications. They are people-oriented and tend to be imaginative and feeling-oriented. They prefer to have information presented to them in a more detailed systematic manner (Kolb 1984:77; Mellish et al 1998:66). According to Quinn and Hughes (2007:43), divergers are characteristically people with humanities and liberal arts backgrounds, and also counsellors and personnel managers.

2.2.4.3 Assimilative

Assimilators perceive information through abstract conceptualisation and process it by reflective observation (Little 2004:8). Their greatest strength lies in inductive reasoning and the use of theories in assimilating disparate observations into an integrated explanation; they are less interested in people and are more concerned with ideas and abstract concepts (Bradshaw & Lowenstein 2011:7; Kolb 1984:77; Little 2004:8; Mellish et al 1998:66; Quinn & Hughes 2007:42). According to Quinn and Hughes (2007:43),

people with this style are found in basic mathematics and science, research and planning departments.

2.2.4.4 Accommodative

Accommodators perceive information through concrete experience and process it by active experimentation (Little 2004:8). Individuals using this style have the opposite strengths from assimilators. Their greatest strength lies in doing things through hands-on experience: by doing and feeling, carrying out plans and tasks and getting involved in new experiences. This style is called “accommodative” because these individuals can adapt to changing situations as and when the situation requires it. They tend to solve problems in an intuitive, trial-and-error manner. They rely heavily on other people for information rather than on their own analytical ability. They are easy with people but are sometimes regarded as impatient and “pushy” (Bradshaw & Lowenstein 2011:7; Kolb 1984:77; Little 2004:8; Mellish et al 1998:66). Quinn and Hughes (2007:43) indicate that accommodators are usually found in action-oriented positions such as marketing or sales.

From the above description of the different learning styles, it is clear that students have their preferred way of learning and may view their own style as the best. As an example, accommodators may see assimilators as theorists and assimilators may see accommodators as pragmatists. Divergers may see convergers as narrow minded and convergers may see divergers as indecisive.

2.2.5 Application of Kolb’s Experiential Learning Model in nursing education

This section applies the key concepts of the model, namely; concrete experience, reflective observation, abstract conceptualisation and active experimentation in nursing education. The application will also relate to the different learning styles associated with the four adaptive learning modes.

2.2.5.1 Concrete experience

It has been indicated earlier that knowledge is created through transformation of experience (see section 2.2) and that learning is a continuous process grounded in

experience (see section 2.2). Therefore the identification of concrete experience is the first stage in the learning cycle. Sugarman (1985:267) indicates that a programme which starts with experiential exercises is in line with this type of philosophy. However, an author like De Jong (2006:153) believes that the experiential learning model only affirms the centrality of the experiential activities and not the priority on the forms of learning. This implies that the student may enter the cycle at any stage and not necessarily at the concrete stage; what is of importance is to ensure that students are guided through the cycle. Students enter any learning situation with some form of expectation; the programme which begins with concrete experience may contradict those expectations. Starting instead with abstract conceptualisation in the classroom setting may seem appropriate.

Experiential learning has important educational implications for adult learners because every student who enters the nursing profession has more or less accurate experience and ideas about issues at hand. The role of the nurse educator is to bring about in students beliefs and theories and implant new ideas by disposing gradually of old ideas which are not congruent with the educational process (Kolb 1984:28). Resistance to accepting new ideas creates conflict between old ideas and new ideas that are not in congruence with each other. Comprehensive learning requires flexibility, and students must sometimes shift from being directly involved to being analytically detached and from being actors to being involved (Kolb 1984:31). This idea is emphasised by Lee (2007:50), who believes that students who are engaged in experiential learning are able to apply what they learn in clinical practice more appropriately in the classroom so that overall learning in both theory and clinical practice is reported by students. The duty of the nurse educator therefore is to take advantage of the benefits that experiential learning brings to the classroom, and those responsible for clinical practice should capitalise on the benefits that the students` classroom experience brings to the clinical setting, so that the experiential learning cycle is completed.

Nursing education institutions, equally, must enhance the continuity of learning by conducting their nurse education and training in such a way that adults have experiences that facilitate their personal learning and development (Kolb 1984:15). Students should be able to fully and openly engage in new experiences without bias. The role of the nurse educator is to bring all experiences to the attention of students. According to Žorga (2002:265), supervision is regarded as an important means through

which students learn how to integrate practical experiences with theoretical knowledge and how to solve problems that they encounter in the work situation. Effective teaching strategies to be used to encourage utilisation of concrete experiences in the learning process include simulations, case studies, field trips, clinical placement and demonstrations (Knowles et al 2005:198).

2.2.5.2 Reflective observations

Supervision in general is seen as important in experiential learning because it assists students to integrate what they feel, watch, think and do, thereby helping to connect clinical practice experience and theoretical knowledge (Žorga 2002:267). This idea is emphasised in Ehrenberg and Häggblom (2007:68) and Landmark et al (2003:839), who add that reflection can help student nurses to discover the value of integrating theory into practice, since it also takes into cognisance the cognitive and the affective elements in the reflective process. Clinical supervision is considered an important mechanism through which reflective learning can be guided (Bezuidenhout 2003:16). It implies that those responsible for supervision of students should have a good theoretical background so that students can see how theory and practice relate. Failure to stimulate students leaves the reflective work superficial (Field 2004:561).

Burton (2006:299) indicates that in order for reflection to lead to change, it should be facilitated; therefore the role of the nurse educator is to encourage reflective practice by planning deliberate activities which will benefit students by developing appropriate skills in reflection. Students should also be assisted to reflect on and observe their experiences from many perspectives, and the ability to reflect can be enhanced through effective teaching strategies such as discussions, small groups, buzz groups, structured problem activities, projects, simulation, role play, portfolio of evidence, case conferences, seminars, staff meetings and doctors' rounds (Knowles et al 2005:198). Patients can benefit from reflective practice because it is regarded as a powerful tool for changing practice (Burton 2006:300).

2.2.5.3 Abstract conceptualisation

Students must understand the observations of the concrete experiences reflected upon and integrate them into logically sound theories, ideas and concepts, which help

students to develop problem-solving skills, analytical thinking and decision-making skills (Quinn & Hughes 2007:34). According to Knowles et al (2005:198), teaching strategies that can enhance the ability to develop the necessary skills include lectures and group discussions. Textbook reading and tests are also intended to expand students' capacity for abstract conceptualisation.

2.2.5.4 Active experimentation

Students in active experimentation test the theories and use them as a basis for future decision making and problem solving. The role of nurse educators is to provide support to students in order to fully experiment based on previous experiments or previous knowledge. Teaching strategies that can enhance active experimentation include laboratory experience, on-the-job experience and internship and practice sessions (Knowles et al 2005:198). According to Lee (2007:50), students who are engaged in experiential learning are able to see the relationship between theory and clinical practice.

The role of the nurse educator will be to guide students in their learning to move through all the four phases of the experiential learning model and create learning situations which encourages them to move from one phase to another (Žorga (2002:268). Seminars, paper writing, formal lectures and textbook reading will reinforce reflective and conceptualising skills, whereas ward placement involves both concrete experiencing and active experimentation (Hodges 1988:344).

Research findings by De Jong (2006:151) on student learning experience of the third-year undergraduate course Documentary Theory and Practice revealed that students experienced theory as important in helping them to understand practice and thus empowering their practice. Lee (2007:48), on the other hand, reported that the students' perceptions of learning in the classroom environment and their industry-based experiential learning increased learning in both classroom and clinical practice. According to Potgieter (1999:12), nurse educators who relate their teaching to Kolb's Experiential learning Model are not only taking into cognisance the different learning styles of students, but are also stimulating creativity of the whole brain, because research has revealed that there is an association between Kolb's Experiential Learning Model and the Whole Brain Model (Potgieter 1999:11). These research findings have

serious implications for the current research as it implies that clinical practice alone cannot make a nurse competent without understanding the theory underpinning the clinical practice. It shows the value of both theory and clinical practice.

2.2.6 Application of Kolb's learning styles

Students have preferred and habitual ways of learning, hence they develop different learning styles and are likely to see their own learning styles as the proper way of doing things. Each stage of the cycle places different demands on students (Hodges 1988:342). The different learning styles have serious implications for nursing education, especially with regard to the current research problem in which student nurses have challenges pertaining to theory-practice integration, as evidenced by the discrepancy in their academic performance between theory and practice. Nursing as an art and science requires emphasis on the different learning styles.

The learning styles also play an important role in determining the level at which to enter the experiential cycle. Educators should first tap into the students' individual learning styles to distinguish between those with inductive and deductive orientations, as students with an inductive orientation will do well if they begin the programme with concrete experience, whereas those with a deductive orientation will do well if they begin with abstract conceptualisation. The use of both deductive and inductive learning strategies is advocated in Jerlock et al (2003:219) as equally important, as students will from time to time be required to intervene in situations which require problem solving, decision making and reflection.

2.2.6.1 *Convergers*

Convergers, according to Little (2004:8), learn by doing and thinking, therefore any teaching strategy which starts with abstract ideas and then adapts practical applications from them will benefit convergers (e.g. workbooks, computer assisted instruction).

2.2.6.2 *Divergers*

Divergers learn by feeling and watching, and teaching strategies which require generation of ideas like brainstorming, lecturing or analysing videotapes will benefit

divergers. The nurse educator should give examples in class or the clinical situation, ask questions and give students time to reflect on the question and come up with answers (Little 2004:8).

2.2.6.3 Assimilators

Assimilators learn by watching and thinking. The lecture method, followed by demonstration and laboratory exploration of a subject, followed by a prepared tutorial, will benefit students using this learning style (Little 2004:8).

2.2.6.4 Accommodators

Accommodators prefer to be active participants in their own learning, therefore any method that will encourage independent discovery will benefit accommodators (Little 2004:8).

The research findings by Van Rensburg (1995:160) on the learning styles of nursing students at a distance-teaching university revealed that majority of the respondents' learning styles were convergent, with abstract conceptualisation and active experimentation as their dominant learning abilities. This is in contradiction to other researchers, for example Hodges (1988:343), who found that the dominant learning style amongst student nurses, their teachers and other professional nurses was predominantly divergent, with the dominant learning abilities of concrete experience and reflective observation. The latter research results support the literature, as indicated in section 2.2.4.2, suggesting that divergers are characteristic of people in the humanities and with a liberal arts background.

Van Rensburg (1995:161) further reported that when the respondents' learning styles were correlated with their end-of-the-year examination, there was no significant correlation, implying that their learning styles could not predict academic achievement. In contrast, research findings by Garcia, Hughes and Hewitt (2000) on the interrelationship between the student thinking and learning styles and academic achievement revealed that thinking and learning styles were interrelated and that the students' academic achievement was influenced by their thinking and learning style. Taking into consideration the above findings, the learning preferences of student nurses

need to be assessed so that the teaching strategies used are able to accommodate them (Van Rensburg 2009:179).

2.3 FACTORS THAT AFFECT THEORY-PRACTICE INTEGRATION

2.3.1 Simulation of skills in the laboratory

According to Klein (2006:381), laboratory experiences that are structured are helpful, as they build the foundation for clinical practice and evaluation. A clinical skills laboratory is important to assist student nurses to develop for example, psychomotor, communication and interpersonal skills as well as to develop confidence (Morgan 2006:155). Student nurses should therefore be given an opportunity to practice the skills in a safe environment using a variety of strategies, such as demonstrations, simulations and role-plays. According to Morgan (2006:155), the simulation laboratory helps in ensuring that the students are able to integrate theory and practice during clinical placements; the practice in the simulation laboratory prepares the student nurses for real-life situations. Bambini, Washburn and Perkins (2009:79) revealed that clinical simulation increased communication, confidence and clinical judgement in students. The study that Morgan (2006:155) conducted on whether use of the clinical skills laboratories promoted theory-practice integration revealed that student nurses benefited from the experience during clinical placements.

Andrews and Roberts (2003:478) argue that although a variety of skills can be simulated in the clinical laboratory setting, student nurses are not always in the position to remember what they have learnt when they are faced with the real-life situations. According to Morgan (2006:159), this situation is perpetuated by the fact that student nurses feel that unit professional nurses demonstrate the skills in a different way from that which they were taught in the clinical skills laboratories. Students feel that in the wards they are taught more quickly than in the clinical skills laboratories. Dolan (2003:136) adds that student nurses often report inconsistency between the way in which the nurse educators and the clinical preceptors view competency. According to Bartfay, Rombough, Howse and Leblanc (2004:21), if the simulated skills differ from the real-life situation, students will not be able to make effective connections between what they know and the action that is required. The argument suggest that the role of the nurse educators is to ensure that they are available in the clinical area in order to

support the student nurses and reinforce what was taught in the classroom. The nurse educators should also be in the position to follow the students in the real clinical setting in order to encourage the unit professional nurses to exhibit skills in the correct manner (Morgan 2006:159).

2.3.2 Clinical facilities used for student placement

Facilities used for the clinical placement of student nurses play a bigger role in providing students with the opportunity to engage in practice and make links between theory and practice (Burns & Paterson 2005:6). In order to get maximum benefits from clinical placements, students must be able to interact with all the aspects of the environment, such as nurse educators, preceptors and professional nurses. Evans (2009:21) is of the opinion that high-quality placement should be provided in supportive learning environments rather than the number of areas covered in training. These will assist students to learn practical skills. According to Elcigil and Sari (2008:118), nursing practice promotes lifelong learning, critical thinking, improvement of nursing capabilities, development of self-confidence and the ability to act independently. The students themselves should be equally committed in their learning (Burns & Paterson 2005:6; Morgan 2006:156). This implies that cooperation is needed from all those who are involved in the education and training of student nurses (Jerlock et al 2003:219). According to Gillepsie and McFetridge (2006:641), clinical placement areas should be dynamic and have adequate resources at ward level in order to assist students to link theory and practice. It is therefore important to ensure that there is integration between teaching, supervision and practice in order to achieve high quality training.

Morgan (2006:156) indicates that learning in the clinical areas and the ability to integrate theory and practice is often hampered by too many student nurses being allocated to an area at one given time, all of whom compete for learning opportunities. Clinical placement areas are unique and constantly changing and this creates a challenge for both the nursing education institutions and the clinical placement areas. It is therefore important that clinical environments be monitored continuously to ensure optimum use in line with the agreed contract numbers, feedback from the student nurses and preceptors who are active. Burns and Paterson (2005:8) and Mabuda et al (2008:23) have revealed that clinical facilities which are overcrowded had a negative impact on clinical learning.

2.3.3 Unequal weighting of importance assigned to theory as compared to practice

Fealy (1999:76) indicates that one of the causes of the inability of student nurses to integrate theory with practice is the higher status that is afforded to theory as compared to practice. Morgan (2006:157) adds that nursing skills are sometimes regarded as inferior to intellectual abilities. Mulholland et al (2005), cited in Rutkowski (2007:37), also support this statement by adding that clinical competencies are often rated as pass or fail, not being given the recognition in the formal assessment process.

Hoyles et al (2000), cited in Gillespie and McFetridge (2006:641), are of the view that the after-effects of relocating nursing education to universities have isolated nursing education from practice and heavily weighted theory. It is therefore important that the theory and practice are equally weighted, so that emphasis is placed on the development of competencies in both theory and practice required for safe patient care.

2.3.4 Clinical accompaniment

According to the SANC (1992:8), *accompaniment* in nursing education is “directed assistance and support extended to a student by the registered nurse or midwife with the aim of developing a competent, independent practitioner”. The SANC (1992:8) adds that accompaniment is indispensable in all teaching situations; nobody is excluded from doing accompaniment, therefore registered nurses and midwives must see accompaniment as their role in the clinical practice setting.

Andrews and Roberts (2003:474), however, regard what constitutes appropriate support to student as still problematic because there is no consensus between all those involved in nursing education as to which methods will promote deeper understanding and learning in the clinical area. This idea has been supported by Bezuidenhout (2003:13) and Uys and Meyer (2005:13), who state that there is little practical guidance available pertaining to supervision of student nurses. Andrews and Roberts (2003:474) believe that the function of student support lies with both educators and practitioners. Morgan (2006:160) adds that practitioners should provide the highest standard of care as they have the overall responsibility of providing a positive learning environment for student

nurses. It is in the clinical area that students are exposed to all the learning opportunities under the supervision of the registered nurse or midwife which will enable them to develop critical competencies in the nursing profession (Carlson et al 2003:30, SANC 1992:7). During clinical accompaniment, supervision that encompasses guidance and support is provided so that students are able to achieve the learning outcomes of the programme (Du Plessis 2004:68).

According to Žorga (2002:265), supervision that is provided during accompaniment of students enhances the process of life-long learning and development as an adult. Students are able to acquire new professional and personal insights through their own experience, and are further able to integrate practical experiences with theoretical knowledge.

In order for clinical accompaniment to be effective, it has to be continuous and regular. A minimum of 30 minutes per fortnight per student is regarded by the SANC as sufficient means through which integration of theory and clinical practice can be enhanced (see section 1.2.3). Research findings, however, reveal that student nurses view nurse educators as not contributing to student accompaniment as compared to preceptors (Cele et al 2002:48). In a study conducted by Lekhuleni et al (2004:15), the majority of nurse educators who responded did not perceive clinical accompaniment to be one of their roles, and yet according to these authors (2004:19), accompaniment of students by nurse educators is essential to assist them to bridge the gap between theory and clinical practice.

Research findings by Carlos et al (2003:30) on the accompaniment of first-year nursing students in the clinical environment revealed that several factors led the students to experience difficulties and uncertainties for development of competencies in providing care, for example:

- Unavailability and inaccessibility of staff due to time constraints
- Shortage of resources
- Conflicts of expectations of the nursing education personnel and clinical nursing personnel
- Lack of awareness among senior professional nurses as to what the needs of the first year students were

Therefore it was concluded that the guidance and support offered to these students was inadequate.

The findings by Mabuda et al (2008:19) indicated that students expressed the feeling that nurse educators were not practising student accompaniment; they were only seen in the clinical environment when they came for assessments. Tsele and Muller`s (2000:32) findings on the critical care student nurses` experiences of clinical accompaniment in a private hospital revealed that one of the challenges they face are that theory and clinical practice were too far apart. This could mean that if clinical accompaniment is inadequate, as evidenced by the above research findings, the students will be unable to see the link between the theoretical and the clinical components of the programme. These findings were also supported by Lipinge and Venter (2003:10), who revealed that student nurses express dissatisfaction due to lack of support and guidance from the nurse educators during their clinical placements.

2.3.5 Evaluation in nursing education

Evaluation in nursing education plays a crucial role because it is central in ensuring that the educational programmes are monitored. According to Oermann and Gaberson (2006:1), evaluation is also used as a yardstick in measuring the expected level of performance or competence and achievement of the learning outcomes in line with the approved curriculum and the level of study. It is also through evaluation that quality assurance of education can be done. Evaluation involves the use of value judgments in order to arrive at the required quality of level of performance. It is therefore complex and subjective in nature. According to Oermann and Gaberson (2009:9), evaluation is beyond a test score or clinical rating and hence merits of the learning and performance are based on data.

Oermann and Gaberson (2006:4) identify the purposes of evaluation as follows:

- To assess the level of change in both theory and practice that is brought about by the educational experience

- To identify gaps, additional needs and weaknesses so that additional support or instruction is provided where needed so that students are able to develop competencies for practice
- To serve as a platform for providing feedback to students

Evaluation of theory in most nursing education institutions is conducted through written tests, examination, assignments, projects, questioning of students and small-group activities. It is marked and moderated by experienced nurse educators (Rutkowski 2007:37). Evaluation of practice is usually by written assignments, objective structured clinical examination, portfolios and projects about clinical experiences. The most common form of evaluation, though, is by observation of students learning to provide care either in the clinical setting or in simulated conditions. Questioning students about their understanding of clinical decisions can also be used in clinical evaluation (Oermann & Gaberson 2006:5; Quinn & Hughes 2007:268).

2.3.5.1 Formative

This is the type of evaluation that occurs throughout the educational process and, according to Quinn and Hughes (2007:268) and Oermann and Gaberson (2006:4), it serves the following purposes:

- Since it is a continuous form of evaluation, it provides for feedback about the students' progress so that any necessary modification can be made; hence it is diagnostic in nature. It is during this stage that nurse educators assess the progress of students towards meeting the educational objectives
- In clinical practice, it is an important part of the instructional process
- It assists in reinforcing successful learning

Quinn and Hughes (2007:268) believe that ideally, formative evaluation should not be graded as it is used for feedback or diagnosis of students' needs for further instruction.

2.3.5.2 Summative

Summative evaluation is done at the end of the learning process but can also occur at periodic intervals. It is final in nature. Unlike the formative evaluation, it is not aimed at

assessing the progress of the student, but is aimed at determining the student's grade and certifying competence (Oermann & Gaberson 2006:5). The final score or mark determines one of the following:

- Failure, and the student is to repeat the same level or carry the failed subjects to the next level of study in line with the rules of the nursing education institution, or terminate the course
- Failure, but qualifies for a supplementary examination
- Pass or pass with distinction, whereby the student is promoted to the next level of study or completes the course

2.3.6 Criteria used for evaluation

Karayurt, Mert and Beser (2008:1123) indicate that in nursing education, clinical evaluation is viewed as crucial for both students, nurse educators and patients, therefore valid and reliable instruments should be used in order to allow for a more objective evaluation of performance. Irrespective of the nature or purpose of an evaluation, ideally it should meet the four important criteria for evaluation. These include *validity, reliability, discrimination and practicality or utility*.

2.3.6.1 Validity

Validity is defined as an “ability of an instrument to accurately measure what it is supposed to measure, given the context in which it is applied” (Brink et al 2006:158). In nursing, it refers to the ability to measure the objectives. For an example, the technique of giving an injection cannot be measured by a written test because it is a clinical procedure. In clinical evaluation the focus is the measurement of performance or competency. The question that arises is whether there are evaluation instruments that can accurately measure competency. Authors such as Dolan (2003:133) indicate that an objective measurement in any assessment is a major problem, especially assessment of clinical competencies.

2.3.6.2 Reliability

Reliability is “the degree to which an instrument can be depended upon to yield consistent results if used repeatedly over time on the same person or if used by two researchers” (Brink et al 2006:163). As indicated earlier, evaluation requires value judgment, therefore the question that arises is whether there are evaluation instruments which when used repeatedly within a similar context can yield similar results in a student. Because different people are involved with evaluation of students, problems of low marker reliability could possibly affect the reliability of an instrument, if some evaluators are strict and others less strict. According to Rushforth (2007:485), the greatest threat to validity and reliability is when too few items are sampled for assessment.

2.3.6.3 Discrimination

Discrimination refers to the ability of a test to discriminate between those who answer correctly and those who do not and those who perform according to set standards and those who do not (Quinn & Hughes 2007:271). If an evaluation instrument fails to do this, it serves no purpose. In clinical evaluation the objective is to measure competency and be able to distinguish between different students.

2.3.6.4 Practicality or utility

Practicality of the instrument refers to the quality of the instrument and its administration (Oermann & Gaberson 2006:34). A test should be practical for its purpose in terms of time, the conduct of the test, cost of using it and its practicality for daily use in terms of resources (Quinn & Hughes 2007:271).

Dolan (2003), cited in Rutkowski (2007:36), suggests that clinical evaluation is a very complex process and a subjective one, which may vary from one evaluator to the next. Some of the challenges associated with clinical evaluation will now be discussed.

2.3.7 Challenges associated with clinical evaluation

Clinical evaluation has been a contemporary issue for discussion as one of the many challenges that face nursing education both nationally and internationally, at both undergraduate and postgraduate level (Bourbonnais, Langford & Giannantonio (2008:62). For the nursing colleges to produce professional nurses with the skills of safe, caring and competent decision-making practitioners, evaluation should be central to nursing education, especially clinical evaluation (Bourbonnais et al 2008:62; McCarthy & Murphy 2008:301).

The literature, for example Gill, Leslie and Southerland (2006:105), McCarthy and Murphy (2008:303), Schuwirth and Van Der Vleuten (2003:65) and Watson, Stimpson, Topping and Porock (2002:422), suggests that some of the problems with clinical evaluation can be contributed to the continuing difficulty of defining competency and therefore the difficulty of designing evaluation tools which will accurately measure competency.

2.3.7.1 Curriculum design

Stenhouse (1975) cited in Quinn and Hughes (2007:108) defines the term *curriculum* as “an attempt to communicate the essential principles and features of an educational proposal in such a form that it is open to critical scrutiny and capable of effective translation to practice”. Therefore the methods of assessment should reflect the content, delivery method and the learning outcomes of the programme (Quinn & Hughes 2007:109; Gibbs (2003), cited in Foster (2004:333). Nursing is a practice-based profession, therefore those who control nursing education should institute a curriculum that recognises the fundamental value of the practice setting as the source from which much learning emanates (Manias & Aitken 2005:68). According to Fealy (1999:76), professional socialisation of student nurses and the manifestation of a hidden curriculum are some of the factors that contribute to poor theory-practice integration. The student nurses should therefore have a theoretical understanding of issues that relate to practice, and the ability of nurse educators and professional nurses to provide quality practice placements is fundamental to any nursing curriculum (Morgan 2006:160). Delivering theory and clinical practice as separate entities within a

curriculum promotes theory-practice gap. Davhana-Maselesele (2000:125) reveals that a curriculum often does not allow for the integration of theory and practice.

2.3.7.2 Educational preparation of nurse educators and all those involved in teaching of student nurses

The SANC (1985) prescribes the educational requirements for becoming a nurse educator. One of the requirements that is consistent for both subject heads and tutors/nurse educators and for all the subjects is an up-to-date knowledge in respect of clinical practice, preferably with a relevant post-basic clinical qualification. It is indicated that if a clinical tutor is not a registered tutor, that person should have been through an appropriate programme of in-service training with particular emphasis on accompaniment and evaluation (SANC 1985). Nurse educators are faced with many challenges, as their roles demand that they be dynamic in their response to both local and international demands to produce professional nurses who are competent, knowledgeable and caring (Gillespie & McFetridge 2006:639).

Duke (1996:409) states that some of the inconsistencies in clinical evaluation are due to evaluators who do not have the appropriate qualifications and teaching experience and hence do not understand the teaching-learning process. This idea has been emphasised by Ehrenberg and Häggblom (2007:68), who indicate that professional nurses who also function as clinical supervisors do not have nursing research as an additional qualification, hence the support they offer to students lacks an academic perspective. According to Rutkowski (2007:37), theoretical papers, for example, are marked and moderated by experienced nurse educators, whereas clinical evaluation is often performed by unit professional nurses, preceptors or mentors who may have minimal experience of the whole evaluation process; this implies that some evaluators may not be adequately prepared to evaluate students. Rutkowski (2007:37) further indicates that clinical evaluation forms are usually designed by the nurse educators using educational terminology which may also not be familiar to those in the clinical area. Therefore preceptors, mentors or unit professional nurses may need additional support in order to understand all the evaluation tools.

The research findings by McCarthy and Murphy (2008:311) into the assessment of undergraduate nursing students revealed that majority of the preceptors who were

involved in the assessment of the students were inexperienced, did not understand the whole evaluation process and did not utilise all of the recommended assessment strategies. Kelly (2007:889) quotes some students referring to their educators by saying, "When you are just a clinician it just becomes really sterile, I think you are focused on skills, skills, skills. But if you only have the teaching, then you lose the skills part of it. You need both". This implies that all those involved in evaluation of students, regardless of the setting, should be knowledgeable about theory and clinical practice in order to be familiar with the evaluation process.

The research findings by Hanson and Stenvig (2008:40) into the attributes of the good clinical nursing educator revealed that the educator's current knowledge of theory and practice and the integration of this knowledge into practice is an important attribute. This view is supported by Gillespie and McFetridge (2006:639), who indicate that the roles of nurse educators are dynamic and that they need to remain credible within the clinical setting. According to Rolfe (1996:3), the concepts of nursing practice have developed significantly over the past 30 years, but nursing theory and the way in which the theory and the knowledge has been generated has not kept pace. It is therefore up to the nurse educators to be able to keep abreast of developments in the clinical area in order to be able to facilitate practice-based teaching. Landmark et al (2003:835) state that competent clinical supervisors are better able to support student nurses, as they build bridges between theory and practice. Failure to develop these will lead to the theory-practice gap, with inconsistencies in evaluation of students as the product. According to Gillespie and McFetridge (2006:639), this is true, but it must be realised that nurse educators, due to their heavy work load, are sometimes not able to fulfil their roles adequately.

2.3.7.3 *Utilisation of different evaluators*

According to McCarthy and Murphy (2008:303), internationally clinical evaluation is undertaken by different evaluators in different countries; for example, in Ireland clinical evaluation is done by preceptors, in the United Kingdom also by preceptors, in Australia by clinical facilitators in the first and second year and by preceptors in the third year. In the United States of America it is done by the preceptors, and in China by the mentors and the clinical instructors. This variation of evaluators, according to McCarthy and Murphy (2008:303), creates a problem because some evaluators may have only

minimal experience in conducting examinations and may not understand the evaluation forms. Evaluation should ideally be a continuous process.

2.3.7.4 Use of a pass mark to indicate competency

According to Cotter, Bradway, Cross and Taylor (2009:661), clinical courses are rated as pass or fail in clinical assessment and a pass rating is required to indicate that the clinical course was successfully completed. Rushforth (2007:486) indicates that some other international institutions, for example in the United Kingdom, use 40% as a pass rate for undergraduate studies and 50% for Masters` programmes. The use of 50% seems to be problematic, especially in practica; it implies that students who have not met requirements for 50% of the skills are said to be competent enough to be promoted to the next level or for completion of the course; if he or she failed 50% of the skills is that student to be considered a safe practitioner?

Another concern with the 50% pass mark in clinical practice, raised by Rushforth (2007:486), is where a student obtains 50% and yet did not observe critical aspects or safety items of the skill. It must be acknowledged, though, that most institutions offering nursing programmes have come up with mechanisms of letting the student to fail if the safety or critical aspect of the skill is not observed. There are however some concerns because there is no consensus amongst nurse educators as to what constitutes “critical/safety” aspects of a skill (Rushforth 2007:486; Watson et al 2002:423).

2.3.7.5 Failure by evaluators to fail students

The purpose of evaluation has been described already (see section 2.5.5) According to Rutkowski (2007:38), evaluators often do not have enough evidence to fail the students even if they do not deserve to pass, and this also compromises the whole evaluation process. Some of the reasons for reluctance to fail the students have been highlighted as follows, according to Rutkowski (2007:38).

- Lack of time to spend with students for assessment, rendering the evaluators reluctant to fail the students because not enough time was spent on supporting and guiding the students. This could be attributed to shortage of staff.

- Evaluators are sometimes afraid to fail the students even if they do not deserve to pass, because they do not want to terminate the students' education on the basis of failure of clinical practice, as they do not view this as their role. They would prefer students to terminate their studies because of failure of theory. It is assumed that if students fail clinical practice it will reflect negatively on evaluators, as they will be seen as having failed to create a conducive learning environment.
- Llott and Murphy (1997) and Castledine (1995), cited in Rutkowski (2007:38), state that sometimes failing a student in clinical practice creates anger and frustration between the student and the evaluator which may create a negative working environment and lack of confidence; hence the evaluators sometimes "just let it go".

Duke (1996:408) also indicates that evaluators sometimes become frustrated by the subjective nature of clinical evaluation and are not ready to make final judgements regarding the adequacy of a student; they end up passing the student as they do not want to be seen as altering the student's career path by failing the student. Evans (2009:23) and Pellant (2006:338) agree and indicate that evaluators in the clinical area find it difficult to fail students.

2.3.7.6 Design of the clinical evaluation tools

Clinical evaluation should ideally measure three domains: cognitive, psychomotor and affective skills. This implies that evaluation of clinical competency must include both theory and clinical practice. But the literature has indicated that designing clinical evaluation tools that are capable of measuring knowledge and skills and attracting academic and professional credit is still a challenge to nurse educators (McCarthy & Murphy 2008:302). According to Biggs (2003), cited in McCarthy and Murphy (2008:309), clinical evaluation tools that focus on practical skills rather than overall knowledge and understanding of these skills encourage surface learning and impinge on the link between theory and clinical practice.

Tiwari et al (2005), cited in McCarthy and Murphy (2008:304), indicate that another challenge is when the clinical evaluation tool is designed in such a way that it encourages memorisation, rehearsing of the skill/procedure well before the evaluation,

and selective rote learning of what is to be evaluated. The consequences are that students focus on psychomotor skills instead of development of critical thinking and problem solving skills (McCarthy & Murphy 2008:304).

The type of evaluation tool that is usually used to score students' performance ranges from checklists to rating scales (Oermann & Gaberson 2006:217; Quinn & Hughes 2007:302; Rushforth 2007:485). *Checklist* is defined as "the list of specific behaviour or activities to be observed, with a place for marking whether or not activities were present during performance" (Nitko (2004), cited in Oermann & Gaberson 2006:217; Rushforth 2007:485). The use of checklists does not allow the evaluator to judge "how well" the specific activity is done. If not properly used the student can be awarded marks for activity that was done, but not well done.

Rating scales, on the other hand, "provide a means of recording judgments about the observed performance of students in clinical practice" (Oermann & Gaberson 2006:218). The list of clinical outcomes and competencies is stated in the tool, enabling the evaluator to make judgements of students' performance based on the rating scale. The judgement of the evaluator is also subjective. The combined use of checklist and rating scale has been advocated as ideal for counteracting the weaknesses of each other, but the literature reveals that checklists, even when combined with a rating scale, can still yield very high percentages of student nurses' performance (Rushforth 2007:485).

2.3.7.7 Objective Structured Clinical Examination (OSCE) as an assessment strategy

Strategies used in nursing education for clinical evaluation are vast and diverse, for example portfolios, case studies and the use of the Objective Structured Clinical Examination (OSCE). All have advantages and disadvantages, but OSCE will be discussed in detail because it is one of the most commonly used evaluation strategies in recent years.

The OSCE has traditionally been used to assess medical students, but of late, most institutions offering nursing programmes use this method for assessment of psychomotor skills to be later transferred into real clinical practice (Bartfay et al

2004:19). OSCE is defined by Watson et al (2002), cited in Rushforth (2007:482), as “an examination where students demonstrate their competence under a variety of simulated conditions”. The evaluation tools used in OSCE break down performance into discrete items or competencies. The advantages of OSCE as cited in Bartfay et al (2004:20), Rentschler, Eaton, Cappiello, McNally and McWilliam (2007:135) and Rushforth (2007:483) are as follows:

- It yields objectivity, since the students are exposed to similar skills
- The students are examined by different examiners
- It provides a wide variety of skills to be examined
- It has a high level of reliability and validity compared with other methods
- Because of its nature, all clinical situations can be tested, unlike with other methods
- It is valid, reliable, uniform, safe and can be replicated

Bartfay et al (2004), Bujack et al (1991:a), McKnight et al (1987) and Stroud et al (1999), cited in Rushforth (2007:483), highlight some of the disadvantages of OSCE as follows:

- It brings about stress in students, which can affect performance of students.
- It is too costly in terms of time needed to prepare, evaluators to oversee each station, space needed to prepare for the stations and the physical material needed.
- It breaks performance into series of discrete items and encourages memorisation and rote learning.
- OSCE demands manpower to oversee the different stations, therefore some nurse educators evaluate skills they are not up to date with and this encourages subjectivity or inconsistencies in the evaluation process.
- Because of the demand for manpower, it is usually very difficult to have two nurse educators per station for counterchecking each other, except for the random checking after the OSCE is finished. Therefore if the evaluator was too lenient or too harsh in that station, the students are likely to bear the consequences.

- Exposure to different evaluators who were never part of the formative assessment is problematic, because a nurse educator cannot measure competence with a single evaluation.
- Lack of confidentiality is difficult to maintain due to large numbers of students, where some are evaluated in the morning and others in the afternoon. In between are tea and lunch breaks; the group that do OSCE in the afternoon usually yield a higher percentage of marks than the morning group.
- Students` scores may be increased due to Likert`s scale effect, especially with increased fatigue.
- Because of the mere fact that it is not a real patient, students tend not to take it seriously.
- OSCE cannot measure all the educational domains, therefore it should not be used as the only method of evaluation.
- It may be difficult to develop pass or fail criteria or offer self-evaluation tools and provide generalised feedback.

With all the disadvantages cited above, Rushforth (2007:485) raises the question of whether the marks or scores students get in OSCE can be regarded as valid and reliable measures of competence. It is for this reason that authors like McKinley et al (2001), cited in Watson et al (2002:424), advocate that an OSCE not be used alone to measure a student`s competence; triangulation of evaluation methods is encouraged.

2.4 CONCLUSION

The chapter discussed the historical background of Kolb`s Experiential Learning Model and the contributions made by Lewin, Dewy and Piaget to the understanding of experiential learning. Characteristics of experiential learning, important concepts in the model and the learning styles were discussed. Kolb`s Experiential Learning Model was described, showing how it influences the integration of theory and practice. The learning styles were also described. Other learning styles, adult learning theories, clinical accompaniment, evaluation in nursing education and challenges associated with clinical evaluation were highlighted. The next chapter will focus on the research methodology and design of the study.

CHAPTER 3

Research methodology

3.1 INTRODUCTION

The research methodology refers to the steps, strategies and procedures used for data gathering and analysis in research (Polit & Beck 2008:758). Burns and Grove (2001:223) add that the research methodology is the blueprint for conducting a study and that it is necessary to maximise control over factors influencing the validity of the findings. This chapter describes the research design and method used in this study, including the population and sampling frame, data collection, data analysis, validity and reliability and the ethical considerations.

The overall purpose of this study was to explore and describe the factors that affect theory-practice integration of student nurses at a selected campus of a nursing college in the Limpopo province. Based on these identified factors, recommendations were made to enhance theory-practice integration of student nurses. The research design and method facilitated the attainment of the following research objectives, to:

- Explore and describe the factors that affect theory-practice integration as viewed by the student nurses at a selected campus of a nursing college in the Limpopo province.
- Explore and describe the factors that affect theory-practice integration as viewed by the nurse educators at a selected campus of a nursing college in the Limpopo province.

3.2 RESEARCH SETTING

According to Polit and Beck (2004:28), the research setting refers to a place that is used for data collection. This definition is consistent with the definition provided by Burns and Grove (2003:497), who state that a setting is a location for conducting research. In this study data was collected from the respondents at a selected campus of a nursing

college in the Limpopo province, at the venue and the time agreed upon by the researcher and the selected groups who participated in this study. Owing to the distance of the selected campus and the clinical facilities where student nurses were placed, four days were set aside for data collection. Data collection was done from 8 to 11 December 2009.

3.3 RESEARCH DESIGN

The following section contains the definition of a research design, the rationale for the choice of the selected design and the description of the concepts used in the design.

3.3.1 Definition of research design

Polit and Beck (2004:730) describe the research design as an “overall plan for addressing a research problem”. It refers to the framework of theories and principles on which methods and procedures are based (Holloway & Wheeler 2002:287). Babbie and Mouton (2001:272) state that two steps need to be followed in the research design; the researcher must identify what he or she wants to find out and then determine “the best way to do it”. This study was quantitative, explorative, descriptive and cross-sectional in nature.

3.3.2 Rationale for the choice of the research design

Literature on theory-practice integration has been widely studied during the last decade, but data on theory-practice integration as viewed by the student nurses and nurse educators, in particular from Limpopo province, was limited. Therefore an exploratory and descriptive design was deemed to be the most appropriate, because the study seeks to obtain new information on an area of interest (Wood & Ross-Kerr 2006:121).

3.3.3 Description of the related concepts

The following section describes the various concepts related to the research design as referred to in section 3.3.1:

3.3.3.1 Quantitative design

Quantitative research uses a range of methods which use measurement to record and investigate aspects of social reality (Bless & Higson-Smith 2000:156). The advantage of using measurement is that numbers have the advantage of being exact and can be analysed using descriptive and inferential statistics. Quantitative research was appropriate for this study because it explored and described numerical data on the factors that affect theory-practice integration as viewed by student nurses and nurse educators. This statement is consistent with the view of Polit and Beck (2004:15), who state that quantitative research is a set of orderly and disciplined procedures used to gain knowledge. According to these authors, quantitative research designs are traditional, positivistic and scientific methods used to conduct research by using a series of steps according to a plan of action.

A high-quality quantitative research design has a high degree of generalisability. Polit and Beck (2004:16) maintain that generalisability is the degree to which findings of a study can be applied to other individuals than those who participated in the study. In this study, the researcher used questionnaires to collect data to make recommendations on how theory-practice integration could be enhanced. However, due to the limited scope of the area of study, the findings could not be generalised to other similar settings.

3.3.3.2 Exploratory design

An exploratory research design is used “to search for accurate information about the characteristics of particular subjects, groups, institutions or about the frequency of a phenomenon’s occurrence, particularly when little is unknown about the phenomenon” (LoBiondo-Wood & Haber 2006:240). The aim is to gain a broader understanding of a situation, phenomenon or community (Bless & Higson-Smith 2000:41). The need for such study could arise from the lack of basic information on a new area of interest, or in order to become acquainted with a situation so as to formulate a problem or develop a

hypothesis. In this study literature was reviewed on the factors that affect theory-practice integration of student nurses.

3.3.3.3 *Descriptive design*

According to Brink and Wood (1998:289), descriptive studies describe aspects of a situation as they occur naturally. LoBiondo-Wood and Haber (2006:240) explain descriptive designs in the health care area as a collection of detailed descriptions of existing variables and the use of data to justify and assess current situations and practices in order to make plans for improving health care practices. Burns and Grove (2001:795) add that descriptive designs are explorative and descriptive of real-life phenomena, where they provide an accurate account of the characteristics of particular individuals, situations and groups.

This study explored, described and documented aspects that affect theory-practice integration of student nurses at a selected campus of a nursing college in the Limpopo province.

3.3.3.4 *Cross-sectional design*

A cross-sectional design is where “data is collected on one occasion from different subjects rather than on the same subjects at different points in time” (Brink et al 2006:105). The researcher using this design attempts to understand a topic by collecting a cross-section of information relevant to that topic (Bless & Higson-Smith 2000:66). According to LoBiondo-Wood and Haber (2006:244), the advantage of using cross-sectional studies is that they are less costly in terms of time and money than longitudinal studies. The data is readily available and the results will be readily available as well. Its disadvantage is that it lessens the ability of the researcher to establish an in-depth developmental assessment of the interrelationship of the phenomenon being studied.

In this study the researcher collected data from the second, third and fourth year student nurses and the nurse educators simultaneously on what they perceived to be the contributory factors affecting theory-practice integration of student nurses at a selected campus of a nursing college in the Limpopo province.

3.4 RESEARCH METHOD

The research method addresses the development, validation and evaluation of research tools and methods to be used to gather and analyse the information obtained during the study (Polit & Beck 2008:328). Burns and Grove (2001:223) describe the research method as being the entire plan of the study which includes the steps of the research process from problem identification to the actual data collection.

3.4.1 Phases of research

In this study the steps and phases as described by Polit and Beck (2008:64) were followed, as displayed in table 3.1.

Table 3.1 Phases of the research

PHASES	APPLICATION
Phase 1: Conceptual phase	This is the thinking phase, conceptualisation of an idea through reading, creative thinking and ideas from colleagues and/or advisers.
<ul style="list-style-type: none"> Identifying the problem 	Quantitative research is based on previous knowledge and investigations. A literature review was conducted to determine what was known about the research problem. The literature review was undertaken before commencement of data collection.
<ul style="list-style-type: none"> Doing clinical field work 	To gain further knowledge on the research topic through interaction with peers in the clinical setting in order to gain more insight on recent clinical trends.
<ul style="list-style-type: none"> Identifying a framework and developing a conceptual definition 	Using previous theory to base the research on in order to enhance its implications and further use. Kolb's Experiential Learning Model was used to guide the study.
<ul style="list-style-type: none"> Formulating a hypothesis 	The researcher formulated a prediction of outcome by the researcher; a research question was formulated instead of a hypothesis.
Phase 2: Design and planning	Methods and procedures used to approach the research question and data collection. These are important as they contribute to the reliability and validity of the study.
<ul style="list-style-type: none"> Selecting a design 	The appropriate study design should be selected to minimise bias and enhance the ability to interpret the study findings. The study design was quantitative, exploratory, descriptive and cross-

PHASES	APPLICATION
	sectional (see section 3.3.3)
<ul style="list-style-type: none"> • Developing protocols 	In experimental research, protocols for interventions entail descriptions of interventions used in the research. The development of a protocol was not applicable as this study was not experimental in nature.
<ul style="list-style-type: none"> • Identifying the study population 	The entire population in which the researcher is interested and to which the researcher would like to generalise the findings. This is described in section 3.4.2.
<ul style="list-style-type: none"> • Developing the sampling plan 	Methods applied to select a sample of the population which will be studied in such a manner that the sample is representative of the entire population (see section 3.4.3).
<ul style="list-style-type: none"> • Taking ethical measures 	Measures to ensure that rights of subjects are protected (see section 3.8).
<ul style="list-style-type: none"> • Finalising the research plan 	Pre-test or pilot study is conducted before data is collected to ensure that the research is plausible. See discussion of pre-test under section 3.5.3.
Phase 3: Empirical phase	This is the phase where the collection of data and the preparation of the data for analysis take place.
<ul style="list-style-type: none"> • Data collection 	Data collection of a quantitative study proceeds according to a pre-established plan. It includes specific instructions on how, what, where and when data will be collected (see section 3.5).
<ul style="list-style-type: none"> • Preparing data for analysis 	Data obtained in quantitative studies is typically numeric. Data needs to be coded, thus data gathered should be translated into numerical data for statistical analysis.
Phase 4: Analytical phase	The data that was collected and analysed is not reported in unrefined form; it needs to be prepared and interpreted.
<ul style="list-style-type: none"> • Analysing data 	Data is processed and analysed in an orderly fashion. Quantitative data is normally analysed through statistical analysis (see section 3.6).
<ul style="list-style-type: none"> • Interpreting results 	The researcher makes sense of the data and evaluates the findings. Adequate answers regarding the research question should be obtained (see chapter 4).
Phase 5: Dissemination phase	Development of a research report that can be communicated to the others.
<ul style="list-style-type: none"> • Communicating the findings 	Findings of the study should be communicated to the practice through a research report.
<ul style="list-style-type: none"> • Utilising the findings 	A plan should be set in place to facilitate the utilisation of the research findings in other settings (See chapter 5)

(Burns & Grove 2003:36; Parahoo 2006:105; Polit & Beck 2008:331)

In this study, the methodology of quantitative research as outlined in table 3.1 has been used to guide the research and discussed under sections 3.4.1 to 3.8.

3.4.2 Population

A *population* “is the aggregate of cases which the researcher is interested in, that meets a designated set of criteria” and which possesses certain characteristics (Polit & Beck 2008:337). According to Woods and Catanzaro (1998:99), the research problem, the research design and the availability of participants guides the selection of a population. Parahoo (2006:256) defines a *population* as “the total number of units from which data can be potentially collected, which could be units, individuals, organisations, events or artifacts”.

The target population in this study consisted of two groups: the full-time student nurses currently enrolled for the four-year comprehensive programme and the nurse educators who are responsible for facilitation of learning at the selected campus of a nursing college in the Limpopo province. See tables 3.2 and 3.3.

Table 3.2 Population of student nurses according to levels of study

LEVEL OF STUDY	NUMBER
First year	88
Second year	108
Third year	68
Fourth year	44
Total	308

The above table 3.2 illustrates the number of student nurses in each level. Second-year student nurses were the largest group and fourth-year student nurses were the smallest.

Table 3.3 Population of nurse educators and the subjects they are teaching

SUBJECTS	NUMBER
Biological and natural sciences	4
Social sciences	2
General nursing science	5
Community nursing science	3
Midwifery nursing science	5
Psychiatric nursing science	3
Total	22

Table 3.3 illustrates the number of nurse educators and the subjects that they are teaching.

3.4.3 Sample, sampling and sampling procedure

3.4.3.1 Sample

According to Brink et al (2006:124), a *sample* is a part of the population selected by the researcher to participate in the study. A sample consists of a selected group or subset of the population or elements or units of analysis from the defined population (Polit & Beck 2004:731).

The sample is selected through a sampling process. It is important to select a sample that is representative of the population, that is one whose characteristics directly or accurately reflect the population (Polit & Beck 2004:291). For the purposes of this study, the sample was obtained from the student nurses in their second, third and fourth year of study at a selected campus of a nursing college in the Limpopo province, and the nurse educators responsible for facilitation of learning.

3.4.3.2 Sampling

According to Burns and Grove (2001:39), *sampling* is defined as “the process of selecting subjects who are representative of the population being studied”. Probability stratified random sampling was used for the student nurses. According to Stommel and Wills (2004:300), probability sampling relies on random selection process. The researcher cannot guarantee which members of the population will be selected and the

selection process is therefore regarded as impartial. Stratified random sampling is where the population is divided into subgroups or strata (LoBiondo-Wood & Haber 2006:271). According to Stommel and Wills (2004:304), this sampling method ensures that the required predetermined number of cases in each strata appear in the sample to ensure the degree of representativeness. Parahoo (2006:263) adds that the decision to use this sampling method depends on the research question and the variables of interest to the researcher.

3.4.3.3 Sampling procedure

- Permission was obtained from the principal of the selected campus of the nursing college to access the list of the second, third and fourth year student nurses; therefore the student nurses were divided into three groups or strata. The list was arranged alphabetically. Every second name on the list of each group was chosen to form part of the sample.
- During the date and time when the data was collected, some students were in the two clinical facilities approved for the selected campus, some were in the campus for their end-of-the-year research presentations, some were off duty, others were busy with their supplementary examination and some were on night duty. It could have been difficult to do random sampling within the available student nurses, therefore convenience sampling was used instead. According to Stommel and Wills (2004:301) convenience sampling is a non-probability type where the researcher uses the accessible subjects due to other constraints. Although the researcher was aware of the fact that this type of sampling would be less likely to produce accurate and representative examples (Polit & Beck 2004:292), the respondents were selected from different year groups to prevent bias and to increase sample representativeness.
- A list of those who agreed to participate was drafted in line with the eligibility criteria as outlined in section 3.4.3.4
- The sampling procedure was not applied to nurse educators due to their small number and they were all requested to participate in the study.

3.4.3.4 Eligibility criteria

Eligibility criteria define who is included in the population for which this study was designed (Polit & Beck 2008:338). Stommel and Wills (2004:305) support this definition by stating that eligibility criteria define who is eligible to become a selected subject and who is not. Burns and Grove (2001:366) state that eligibility criteria include a list of characteristics essential for eligibility for membership in the target population. To be included in the study the student nurses had to be:

- Enrolled at the selected campus of the nursing college in the Limpopo province
- In their second, third or fourth year level of study
- Willing to participate in the study

To be included in the study, the nurse educators had to be:

- Employed full time at the selected campus of the nursing college in the Limpopo province
- Responsible for facilitation of learning
- Willing to participate in the study

3.4.3.5 Exclusion criteria

Exclusion criteria define the potential participants who may be excluded in the study. The following exclusion criteria were applied for this study:

- Student nurses who were doing first year because the researcher assumed that because of lack of experience, they might not be mature enough to understand the topic under study.
- Student nurses who were enrolled with the selected campus as “direct entries”. These are student nurses who owe modules and they only avail themselves for the examination.

3.4.3.6 Sample size

The researcher handed over 110 questionnaires to student nurses and 106 came back. The researcher handed in 22 questionnaires to nurse educators and only 9 came back. The sample size seemed appropriate because, according to University of South Africa (2008:95), in order to discuss the findings in terms of percentages a minimum of one hundred respondents is recommended though not essential. The response rate was as follows:

Table 3.4 Response rate of respondents

RESPONDENTS	TOTAL NUMBER	FREQUENCY	RESPONSE RATE
Second year student nurses	108	36	34%
Third year student nurses	68	30	28%
Fourth year student nurses	44	40	38%
Total responses of student nurses	220	106	48%
<hr/>			
Nurse educators	22	9	41%

The total number of respondents was 106 for student nurses and 22 for nurse educators. Table 3.4 depicts the response rate according to the different levels. The total response rate for student nurses was 48%. The majority (38%) of fourth year students responded, more than the other levels. Only 41% of nurse educators responded.

3.5 DATA COLLECTION

According to Polit and Beck (2004:716), data collection is the “method used to collect information required to conduct the research study”. The research objectives were accomplished with the collected data (Burns & Grove 2001:50). The data was collected using a structured questionnaire with limited open-ended questions for the student nurses and the nurse educators who met the inclusion criteria. The data collection instrument enabled the researcher to present the questionnaire in exactly the same way, to minimise the role and the influence of the researcher and to enable a more objective comparison of the results (Bless & Higson-Smith 2000:107).

3.5.1 Development and structure of the research instrument

The researcher, with the assistance of the supervisors for this study and a professional statistician, assisted the researcher to prepare the questionnaires for data collection.

The following guided the researcher in the development of the instrument:

- The research problem, purpose and objectives of the study
- Kolb`s Experiential Learning Model
- The literature review on the possible factors that could affect theory-practice integration of student nurses

The structure of the instrument for student nurses comprised the following sections:

Section A: Responses on demographic profile

The researcher constructed closed questions which aimed at seeking responses pertaining to age, gender and first language. The section comprised parts 1.1 to 1.3

Section B: Responses on educational background

This section consisted of closed questions (2.1 to 2.3.4) and student nurses were expected to respond on their previous nursing qualifications, level of study, if they had ever failed subjects and to provide the reasons for failing.

Section C: Responses on theory-practice integration

The development of questions for this section was guided by Kolb`s Experiential Learning Model pertaining to theory and practice. The researcher divided section C into C1, C2, C3 and C4, in line with the key concepts of Kolb`s Experiential Learning Model; namely concrete experiences, reflective observations, abstract conceptualisation and active experimentation. Only two questions were open-ended, i.e. C3-5.2.7 and C4-6.1.8

Section D: Responses on learning preferences

This section comprised 38 closed items about the students' learning preferences. Development of the question was guided by Kolb's theory of learning styles.

Section E: Responses on assessment

Questions 7.1.1 to 7.2 were all closed and 7.2.4 was the only open-ended item. Student nurses were to respond on issues pertaining to formative and summative evaluation for both theory and practice.

The structure of the instrument for the nurse educators comprised the following sections:

Section A: Responses on demographic profile

The researcher constructed closed questions which aimed at seeking responses pertaining to age, gender, first language, basic qualifications, qualifications in nursing education, post-basic clinical qualification, years of experience as a nurse educator in the teaching learning environment and level at which they were teaching. The section comprised parts 1.1 to 1.8

Section B: Responses on theory

The section consisted of 22 items. Out of these 22 items, four items were open-ended question. Kolb's Experiential Learning Model guided the formulation of all the questionnaires pertaining to theory.

Section C: Responses on practice

The section consisted of 35 items. Of these 35 items, four items were open-ended questions. Kolb's Experiential Learning Model guided the formulation of all the questionnaires pertaining to practice.

Section D: Responses on assessment

Questions 4.1 to 4.2.7 were all closed and 4.2.8 was the only open-ended question. Nurse educators were to respond on issues pertaining to formative and summative evaluation for both theory and practice.

3.5.2 Rationale for the selected instrument

According to Polit and Beck (2008:414), when structured questionnaires are used the respondents are asked to respond to similar questions, in the same order and with the same set of response opinions.

3.5.2.1 Advantages of questionnaires

- They minimise researcher bias and enable a more objective comparison of the results.
- Questionnaires are a quick way of obtaining data from a large group of people
- They are less expensive in terms of time and money.
- Self-administered questionnaires ensure a feeling of anonymity and respondents are likely to provide honest answers.
- The format is standard for all subjects and not dependent on the mood of the interviewer (Brink et al 2006:147).
- They enable the researcher to ensure that all items of the questionnaire are considered without omissions (Bless & Higson-Smith 2000:109; Brink et al 2006:147).

3.5.2.2 Disadvantages of questionnaires

- The development of a structured instrument needs much effort in terms of content, form and wording of questions.
- The respondents are unable to elaborate on responses or ask for clarity.
- The researcher cannot use probing strategies (Burns & Grove 2001:426; Polit & Beck 2008:414).

- According to Brink et al (2006:147), the respondents may provide socially acceptable answers rather than true answers.
- The response rate may be low.
- Non-verbal behaviours and mannerisms cannot be observed.

3.5.3 Pre-testing of the instrument

Pretesting of the instrument is referred to as the study of a smaller version of a proposed study in order to refine the research methodology (Burns & Grove 2001:49). The main aim was to identify the problems with the design and also to test the validity and reliability of the research instruments. After the permission was secured for pre-testing the instrument, questionnaires were administered to some second, third and fourth year student nurses who met the inclusion criteria and two nurse educators. None of those who participated in the pre-testing of the instrument were included in the final data collection. Once the suggestions and limitations were reviewed, the final instrument was constructed under the supervision of the supervisors of the study and with the support from a professional statistician.

3.5.4 Administration of the questionnaires

The data collection took place on 8 to 11 December 2009. A schedule for the dissemination and collection of the instrument was given to the person in charge.

- After permission was granted to access the second, third and fourth year student nurses, the researcher met face to face with those who agreed to participate and the purpose and objectives of the study were highlighted, and the benefits of the research, as well as how privacy and confidentiality would be maintained. Those who agreed to participate were given informed consent forms to sign. The coordinator was provided for distribution of the questionnaire and handing over of the completed ones to the researcher.
- The third year student nurses at one of the clinical facilities assembled in the hospital conference room, where the questionnaires were distributed and collected the following morning.

- During the following day, the second year student nurses in another clinical facility assembled in the classroom of the hospital nursing school where questionnaires were distributed; these were completed in the student nurses' spare time and collected the following day.
- The fourth year student nurses were in the college for their end-of-the-year research presentation. They assembled in a classroom where they were requested to fill in the questionnaires, and the completed questionnaires were later collected.
- The questionnaires for nurse educators were administered to all respondents who met the inclusion criteria and the researcher requested them to complete the questionnaires and submit within 24 hours.
- The coordinator then handed the completed questionnaires over to the researcher.
- The number of returned completed questionnaires was 106 from the student nurses and 9 from the nurse educators.

3.6 VALIDITY AND RELIABILITY

3.6.1 Validity

Validity of a research instrument is determined by its ability to accurately measure what it is supposed to measure (LoBiondo-Wood 2006:338). The research instrument is valid if it reflects the concept it is supposed to measure. The important aspects of validity are content, face and construct.

3.6.1.1 Content validity

Content validity represents the universe of content which provides the framework and basis for formulating the items that will be adequate to represent the content (LoBiondo-Wood & Haber 2006:338).

3.6.1.2 Face validity

Face validity is concerned with how the research instrument appears to the respondents (Bless & Higson-Smith 2000:133). According to LoBiondo-Wood and Haber (2006:338), face validity in tool development determines the readability and clarity of the content.

3.6.1.3 Construct validity

Construct validity relates to the ability of the research instrument to measure the theoretical constructs it purports to measure (Burns & Grove 2001:230). Content validity was ensured by the conducting of the literature review on the researcher's area of study in order to ensure that all the different aspects were covered in the questionnaire. Supervisors of this study with research experience as well as the professional statistician assisted the researcher in formulating the questionnaires, and they were given to an independent expert and a statistician to evaluate the face validity, content validity and construct validity and to check for conceptual and investigative bias.

3.6.2 Reliability

Reliability of the data collection instrument is determined by its ability to yield the same results each time it is repeatedly applied to the same objects (Babbie 2004:141). De Vos (2005:162) adds that reliability is stability or consistency of the measurement. If the same variable is measured under the same conditions, a reliable instrument produces identical measurement and the measuring instrument is able to yield consistent numerical results each time it is applied (Burns & Grove 2001:396). Reliability of the questionnaire was ensured by accurate and careful phrasing of each question to avoid ambiguity. Pre-testing of the instrument ensured accuracy and dependability of the instrument. Section D of the questionnaire for students was tested for internal consistency during data analysis. Cronbach's Alpha value was calculated. The acceptable value obtained was 0.617. A good reliability is >0.8 to <1.0 .

3.7 DATA ANALYSIS

According to Polit and Beck (2008:751), *data analysis* is the "systematic organisation and synthesis of research data, and in quantitative studies, the testing of the hypothesis

using those data". The purpose of data analysis is to reduce, organise and give meaning to data (Burns & Grove 2001:794).

In this study, a statistician analysed the data using the SPSS Version 14.0 computer program. The analysis included descriptive statistics, cross-tabulation and logistic regression. Descriptive statistics allow the researcher to organise the data in ways that give meaning and facilitate insight and to examine a phenomenon from variety of angles. Descriptive statistics include frequency distributions, measurements of central tendency, measurement of dispersion and standardised scores (Burns & Grove 2001:795). Cross-tabulation is a calculation of frequencies for two or more variables considered simultaneously (Polit & Beck 2008:751). According to Burns and Grove (2003:337), logistic regression is used to predict values of a dependent variable measured at the ordinal level.

In this study, descriptive statistics were used to describe and summarise data obtained from the structured questionnaires in order to answer the research question. The results were presented in frequencies, percentages, graphs and tables (see details under chapter 4).

3.8 ETHICAL CONSIDERATIONS

In order for a researcher to maintain high standards of research, expertise and diligence are not enough; integrity and honesty are of the utmost importance (Burns and Grove 2001:191). Ethical considerations in research are also essential to generate sound knowledge for practice. To ensure that ethical considerations were maintained in this research, the research proposal was submitted for approval to the Research and Ethics Committee at the Department of Health Studies at the University of South Africa prior to the commencement of the study, as well as to the Research Ethics Committee in the Limpopo provincial Department of Health and Social Development.

In research, there are moral principles governing the manner in which the research takes place. According to the Belmont report, as stated in Polit and Beck (2008:170), there are three primary ethical principles upon which standards of ethical conduct are based. These are beneficence, respect for human dignity and justice. The human rights of all respondents were protected in accordance with the primary ethical principles. The

principles are consistent with the guidelines outlined in Burns and Grove (2001:194), the individual's right to self-determination, privacy, anonymity and confidentiality. These ethical measures are also consistent with those set out by the (Democratic Nurses Organisation of South Africa (DENOSA) 1998:2.3; Stommel and Wills (2004:373). Detailed discussions regarding ethical considerations also appear in Holloway and Wheeler (2002:47); De Vos et al (2002:76); Burns and Grove (2003:166). The scope of this principle and its application in this study were as follows:

3.8.1 Principle of beneficence

The ethical principle of beneficence is the most fundamental ethical principle and it refers to at least "doing no harm", or the ability of the researcher to refrain from exploiting the study participants, but to rather promote both individual and societal benefits (Stommel & Wills 2004:377).

3.8.1.1 The right to protection from exploitation

The researcher concluded that in this study exploitation appeared to be a very minute risk because respondents were assured that the information obtained would not be used against them. The risk/benefit ratio of the study was considered, and the conclusion was reached that the benefits outweighed the risks. The nursing profession and in particular the institutions that offer nursing programmes will benefit from the findings and recommendations of this study (see 1.11: significance of this study).

The researcher ensured that the respondents were debriefed prior to commencement of the study in order to allow the respondents to have time for clarity-seeking questions, and the respondents were further informed that their participation was voluntary and that they were free to withdraw at any time if they so wished without fear of losing any benefits. The questions were also phrased in such a way that respondents could not be identified and that the questions could not impose harm.

3.8.1.2 Right to freedom from harm and discomfort

Discomfort and harm may be physical, spiritual, economic, social or legal (Polit & Beck (2006:87). This right was protected by conducting the study in a safe environment in the

selected nursing campus and the clinical facilities approved for placement of students. The questionnaires, with the assistance of the supervisors of this study, were carefully framed so that harm of any nature would be avoided.

3.8.2 Respect for human dignity

The researcher held the belief that respondents were human beings who had the right to make their own decisions and express their personal opinions (Polit & Beck 2006:88). This principle was maintained by withholding the identities of all respondents. This principle involves the right to self determination (autonomy) and the right to self disclosure.

3.8.2.1 *The right to self determination*

The respondents were informed that their participation was voluntary. Respondents were given the opportunity to consent to take part in the study and were assured that they could cease participating at any time without stating the reasons and without incurring any negative consequences (Polit & Beck 2006:88-89). Anonymity was ensured by stating in the letter that the data obtained from respondents might be reported in scientific journals, but would not disclose any information that could identify any of the respondents, because code numbers were used instead of names.

3.8.2.2 *The right to full disclosure*

Brent (1990), Nusbaum and Chenitz (1990) and Rosse & Krebs (1999), cited in Burns and Grove (2001:206), indicate that for conducting ethical research it is essential to obtain informed consent from human participants. An informed consent letter was developed by the researcher which contained information on the title, purpose and objectives of the study and the rights of respondents in the study. These letters were given to each respondent, and they were requested to read and sign the letter of consent once they had agreed to participate, but that there would be no discrimination towards those who wished not to participate (Polit & Beck 2006:88). This was stated to ensure that respondents participated voluntarily; and the full nature of the research, the responsibilities of the respondents and the possible risks and benefits were disclosed.

3.8.3 Principle of justice

The principle of justice refers to the right to privacy and fair and equal treatment to all respondents of the research (Polit & Beck 2006:90).

3.8.3.1 *The right to privacy*

With regard to the ethical responsibility of the researcher towards the respondents in this study, each respondent was treated with respect and dignity. In the light of the confidential nature of the information of this study, and the possible legal consequences of any breach of confidentiality, the researcher maintained a high professional standard regarding all issues of confidentiality. Data collected was within the scope of this research. The collected data was not shared with outsiders except people who were involved in this research. The respondents were informed that the research findings would be published without linking the findings to individual respondents.

3.8.3.2 *The right to fair and equitable treatment*

The respondents' right to fair and equitable treatment was ensured by:

- Approaching all the students in their second, third and fourth year level of study at a selected campus of a nursing college in the Limpopo province to participate
- Approaching all the nurse educators responsible for facilitation of learning at a selected campus of a nursing college in the Limpopo province to participate
- Using selection criteria which were in line with the purpose and the objectives of the study

3.9 CONCLUSION

This chapter discussed the research design and methodology that guided this study. The next chapter will present data analysis and the research findings.

CHAPTER 4

Results and discussions

4.1 INTRODUCTION

The previous chapter described the methodology of this study. The focus of this chapter is on presentation and description of the results. The purpose of this study was to explore and describe the factors that affect theory-practice integration of student nurses at a selected campus of a nursing college in the Limpopo Province.

The objectives of the study were to:

- Explore and describe the factors that affect theory-practice integration as viewed by the student nurses at a selected campus of a nursing college in the Limpopo province.
- Explore and describe the factors that affect theory-practice integration as viewed by the nurse educators at a selected campus of a nursing college in the Limpopo province.

4.2 DATA COLLECTION

The data for the student nurses was collected by means of structured questionnaires except three open ended questions. The questionnaire for student nurses comprised of five sections:

Section A: Responses on demographic profile

Section B: Responses on educational background

Section C: Responses on theory-practice integration

Section D: Responses on learning preferences

Section E: Responses on assessment

The data for the nurse educators was collected by means of structured questionnaires except nine open-ended questions. The questionnaire for nurse educators comprised of four sections:

Section A: Responses on demographic profile

Section B: Responses on theory

Section C: Responses on practice

Section D: Responses on assessment

The population in this study consisted of student nurses enrolled for the four year comprehensive programme at a selected nursing campus of a nursing college in the Limpopo province and nurse educators responsible for the facilitation of learning. A sample of 106 student nurses in their second (n=36), third (n=30) and fourth (n=40) year level and (n=9) nurse educators responded.

4.3 RESULTS

A statistician analysed the data that was captured of the 106 completed questionnaires from the student nurses and 9 from the nurse educators using the SPSS version 14.0 computer program. The results were presented in frequencies, percentages, graphs and tables. The results of the second, third and fourth year students were combined except in section 4.3.6.1 to 4.3.6.2 where cross tabulation amongst the three levels was reflected. The statistician supplied results in fractions for example item 4.3.1.1. The ages of students were between 16-19 (3.8%) years and for this study it was rounded off to 4%. This implies that all the results were rounded off to whole percentages. Section D of the questionnaire was subjected to the reliability test using Cronbach`s Alpha value. Comparison of the mean scores for each factor of the learning preferences in section D of the questionnaire was performed using Analysis of variance (ANOVA) technique and non-parametric methods, namely the Wilcoxon/Kruskal-Wallis test (see details under section 4.3.8). The conventions for chapter 4 are as follows:

- N=total number of respondents
- n=total number of responses
- f=frequencies

4.3.1 Student nurses: Section 1 – Biographic information

In this section, the biographic information of student nurses was required. This includes the ages, gender and first language of students.

4.3.1.1 Age groups of student nurses

In this sub-section, the ages of the respondents were indicated.

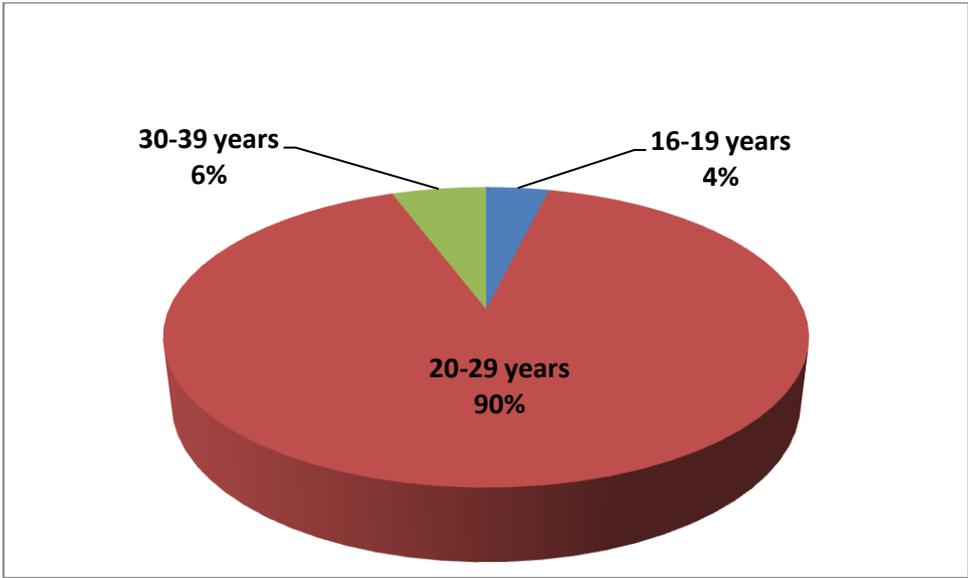


Figure 4.1 Responses on age groups of student nurses (N=106)

Four percent (n=4) of the student nurses were between the age of 16-19 years, 90% (n=96) between 20-29 and 6% (n=6) between 30-39 years. The findings reveal that the majority namely, 90% of the student nurses were in their transition from late adolescent to early adulthood which is something to be considered in the learning situation (SANC1992:6). According to the SANC (2009(a)), the average age of students who commenced their training in 2009 was 26, with a minimum age 17 and 55 as the maximum age. Salamonson and Andrew (2006:342) are of the opinion that age and ethnicity are known to be predictors of academic achievement.

4.3.1.2 Gender of student nurses

In this sub-section the gender of student nurses are indicated.

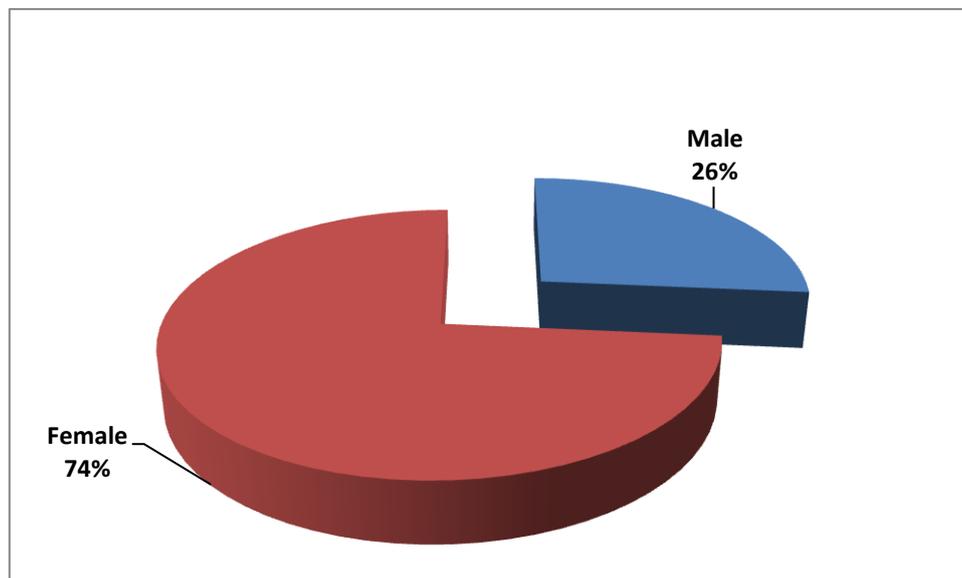


Figure 4.2 Responses on gender of student nurses (N=106)

The findings indicated that 26% (n=28) of the student nurses were males and 74% (n=78) were females. According to SANC's (2009(b)) national statistics, student nurses who were enrolled for the four-year comprehensive programme in 2009 accounted for 13342 females as compared to 3835 males. In the Limpopo province alone, 1232 of the students enrolled for the four-year comprehensive programme were females as compared to 480 males. The findings reveal that although there are males who enter into the nursing profession, nursing is still regarded as a female dominated profession. This is consistent with the views of Muldoon and Reilly (2003:93).

4.3.1.3 First language of student nurses

This sub-section investigated the most prominent or home language of the respondents.

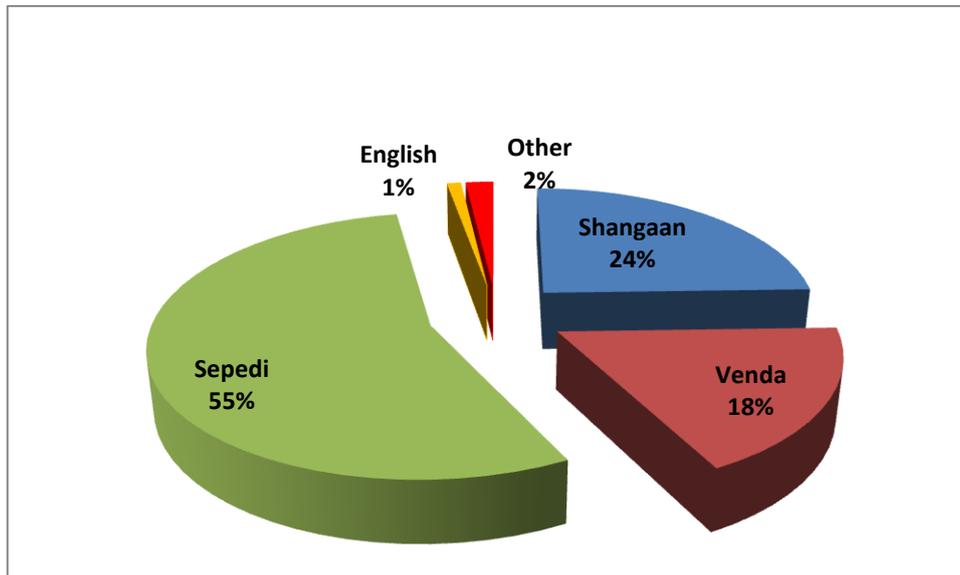


Figure 4.3 Responses on first language of student nurses (N=106)

This study revealed that 24% (n=26) of the student nurses' first language was Shangaan, 18% (n=19) were Venda speaking, 55% (n=58) Sepedi, 1% (n=1) English and 2% (n=2) other languages. The majority, namely 55% of student nurses indicated that their home language was Sepedi.

These findings are supported by Van Rensburg (2009:184) who indicates that English in South Africa is the medium of instruction in higher education and that most students are taught in a language other than their first language. The research findings in a study conducted by Zollo (1998) as cited in Salamonson and Andrew (2006:342) revealed that student nurses from non-English speaking backgrounds were likely to underperform and show high failure rates in their first year of nursing training.

4.3.2 Section B: Educational information

The educational information as revealed in this study is described below. This include the previous nursing qualifications obtained before commencing with the four-year comprehensive training, the levels in which respondents were during this survey, the questions whether they failed subjects, the subjects failed during their training and the reasons why the respondents perceived for being unsuccessful in the theoretical and practical components of the four-year comprehensive programme.

4.3.2.1 Previous nursing qualifications

This sub-section investigated whether the respondents had any previous nursing qualifications prior to their enrollment for the four-year comprehensive programme.

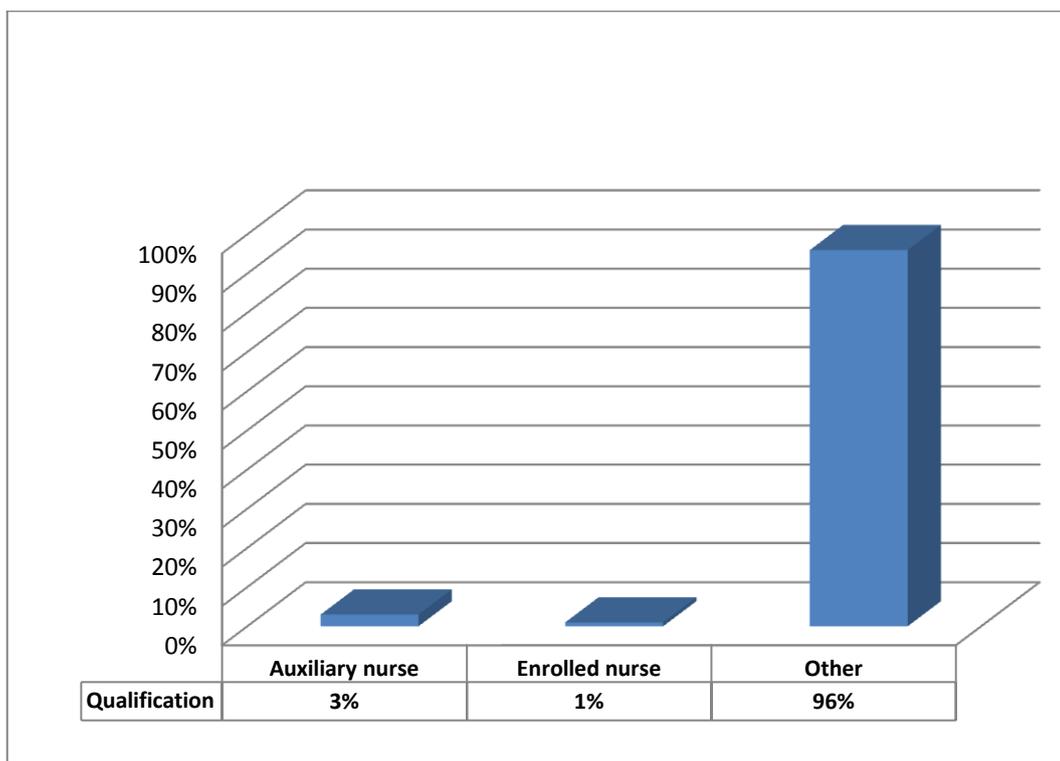


Figure 4.4 Responses on previous nursing qualifications of student nurses (N=106)

In this study, 3% (n=3) of the student nurses had previous qualifications as auxiliary nurses, 1% (n=1) as an enrolled nurse and 96% (n=102) indicated no other qualifications. The implication of these findings indicates that the majority, namely 93%

of student nurses who accessed the four-year comprehensive programme did not possess any past experiences of nursing.

4.3.2.2 Level of study

This sub-section reports on the level on which students were during the administration of the questionnaire.

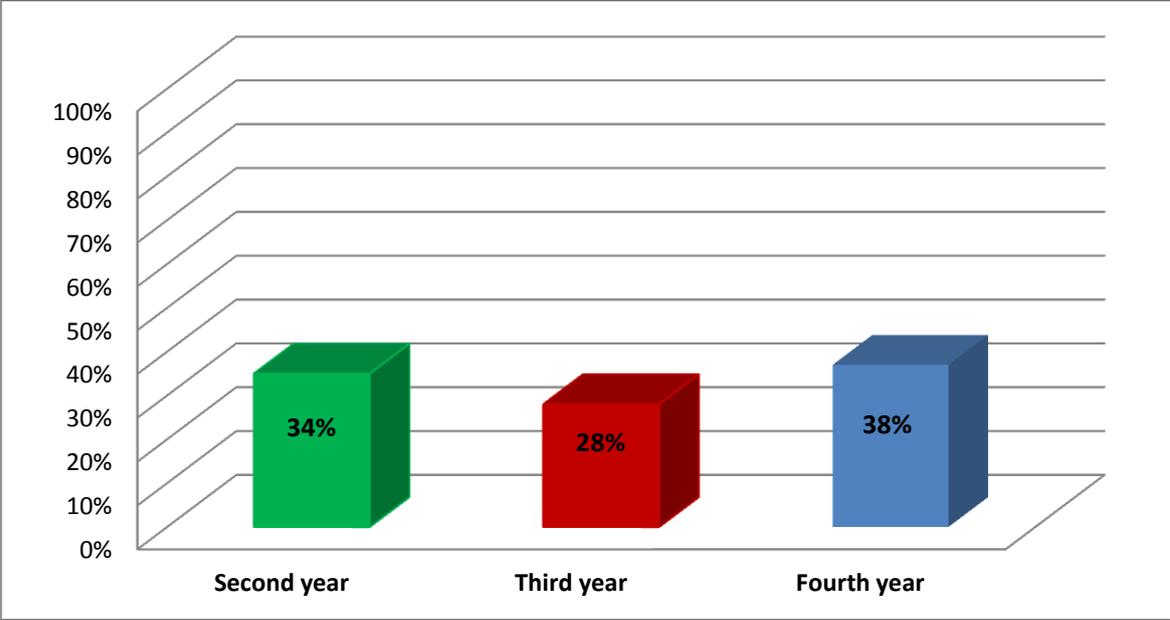


Figure 4.5 Responses on level of study of student nurses (N=106)

In this study it was found that 34% (n=36) of the student nurses were in their second level of study, 28% (n=30) in their third year and 38% (n=40) in their fourth level. Many, namely 38% of the student nurses indicated that they were in their fourth year of study. The student nurses commenced training in 2008, 2007 and 2006 respectively. It is assumed that they all had adequate exposure to both theory and practice and would have been able to respond to the questions in the questionnaire with insight.

4.3.2.3 Failure of subject(s)

This sub-section reveals whether the respondents failed subjects or not.

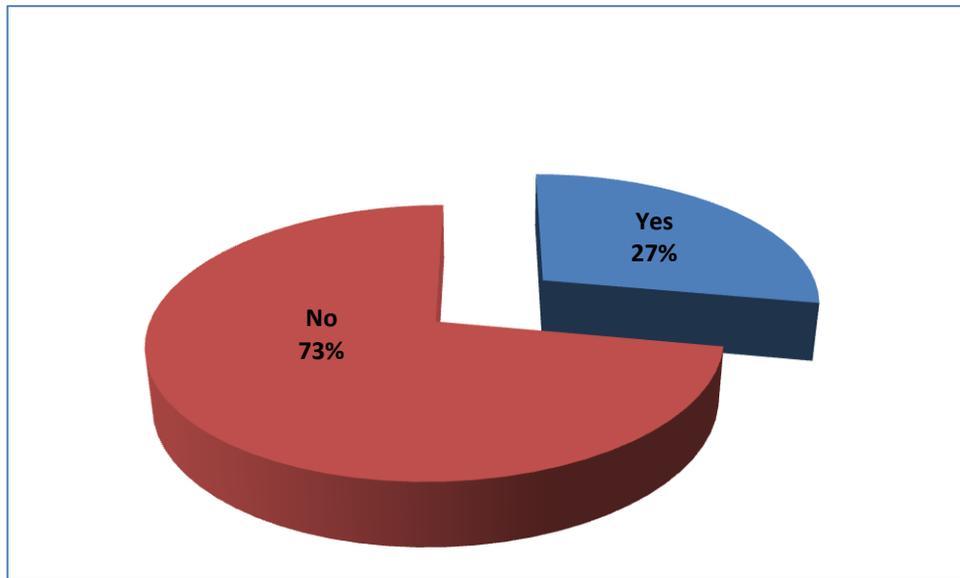


Figure 4.6 Responses of student nurses on failure of subjects (N=106)

Of the respondents, 27% (n=29) indicated that they have failed whilst 73% (n=77) indicated that they never failed any subjects. The majority, namely 73% of the student nurses indicated never failing a subject.

4.3.2.4 Subjects failed

In this sub-section, the respondents had to indicate the subjects in theory and clinical components of the four-year comprehensive programme that they failed. Of the total of respondents (N=29), 44 responses were given.

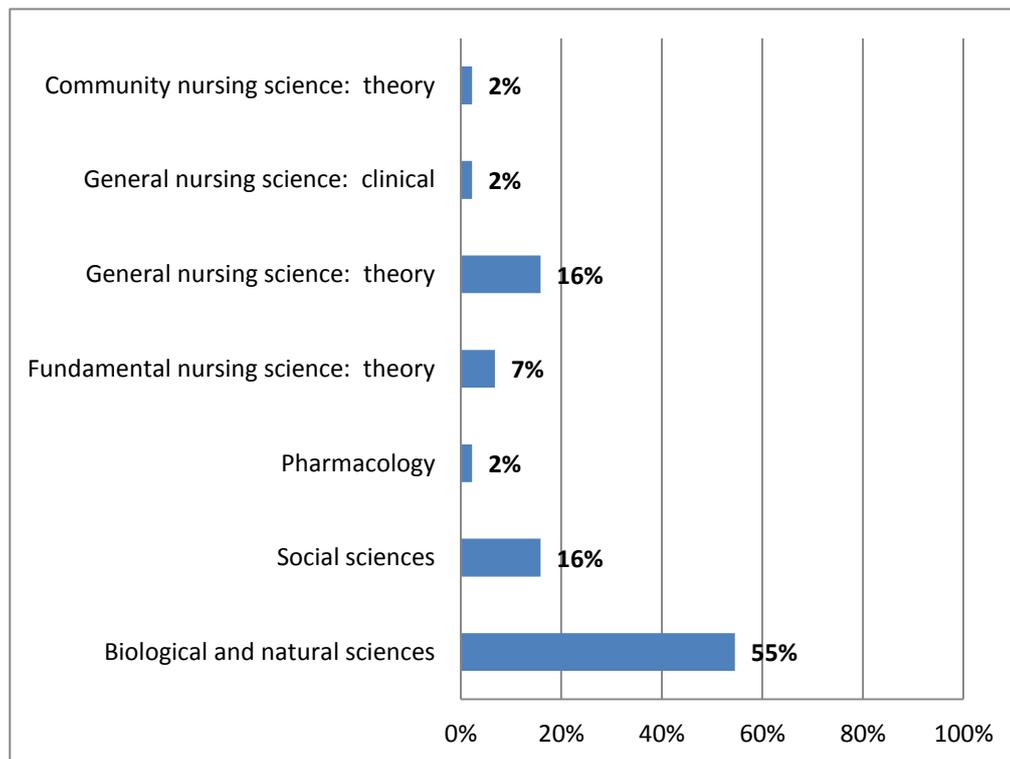


Figure 4.7 Responses of student nurses on subjects failed (n=29)

Of the student nurses (n=29) who indicated to have failed a subject or subjects, 55% (n=24) had failed biological and natural sciences, 16% (n=7) indicated having failed in social sciences, 2% (n=1) indicated failure in pharmacology, 7% (n=3) indicated failing in fundamental nursing science theory, and 16% (n=7) indicated failure in general nursing science theory.

Of the respondents, 2% (n=1) indicated having failed in general nursing science clinical and 2% (n=1) indicated failing in community nursing science theory. The majority, namely 55% of the student nurses had failed biological and natural sciences.

Muller (2001) as cited in Morolong and Chabeli (2005:41) indicates the importance of understanding biological and natural science because these sciences are the foundation for understanding the science and art of nursing. Barry (2009:433) indicates that subjects such as anatomy are unavoidable for example in specialist areas such as theatre and critical care where student nurses have an opportunity to observe textbook factors whilst patients are being operated. In cardiac surgery for example, understanding of pulmonary catheters involves knowledge of anatomy, physiology,

pathophysiology, cardiopulmonary hemodynamics, electronics and physics (Rauen 2004:46).

4.3.2.5 Reasons for failure of theory

In this sub-section, the respondents were asked the possible reasons for having failed the subjects they indicated in the previous question. Of the total of respondents (N=29), 31 responses were given.

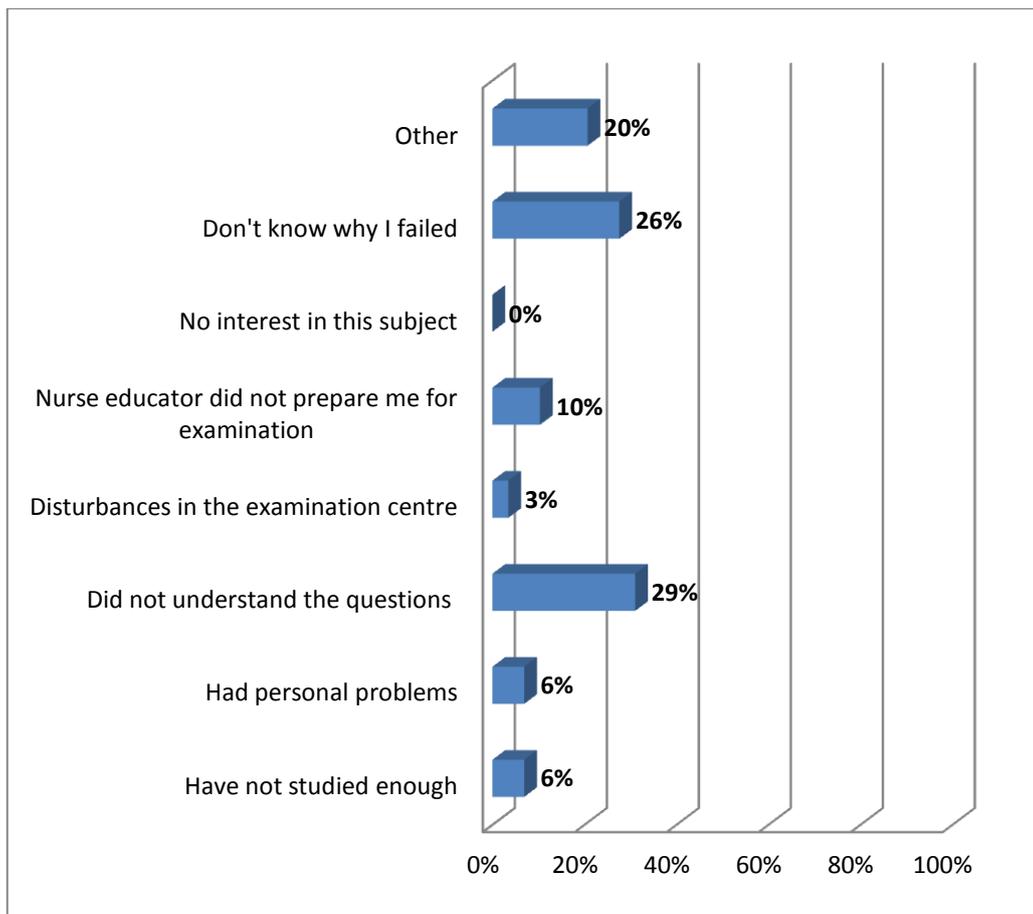


Figure 4.8 Responses of student nurses on reasons for failing theory (n=29)

Of the student nurses who responded to the question, 6% (n=2) indicated the reasons for failing theory as not having studied enough, 6% (n=2) had personal problems, 29% (n=9) did not understand the questions. Three percent of the respondents (n=1) cited disturbances in the examination centre, 10% (n=3) cited that nurse educators did not prepare them for the examination, 26% (n=8) did not know why they failed while 20% (n=6) stated that there were “other” reasons for them failing. Many, namely 29% of the

student nurses indicated that they failed because they did not understand the questions. These findings could be attributed to the fact that the majority, namely 99% of the students are taught in a language other than their first language (see section 4.3.1.3).

These findings are consistent with the results indicated by McGann and Thompson (2008:8) who revealed that one of the problems with regard to examinations are that student nurses spend time thinking about the meaning of questions. In addition, McDowell (2008:183) is of the opinion that the lack of adequate knowledge basis, too much examination anxiety and the lack of test-taking skills might affect the performance of students. Duffy and Hardicre (2007:28) found that there were several aspects that influenced the reasons for failures of nursing students. The most important are that there is often inconsistency in meeting the required level of competence for the stage of training; inconsistent in clinical performance; lack of insight into weaknesses so unable to change following constructive feedback; students who do not respond appropriately to feedback; lack of interest or motivation; limited practical, interpersonal and communication skills; an absence of professional boundaries and/or poor professional behaviour; experiencing continual poor health, feeling depressed, uncommitted, withdrawn, sad, tired or listless; unreliability, persistent lateness/absence; preoccupation with personal issues and a lack of theoretical knowledge.

4.3.2.6 *Reasons for failure of the clinical component*

In this sub-section the reasons for the failure in the clinical component of the programme were investigated. There was only one student who failed the clinical component of the four-year comprehensive programme. This one respondent could select more than one reason for having failed.

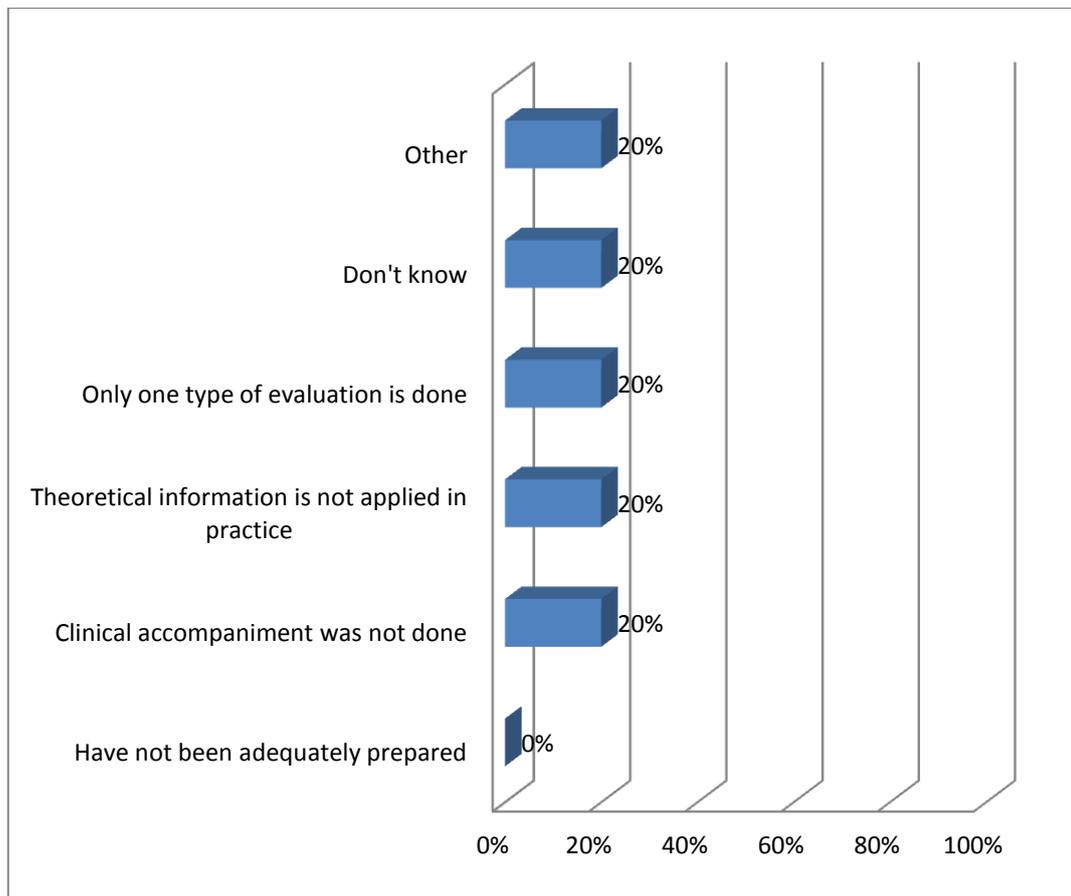


Figure 4.9 Responses of student nurse on reasons for failing the clinical component (n=1)

The respondent indicated the reasons for having failed the clinical component of the programme as that clinical accompaniment was not done, that theoretical information was not applied in practice and that only one type of evaluation was conducted. In addition the respondent also indicated uncertainty as to why he/she failed the clinical component and also stated “other” reasons for having failed the clinical component of the programme. All the aspects were consistently indicated to be contributing to failure of the clinical component.

Kelly (2007:885) reveals that the student nurses’ perception of an effective clinical teacher is one who is competent, provides feedback and has communication skills which contribute to effective clinical knowledge and skills thus leading to successful theory-practice integration.

Ousey and Gallagher (2010:662) argue that countries around the world are encouraging the transition of nursing education from hospital based training to college based

degrees. Students are encouraged to gain clinical experience in congruent with lectures. However, this transition has caused a rift between classroom and clinical practice. What adds to this problem is that there is a widening shortage of nursing faculty. Nurse educators are faced with trying to adequately prepare students for professional practice while also trying to maintain their own clinical credibility to successfully facilitate the learning of students.

4.3.3 Section C1: Theory and practice

This section focused on the theory and practice components of the four-year comprehensive programme. It includes theoretical and clinical practice experiences.

4.3.3.1 Theoretical experiences

In this sub-section, the respondents were required to indicate the subject they were most interested. It contained both the clinical and theoretical components of the four-year comprehensive programme.

4.3.3.1.1 Subjects in which respondents were most interested

This sub-section required that respondents had to indicate which subjects they were most interested in. Of the total of respondents (N=106), 573 responses were given.

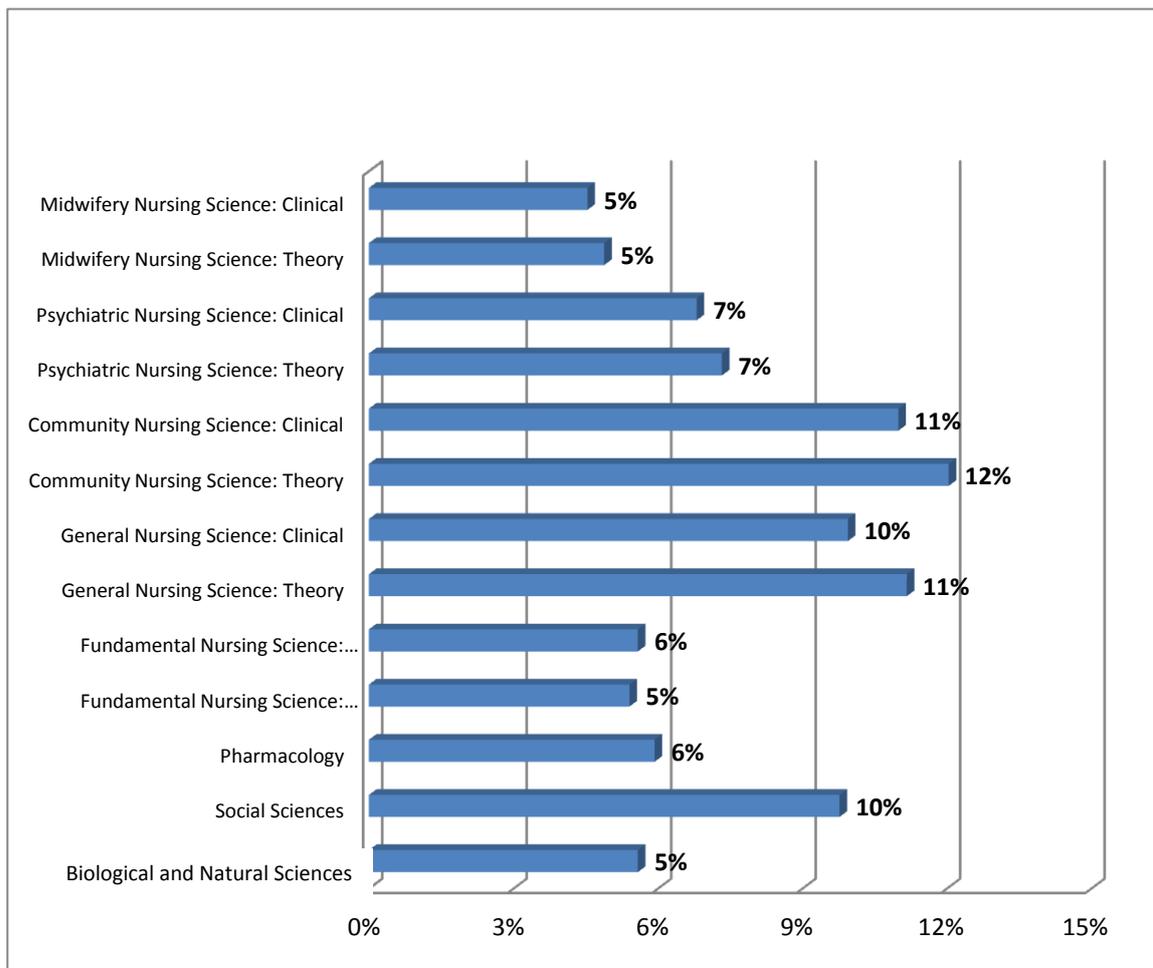


Figure 4.10 Responses of student nurses on subjects in which there is most interest (N=106)

Of the respondents, 5% (n=32) indicated the subjects that they were most interested in as biological and natural sciences, 10% (n=56) indicated social sciences, 6% (n=34) indicated pharmacology, 5% (n=31) indicated fundamental nursing science theory, 6% (n=32) indicated fundamental nursing science clinical, 11% (n=64) indicated general nursing science theory and 10% (n=57) indicated general nursing science clinical. Further, 12% (n=69) indicated community nursing science theory, 11% (n=63) indicated community nursing science clinical, 7% (n=42) indicated psychiatric nursing science theory, 7% (n=39) indicated psychiatric nursing science clinical, 5% (n=28) indicated midwifery nursing science theory and 5% (n=26) indicated midwifery nursing science clinical. Interestingly, the findings reveal that many, namely 12% of the respondents, are mostly interested in community nursing science theory followed by 11% community nursing science clinical and general nursing science theory.

The results were interesting in that it revealed that subjects least interested in were both the theoretical as well as the practical components of midwifery, fundamental nursing science theory and the natural sciences. On the other hand, students seemed to be more interested in the human sciences such as community health nursing and general nursing. In addition, the social sciences seemed to be more significant than other sciences.

4.3.3.1.2 Reasons for interest in these subjects

In this sub-section, the respondents had to provide the reasons why they were more interested in the subjects they indicated in the previous response. Of the total of respondents (N=106), 217 responses were given.

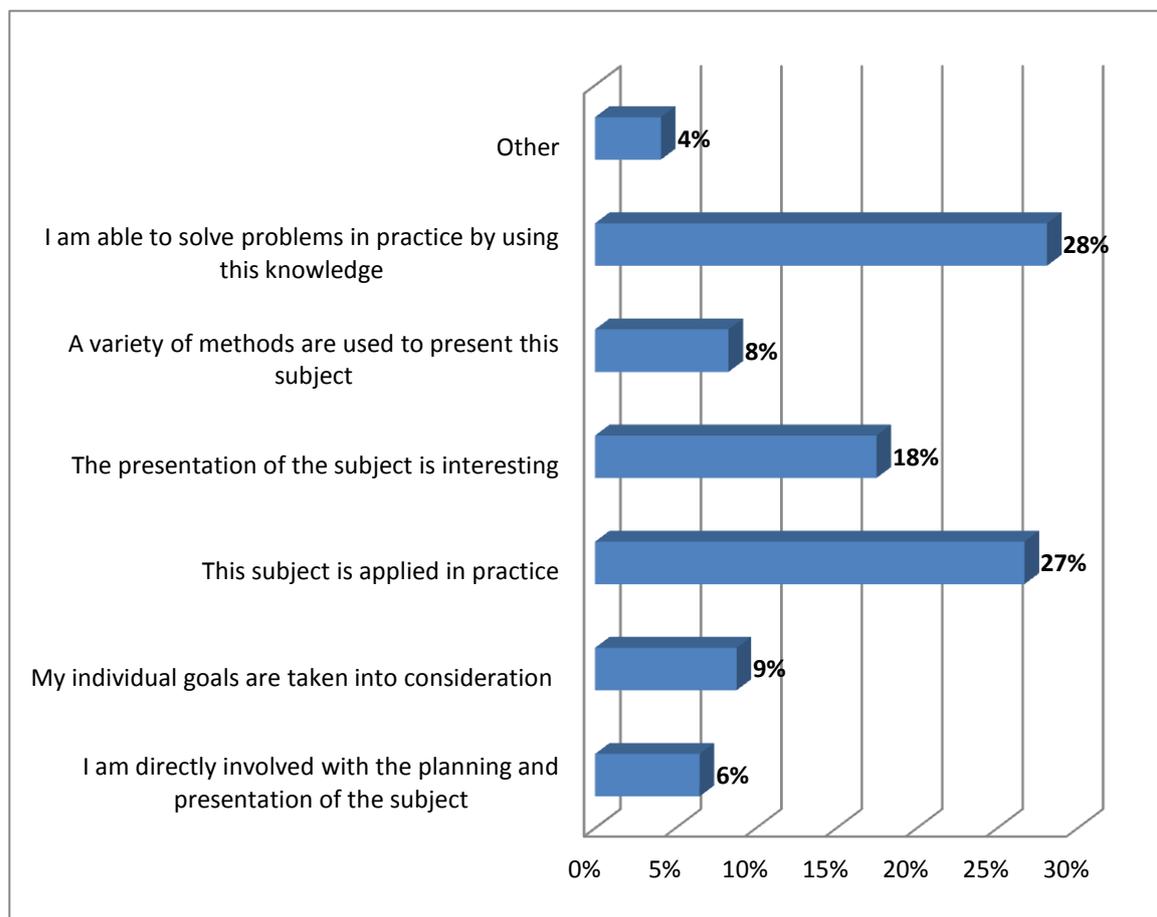


Figure 4.11 Responses of student nurses on reasons for interest in these subjects (N=106)

Of the respondents, 6% (n=14) indicated the reasons for their interest in the subject as that they were directly involved in the planning and presentation of the subject, 9%

(n=19) indicated that their individual goals were taken into consideration while 27% (n=58) indicated that the subjects were applied in practice. In addition, 18% (n=38) of the respondents indicated that the presentation of the subjects were interesting, 8% (n=18) indicated that a variety of methods were used to present the subjects, 28% (n=61) indicated that they were able to solve problems in practice by using the theoretical information taught to them in the college and 4% (n=9) stated “other” reasons for their interest in the subjects. Many, namely 28% of the student nurses, were mostly interested in subjects if they were able to apply the theoretical knowledge to practice.

The results of this study are consistent with the findings in a study conducted by Wolf, Bender, Beitz and Wieland (2004:125) who state that stimulating of the interest of students in a subject are subjected to applying techniques that lead to teaching excellence, the use of various teaching methods and strategies, fair assessment and the approachability/availability of lecturing staff. Andrew and Vialle (2010) state that technological and informational systems are changing so rapidly those occupations are challenged by these developments. Students who engage in self-regulated learning may be those best prepared to meet the challenges of the future, however, these students need to be assisted and supported to facilitate confident, autonomous, inquisitive learners who employ meta-cognitive strategies to learn. Andrew and Vialle (2010) found that students often liked science subjects at school, but are demotivated in further studies often because they perceive the subjects as being “too hard” to study or are not supported during their studies by lecturers.

4.3.3.1.3 Views of the respondents on the nurse educator who teach the subject

In this sub-section the respondents’ feelings towards the nurse educators who taught the subjects were required. Of the total of respondents (N=106), 218 responses were given.

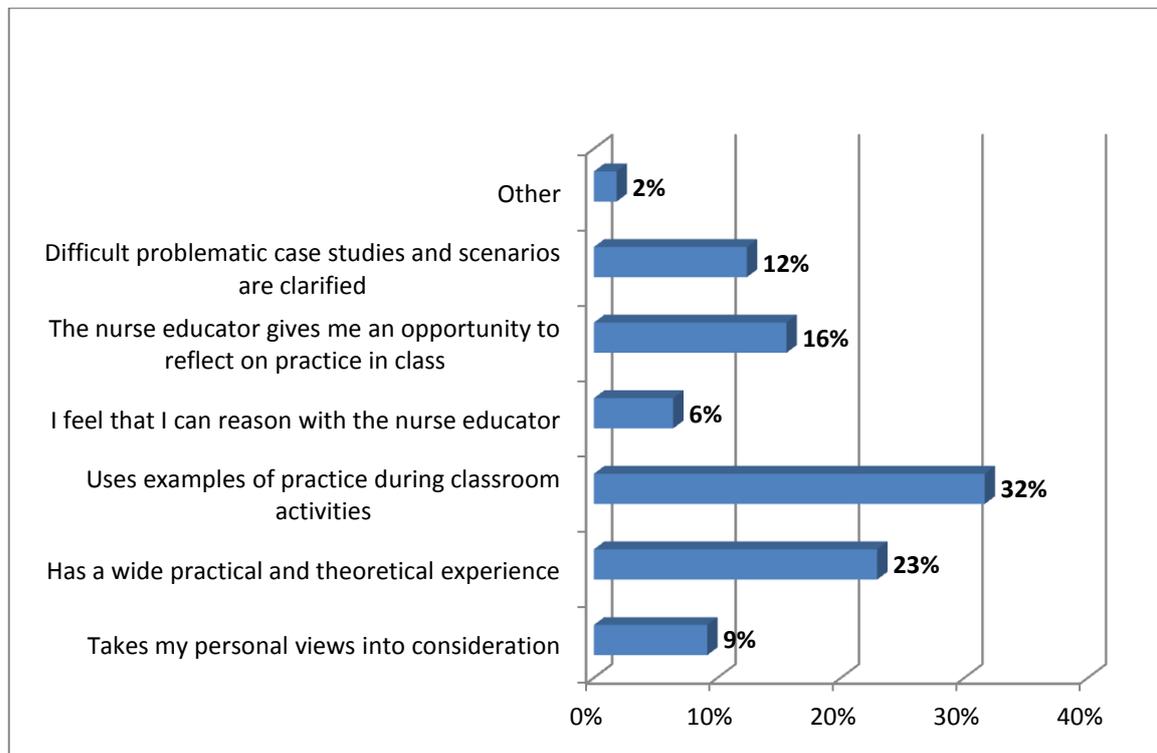


Figure 4.12 Student nurses' views towards nurse educators of these subjects (N=106)

Of the respondents, 9% (n=20) indicated that they are mostly interested in the subjects because the educator takes their personal views into consideration, 23% (n=50) indicated that the nurse educator had both clinical experience and theoretical knowledge on the subjects they teach and 32% (n=69) indicated that the nurse educator used examples of practice during classroom activities. In addition, 6% (n=14) cited of the respondents stated that they could reason with the nurse educator, 16% (n=34) indicated that the nurse educator provided students opportunities to reflect on practice during their theoretical lectures, 12% (n=27) indicated that difficult problematic case studies and scenarios were clarified and 2% (n=4) stated "other" factors. Many, namely 32% of the respondents indicated that nurse educators who use examples of practice during classroom activities encouraged students to be interested in the subject.

These findings are consistent with the findings in section 4.3.3.1.1. In addition, Hanson and Stenvig (2008:40) revealed that the ability of the nurse educator to integrate theory and practice contribute to the quality in nursing education, provides opportunity for critical thinking and provoke interest in the subject.

4.3.3.1.4 Teaching strategies used during theoretical instructions

In this sub-section, the respondents' views regarding the strategies used by the nurse educator during the theoretical component of the programme were provided. Of the total of respondents (N=106), 137 responses were given.

Table 4.1 Responses of student nurses on teaching strategies used by nurse educator during theoretical instruction (N=106)

Teaching strategies used by nurse educator during theoretical instruction	Frequency	Percent
Class trips	11	8%
Field trips	5	4%
Interactive exercises	39	28%
Demonstration	60	44%
Other	22	16%
Total responses	137	100%

Eight percent (n=11) of the respondents indicated the teaching strategies used in theoretical instructions as class trips, 4% (n=5) indicated field trips, 28% (n=39) indicated interactive exercises, 44% (n=60) indicated that teachers used demonstrations and 16% (n=22) indicated "other" teaching strategies. Many, namely 44% of the student nurses cited demonstration as the method mostly used by nurse educators during theoretical instruction followed by 28% who indicated interactive exercises.

Neuman, Pardue, Grady, Gray, Hobbins, Edelstein and Hermann (2009) state that technological advances including the use of simulation have lead to new delivery methods such as e-nursing education and nontraditional delivery methods of teaching. The authors are of the opinion that nurse educators should consider new techniques to their teaching as this will lead to more knowledge and interest in the subjects of students.

These findings are consistent with the strategies as proposed by Knowles et al (2005:198) as methods that enhance the utilisation of concrete experiences and to quality in education.

4.3.3.1.5 Subject that is liked least by respondents

In this sub-section, respondents were required to select the subjects that they least liked. Of the total of respondents (N=106), 193 responses were given.

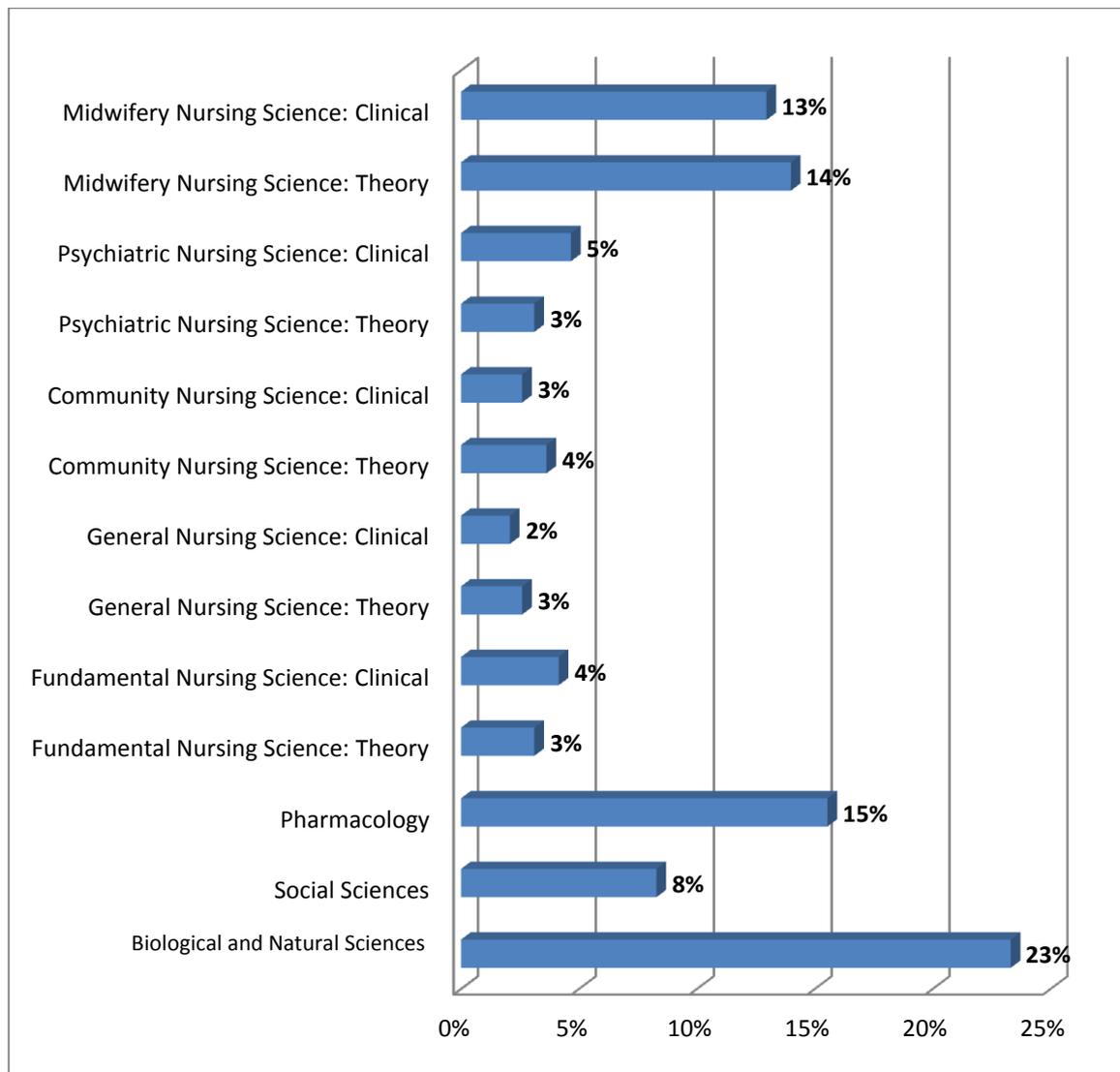


Figure 4.13 Responses of student nurses on subjects that are least liked (N=106)

Of the respondents, 23% (n=45) indicated the subjects that they like least as biological and natural sciences, 8% (n=16) indicated social sciences, 15% (n=30) indicated pharmacology, 3% (n=6) indicated fundamental nursing science theory and 4% (n=8) indicated fundamental nursing science-clinical. In addition, 3% (n=5) of the respondents disliked general nursing science theory, 2% (n=4) indicated general nursing science-clinical, 4% (n=7) indicated community nursing science theory, 3% (n=5) indicated

community nursing science clinical and 3% (n=5) indicated psychiatric nursing science theory. In addition, 5% (n=9) indicated psychiatric nursing science clinical, 14% (n=27) indicated midwifery nursing science theory, and 13% (n=26) indicated midwifery nursing science clinical.

The findings reveal that the majority, namely 23% of the respondents have less interest in biological and natural sciences. The findings are consistent with the findings in section 4.3.2.4 wherein the majority, namely 55% of the respondents indicated biological and natural sciences as the subjects they had failed the most.

4.3.3.1.6 Reasons why student nurses dislike the subject(s)

In this sub-section, respondents were asked to provide reasons for the subjects less interested in. Of the total of respondents (N=106), 170 responses were given.

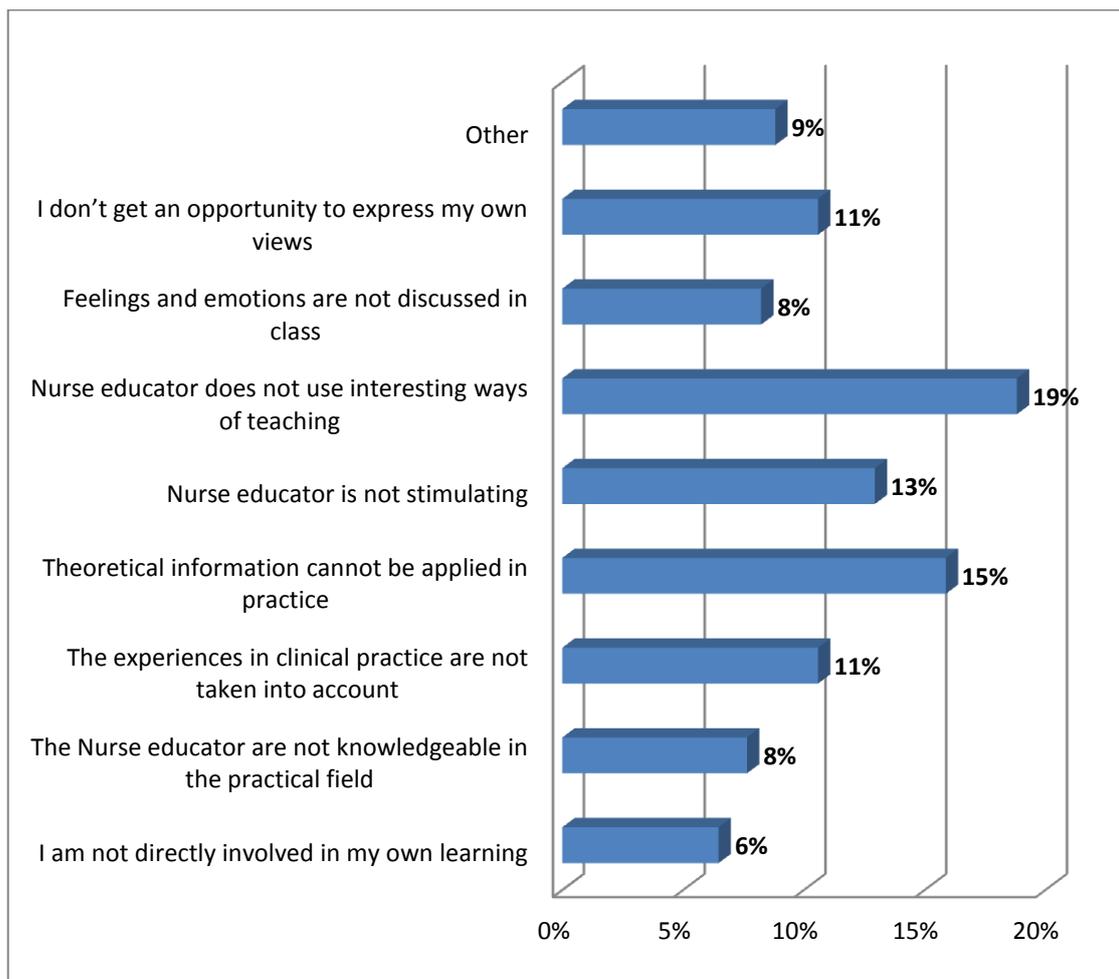


Figure 4.14 Responses of student nurses on reasons for disinterest in these subjects (N=106)

Six percent (n=11) of the respondents indicated the reasons for disinterest/dislike in the subjects as that they are not directly involved in their own learning, 8% (n=13) indicated that they regard the nurse educators as not knowledgeable enough in the practical field and 11% (n=18) of the respondents indicated that their experiences in the clinical practice are not taken into account.

In addition, 15% (n=27) of the respondents indicated that the theoretical information that was supplied by the educators could not be applied in the clinical practice, 13% (n=22) indicated that the nurse educators were not stimulating enough in their presentations, 19% (n=32) indicated that the nurse educators did not use interesting ways of teaching and, 8% (n=14) indicated that their feelings and emotions are not taken into consideration during the theoretical instruction. Of the respondents, 11% (n=18) indicated that they were not given the opportunity to express their own views or participate in the instruction and 9% (n=15) stated “other” reasons for their disinterest in the subject(s).

The findings revealed that many, namely 19% of student nurses were of the opinion that they least like a subject because nurse educators did not use interesting ways of teaching followed by 15% of the respondents who indicated that if theoretical content cannot be applied in practice, the students lost interest in the subject. The findings are consistent with the findings indicated in section 4.3.3.1.3.

The findings of this research correspond with the findings of a study conducted in Iran by Salsali (2005:29) who found that when evaluating the teaching effectiveness of nurse educators, it was found that nursing students preferred lecturers with a high level of knowledge and who used various methods of teaching and evaluation. The findings also indicated that the personality of the educator, clinical experience and the psychological environment were important variables in teaching effectiveness.

4.3.3.2 *Clinical practice experiences*

In this sub-section, the respondents had to indicate whether they passed a proficiency test in the various subjects prior to their placement in the clinical setting.

4.3.3.2.1 *Passing of a proficiency test before placement in the clinical setting*

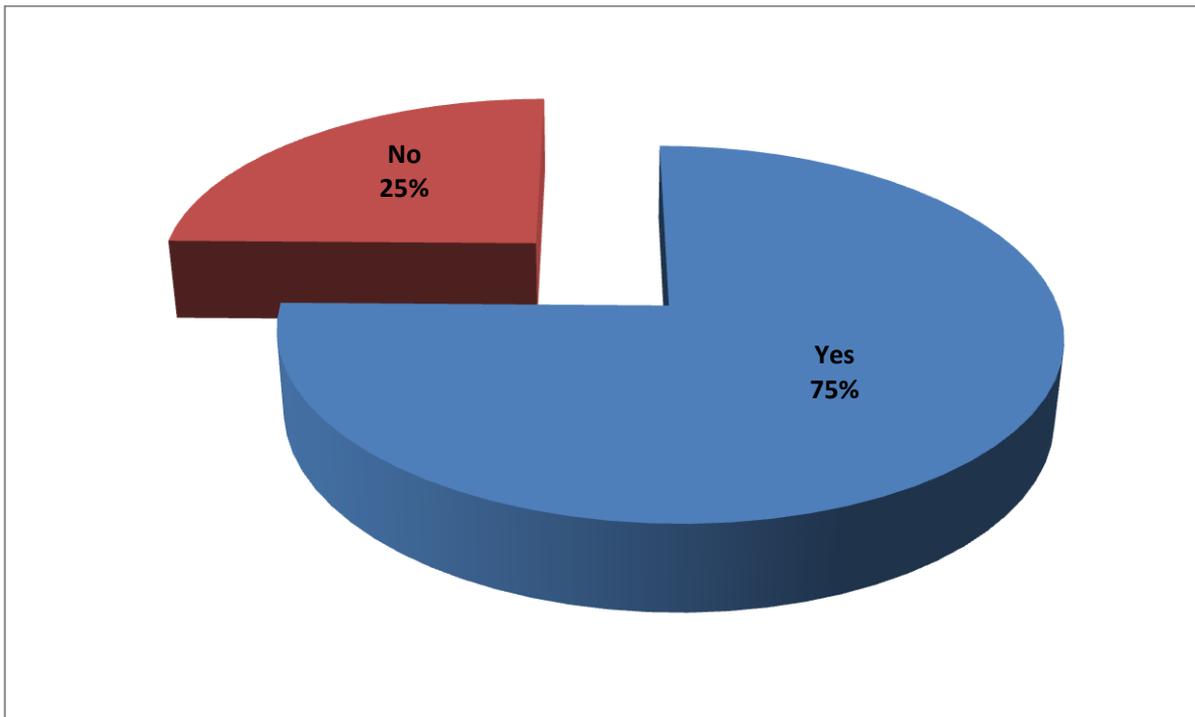


Figure 4.15 Responses of student nurses on whether they passed proficiency test before clinical placement (N=106)

Seventy five percent (n=79) of the respondents indicated that they had passed proficiency tests in the various subjects prior to clinical placement whilst 25% (n=27) indicated that they have not passed such a proficiency test. The study found that the majority, namely 72% of the student nurses had passed the proficiency test.

4.3.3.2.2 *Subjects passed for the proficiency test*

In this sub-section the respondents were given the list of all the subjects of which students could choose from in which they passed a proficiency test. Of the total of respondents (N=106), 297 responses were provided.

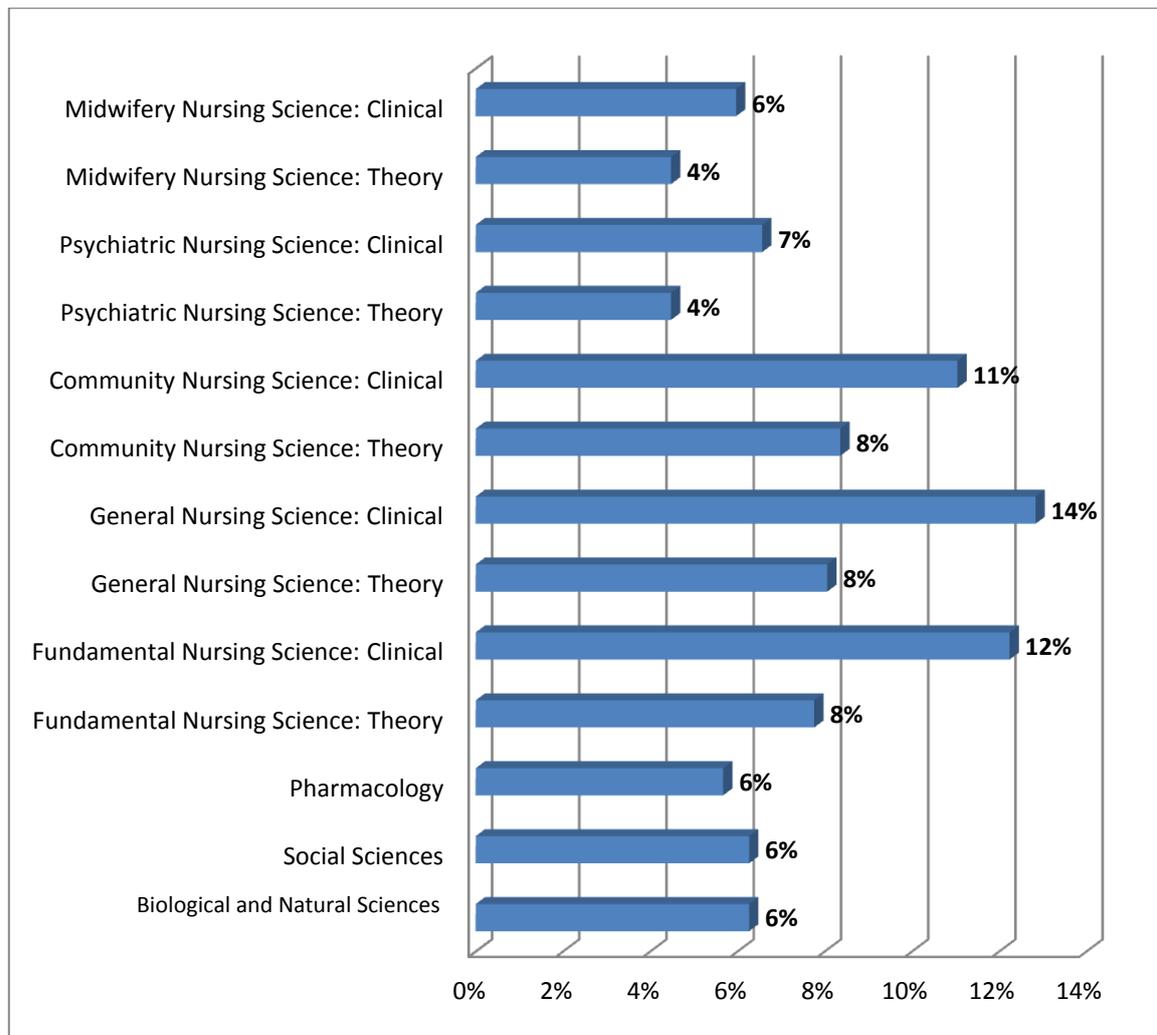


Figure 4.16 Responses of student nurses on subjects passed for proficiency test (N=106)

Six percent (n=21) of the respondents indicated that they passed proficiency tests in biological and natural sciences, 6% (n=21) indicated they passed proficiency tests in the social sciences whilst 6% (n=19) indicated passing proficiency tests in pharmacology. In addition, 8% (n=26) indicated that they passed proficiency tests in fundamental nursing science theory, 12% (n=41) indicated fundamental nursing science clinical, 8% (n=27) indicated general nursing science theory and 13% (n=43) indicated passing proficiency tests in general nursing science clinical. In 8% (n=28) of the respondents, results indicated passing proficiency tests in community nursing science theory, 11% (n=27) indicated passing proficiency tests in community nursing science clinical, 5% (n=1) indicated psychiatric nursing science theory, and 7% (n=22) indicated psychiatric nursing science clinical. Only 4% (n=1) indicated they passed the proficiency test in midwifery nursing science theory and 6% (n=20) indicated midwifery nursing science clinical. The findings reveal that many, namely 13% of the student nurses passed the

proficiency test in general nursing science clinical, followed by 12% in fundamental nursing science clinical and 11% in community nursing science clinical.

In a study conducted by Mayne (2004:30), it was found that although some simulated practice was already being carried out during theory time but a new member of staff suggested a more radical approach. This consisted of replacing one week of actual practice placement with a week of simulated practice, which would be structured to ensure repetitive skills practice. The skills week idea was suggested in the study and appeared to be the best solution to meet the key criterion of ensuring every student could achieve a basic level of proficiency.

4.3.3.2.3 *Orientation to the clinical practice prior to placement in the wards*

In this sub-section, the respondents were asked to indicate whether they were orientated to clinical practice prior to the placement in clinical practice.

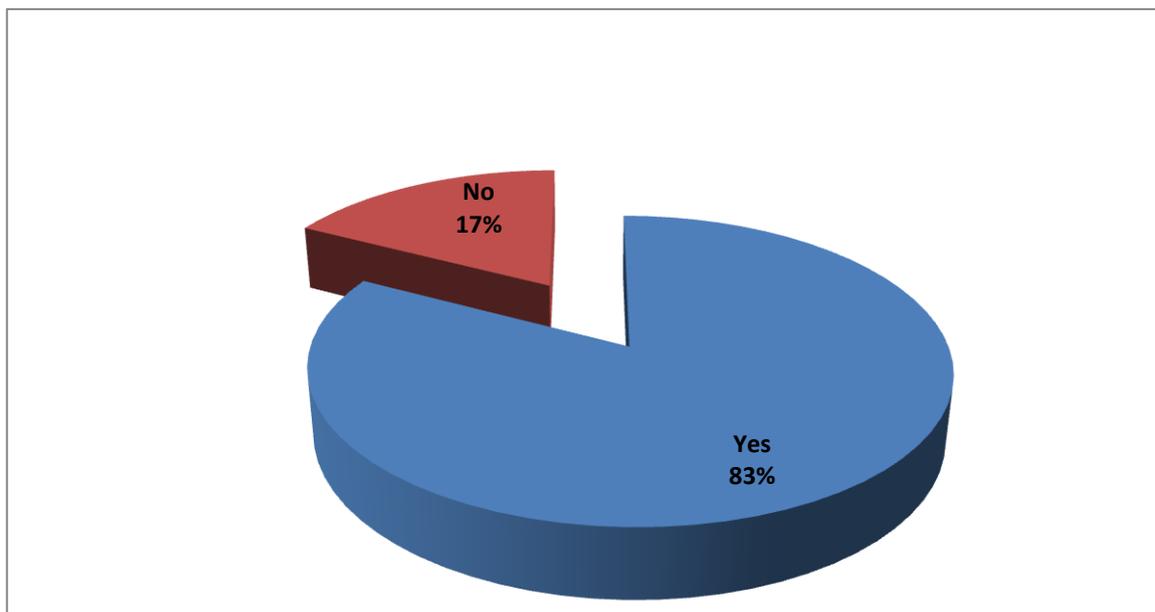


Figure 4.17 Responses of student nurses on orientation to the clinical practice prior to placement in the wards (N=106)

Of the respondents 83% (n=88) indicated that they have been orientated to the clinical practice prior to placement whilst 17% (n=18) indicated that they had not been orientated. The majority, namely 83% of the respondents had been orientated prior to clinical placement. These findings are consistent with the results in a study conducted

by Mochaki (2001:119) who found that student nurses are orientated prior to placement in the clinical areas.

4.3.3.2.4 Person(s) responsible for orientation in clinical placement

In this sub-section the respondents had to point out who orientated them to the clinical practice. More than one response could have been given to this question. In total, 113 responses were given.

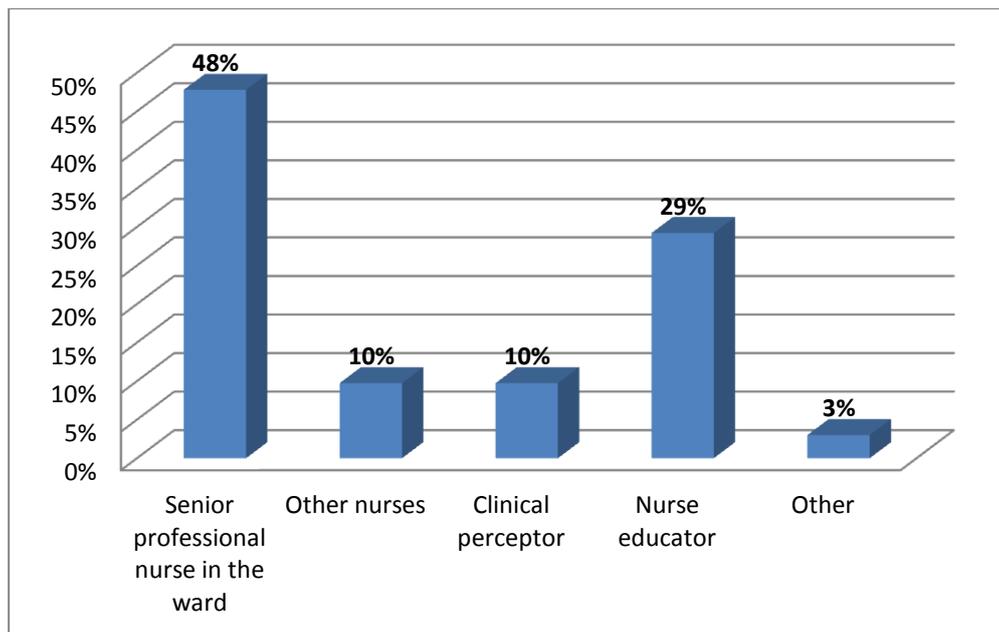


Figure 4.18 Responses of student nurses on person(s) responsible for orientation to the clinical practice (N=106)

Of the respondents, 48% (n=54) indicated senior professional nurses in the wards orientated them to the clinical practice, 10% (n=11) indicated other nurses, 10% (n=11) indicated clinical preceptors, 29% (n=33) indicated nurse educators and 3% (n=4) indicated “other” persons. The findings revealed that many, namely 48% of the student nurses were orientated by the senior professional nurses in the wards.

The findings in this study is inconsistent with those found by Carson and Carnwell (2007:225) who found that orientation was undertaken by nurse educators in order to orientate students to the reality of clinical practice. According to Murathi, Davhana-

Maselesele and Netshandama (2005:18), poor orientation of students in the clinical area is due to poor communication between unit managers and nurse educators.

4.3.3.2.5 Aspects included in the orientation

In this sub-section of the questionnaire, the respondents had to indicate which aspects were included in the orientation to the clinical practice. A total of 253 responses were given by the 106 respondents of the questionnaire.

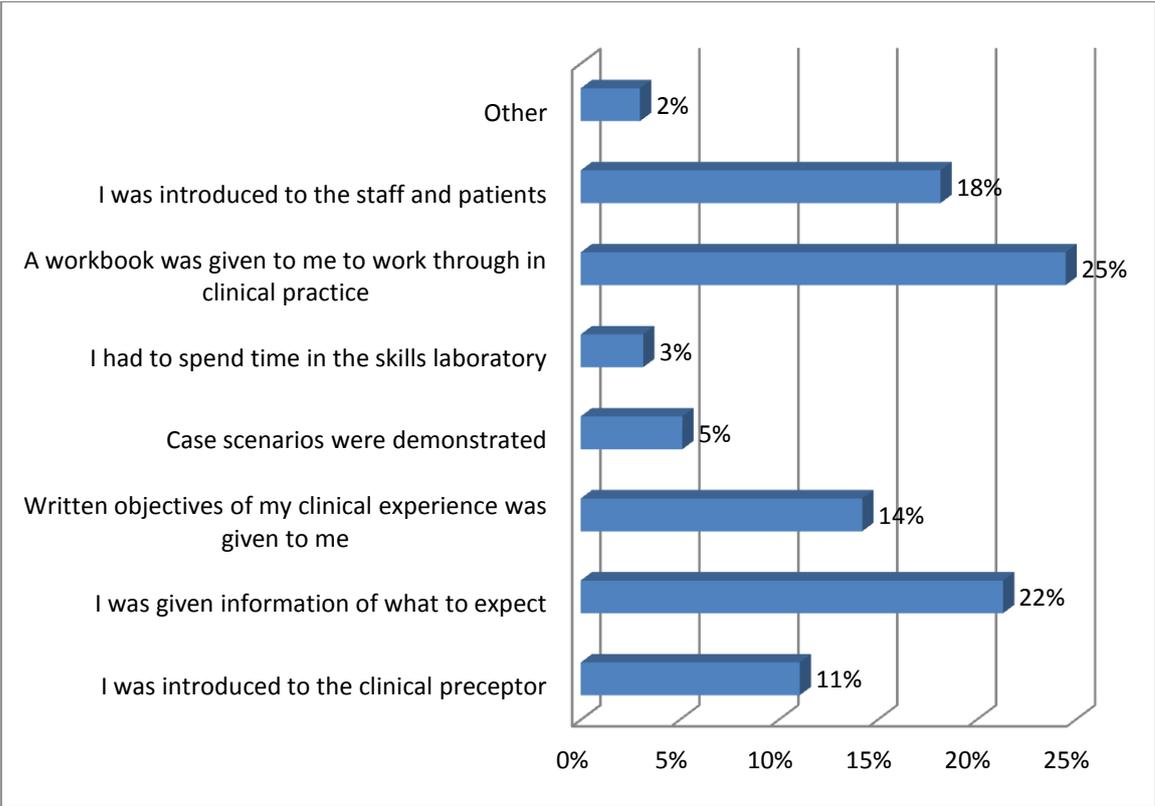


Figure 4.19 Responses of student nurses on aspects included in the orientation (N=106)

Of the respondents, 11% (n=28) indicated that the orientation included being introduced to the clinical preceptors, 22% (n=54) were given information of what to expect, 14% (n=36) were given written objectives of their clinical experience, 5% (n=13) were demonstrated on case scenarios and 3% (n=8) had to spend time in the skills laboratory. In 25% (n=62) of the student nurses, workbooks were given during orientation in order to work through in clinical practice, 18% (n=46) were introduced to the staff and patients and 3% (n=6) stated “other” aspects were included in the

orientation package. Many, namely 25% of the respondents were given workbooks which they were supposed to complete during their clinical placements.

In a study conducted by Chapman and Orb (2000:3), it is stated that clinical practice is an essential part of the student's education. Orientation allows the student the opportunity to link theory with practice of caring for clients. The authors point out that it is widely recognised by those engaged in nurse education that clinical practice is a significant and essential part of a student nurse' education and that a well designed orientation package prevents stress, anxiety and the theory-practice gap in the clinical setting.

4.3.3.2.6 Availability of sufficient resources during clinical practice

In this sub-section, the respondents had to indicate whether there were sufficient resources during their clinical placement.

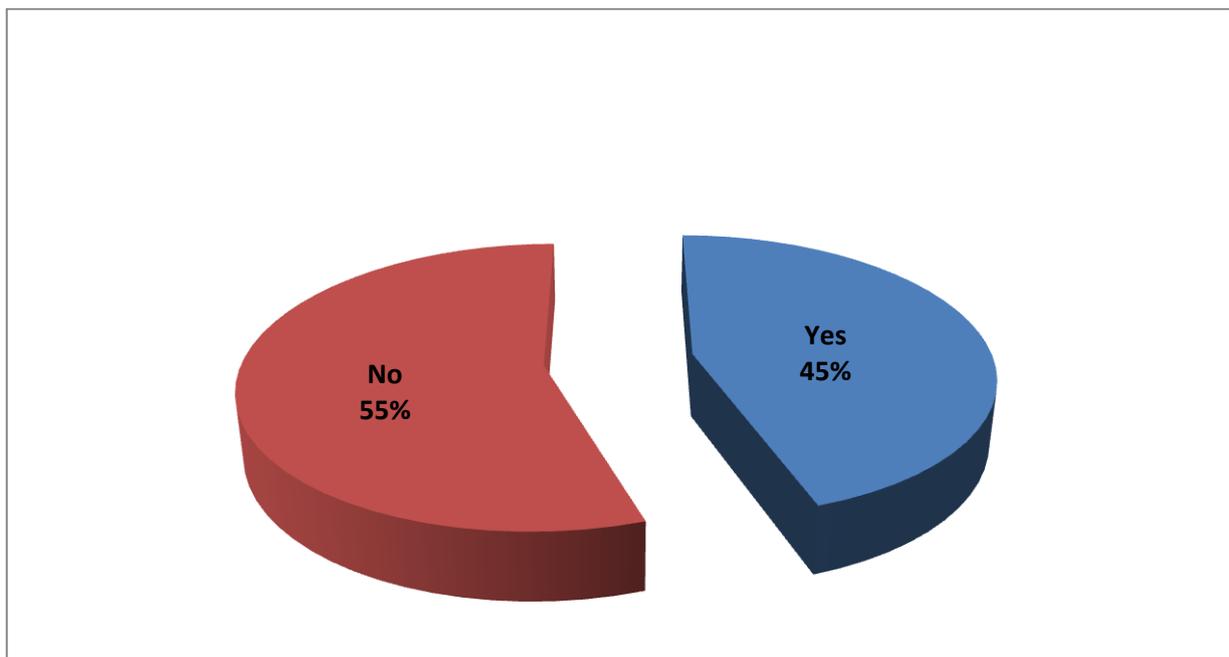


Figure 4.20 Responses of student nurses on availability of sufficient resources during clinical practice (N=106)

Forty five percent (n=48) of the respondents indicated that there was sufficient resources during clinical experience whilst 55% (n=58) indicated that there were insufficient resources. The majority, namely 55% of the student nurses were of the opinion that there were insufficient resources during placement in the clinical practice.

These findings are consistent with the findings of Carlson et al (2003:30), Mhlongo (1996:30) and Moeti, Van Niekerk and Van Velden (2004:72) who all indicate that shortage of resources such as staff, supplies and equipment affected the development of the required competencies of nurses and lead to insufficient learning experiences.

4.3.3.2.7 *Material resources which was not available*

In this sub-section, the respondents could indicate more than one item that they found to be absent or insufficient during their clinical placement. The data analysis revealed 142 responses for this question.

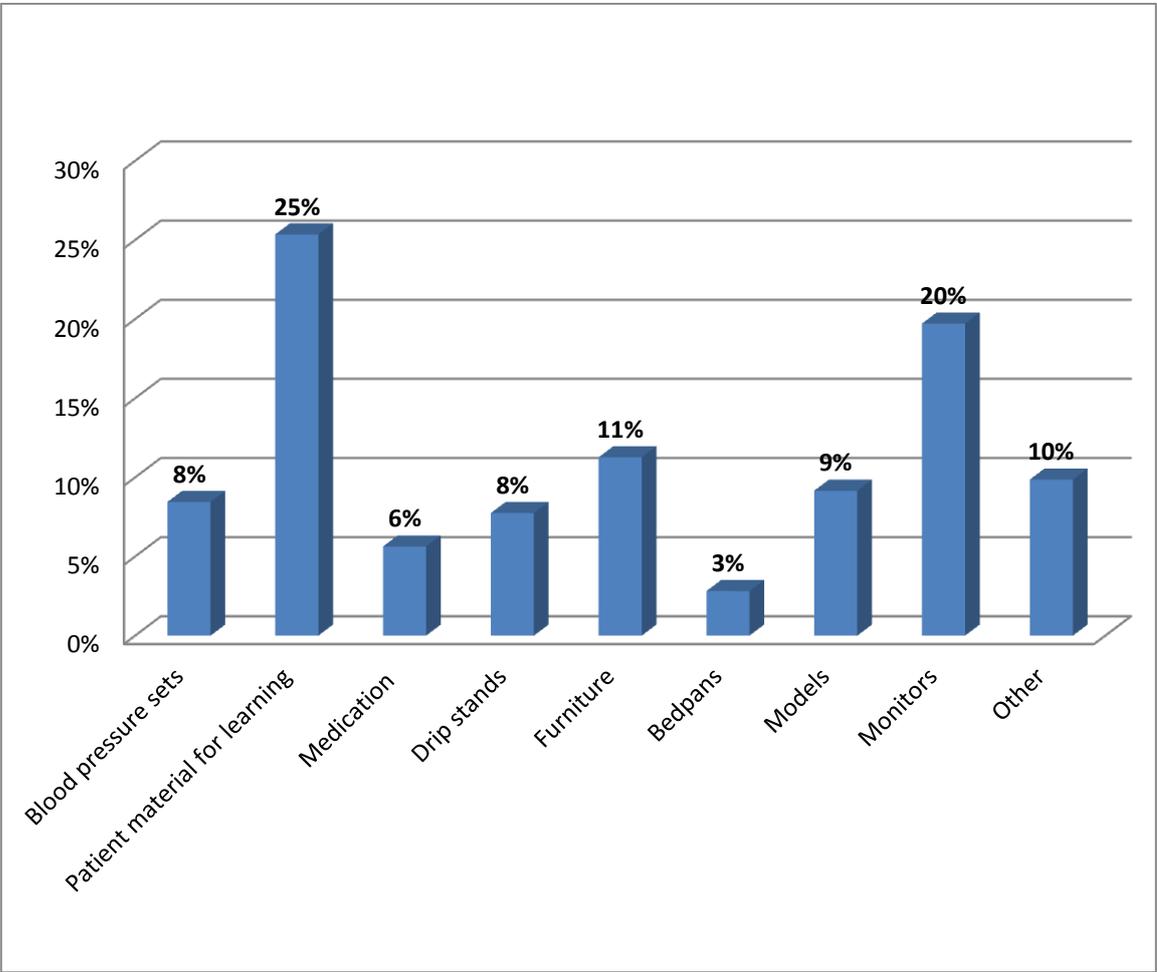


Figure 4.21 Responses of student nurses on material resources which was not available (N=106)

Of the respondents, 8% (n=12) indicated that material resources were not available such as blood pressure sets. In 25% (n=36) of the respondents, patient material for

learning were insufficient, 6% (n=8) indicated insufficient or absence of medication, 8% (n=11) indicated drip stands not being available, 11% (n=16) indicated insufficient furniture, 3% (n=4) indicated that bedpans were unavailable, 9% (n=13) indicated models for simulated learning experiences were not available, 20% (n=28) indicated monitors and 10% (n=14) cited “other” resources. Many, namely 25% of the respondents indicated that patient material for learning was inadequate.

Sawaji (2008) states that improving health and medical care in developing countries will be indispensable if the goals are to be achieved. However, the training and education of healthcare personnel plays a significant role in this regard. Unfortunately, as stated by the author, conditions are often difficult for nurses in developing countries as they face two major problems, namely the shortage of nurses to train them and minimal equipment and materials needed to provide care and training. The authors states: “ Since virtually none of the necessary and essential practical training is provided in nursing education, inexperienced nurses just graduating from nursing school often learn mistaken practices from their predecessors in the clinics or hospitals” (Sawaji 2008). This statement is consistent with the views of Hennessy, Hicks, Hilan and Kawonal (2006:10) who state that adequate staff and equipment in training enhances the standard of clinical training.

4.3.3.2.8 Human resources which were unavailable

In this sub-section, the respondents had to indicate which of the human resources listed in the questionnaire were unavailable or insufficient. Respondents could mark more than one variable. Of the 106 respondents, 185 responses emerged.

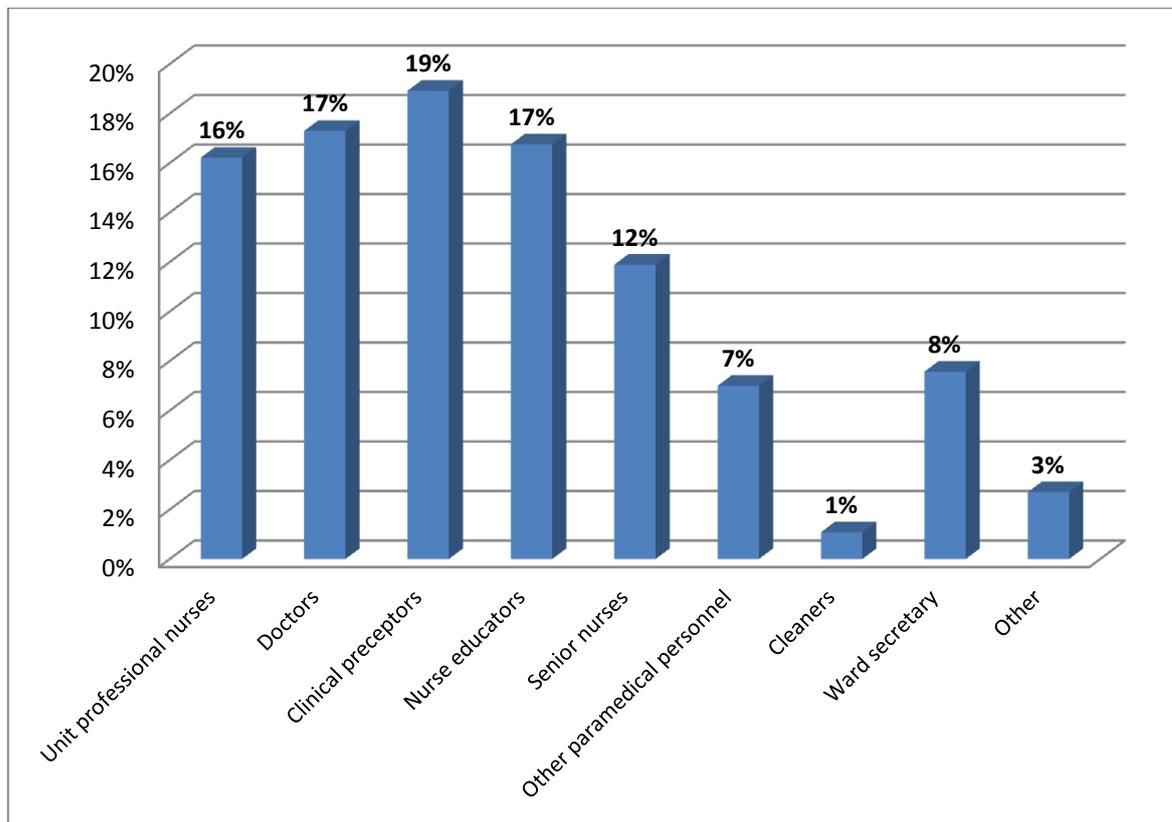


Figure 4.22 Responses of student nurses on human resources which were unavailable (N=106)

Of the respondents, 16% (n=30) indicated that unit professional nurses were unavailable in the wards, 17% (n=32) indicated a shortage of doctors, 19% (n=35) indicated insufficient provision of clinical preceptors, 17% (n=31) indicated absence of nurse educators and 12% (n=22) indicated unavailability of senior nurses. In 7% of respondents, (n=13) paramedical personnel were unavailable, 1% (n=2) indicated a shortage of cleaners, 8% (n=15) indicated absence of ward secretaries and 3% (n=5) stated “other” human resources were insufficient or absent. Many, namely 19% of the respondents indicated that clinical preceptors, followed by some 17% who indicated that nurse educators and doctors were not adequate for facilitation of learning. The findings are consistent with findings in section 4.3.3.2.4 where students indicated that they were orientated by senior professional nurses in the clinical area and findings in section 4.3.3.2.6.

Dee and Stanley (2005:220) state that in their study they found that student nurses prefer human resources and print resources to electronic resources in clinical practice however they found that student nurses do not make full use of the human resources available to them. They suggest that talking to nurse educators and clinical preceptors

can be the first step in highlighting these teachers awareness to interests in specific topics and subjects.

4.3.3.2.9 Availability of nurse educator or clinical preceptor for a problem which needed discussion and clarification

In this sub-section, respondents had to indicate whether the nurse educators and clinical preceptors were available for discussion of problems or clarification of issues related to the clinical practice.

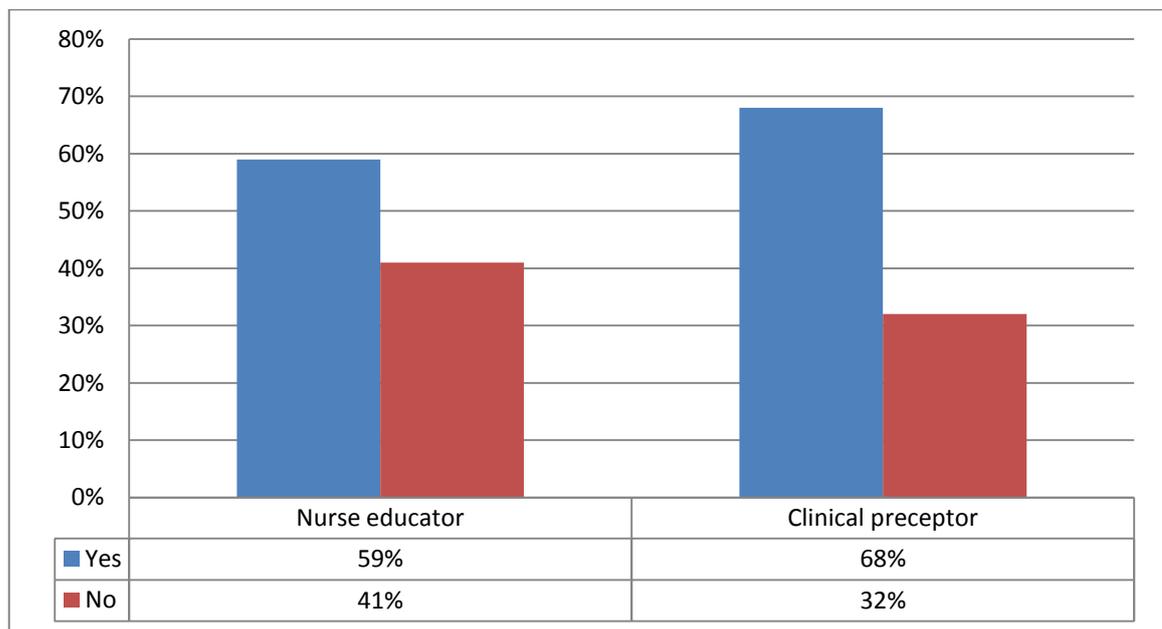


Figure 4.23 Responses of the student nurses on availability of nurse educator or clinical preceptor for problem discussion or clarification (N=106)

Fifty nine percent (n=63) of the student nurses indicated that nurse educators were available for discussion and clarification of problems they encounter whilst 41% (n=43) indicated that nurse educators were not available. Sixty eight percent (n=70) indicated that clinical preceptors were available whilst 32% (n=33) indicated that clinical preceptors were not available. The findings reveal that both nurse educators and clinical preceptors are available and clinical preceptors were more available than nurse educators for discussions and clarification of problems in the clinical area.

The findings are consistent with those of Davhana-Maselesele (2000:139) who revealed that clinical preceptors were more available than the nurse educators for student

supervision. Davhana-Maselesele further revealed that nurse educators might not be available due to lack of knowledge of practical skills in the clinical areas. Findings of different researchers are not consistent with the above findings as the nurse educators and clinical preceptors have been reported as not available due to large number of student nurses to supervise, lack of time, overload of academic work (Carlson et al 2003:30; Carson & Carnwell 2007:224; Dolan 2003:137; Lipinge & Venter 2003:10; Mabuda et al 2008:19; Murathi et al 2005:16).

4.3.3.2.10 Reasons given by the nurse educator for not being available

In this sub-section, the respondents had to indicate what reasons were given to them by the nurse educators for not attending to the students in the clinical practice. Only 41 of the respondents answered this question.

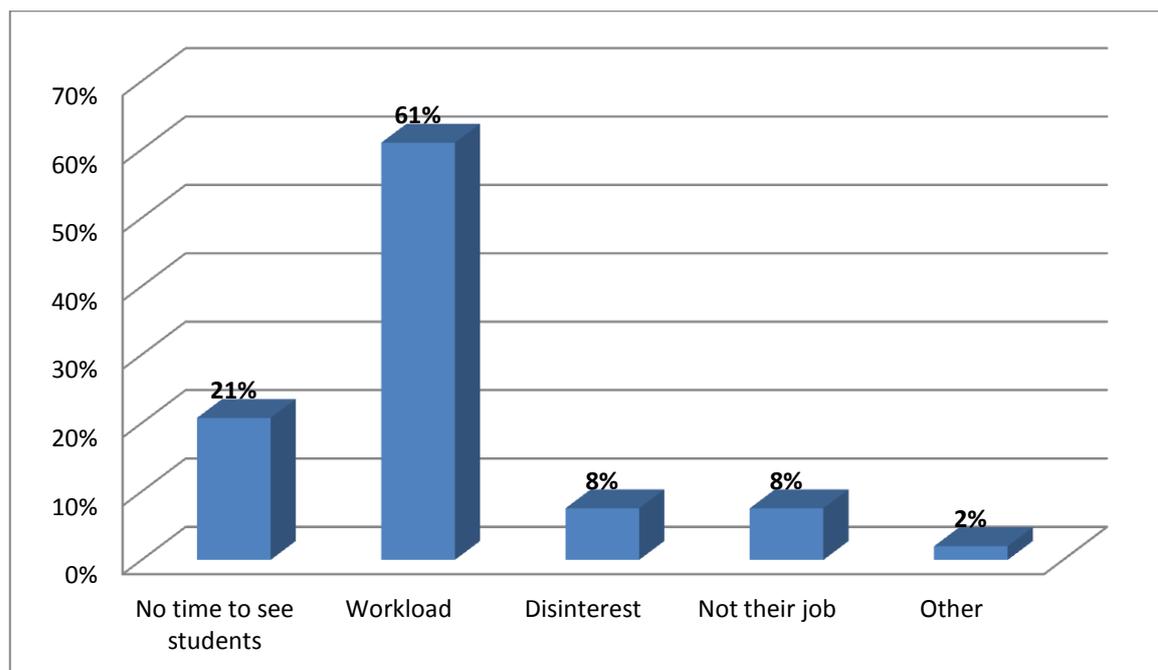


Figure 4.24 Responses of student nurses on reasons given by nurse educators for not being available (n=41)

Twenty one percent (n=9) of the respondents indicated the reasons given by nurse educators for not being availability for discussion and clarification of problems in the clinical practice as having no time to see students, 61% (n=25) indicated workload as a reason for their absence, 8% (n=3) indicated disinterest in the clinical practice area 8% (n=3) cited that it was not his/her job to accompany students to the clinical practice

areas and 2% (n=1) stated “other” reasons. The majority, namely 61% of student nurses cited workload as reasons for non-availability of the nurse educators. The findings are consistent with those of William and Taylor (2008:899) who revealed that insufficient time, heavy workload and lack of valuing of the clinical role of the nurse educators were barriers that nurse educators encounter in the clinical area.

Spouce (2003:214) cited in Greenwood (2003) states that where mentors, educators and preceptors befriend and support students, they legitimise students’ work who in turn readily seeks opportunities to participate to achieving learning outcomes. Where this relationship is missing, students are unable to gain access to professional practical knowledge and students gain supernumerary status. Greenwood (2003) states that students too have a responsibility to form relationships with their educators and they should engage staff in reflective discussions as a means to remind them of their own reflection because there is an inextricable link between theory and practice. Theoretical understanding therefore is difficult to explore when faced with poor practice.

4.3.3.2.11 *Reasons given by the clinical preceptors for not being available*

In this sub-section, the respondents had to indicate the reasons given by the preceptors for not being available during the clinical practice of the students. Only 38 responses were obtained.

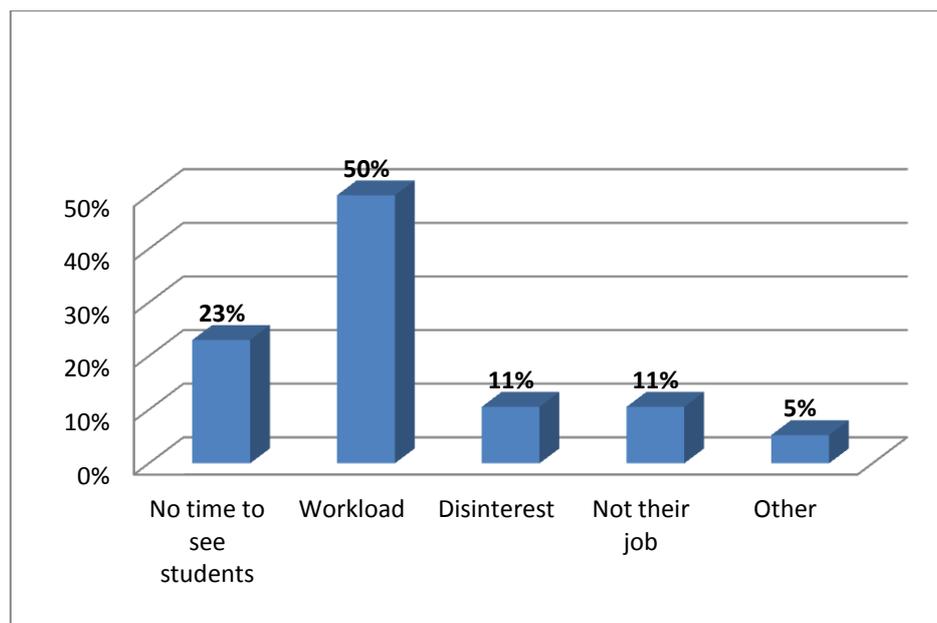


Figure 4.25 Responses of student nurses on reasons given by clinical preceptor for not being available (N=38)

Twenty three percent (n=9) of student nurses cited the reasons for non availability of clinical preceptors for discussion and clarification of problems as no time to see students, 50% (n=19) indicated workload, 11% (n=4) indicated disinterest and 11% (n=4) cited that it was not his/her job and 5% (n=2) stated other reasons. Halve, namely, 50% of the student nurses cited workload as reasons for non-availability of the clinical preceptors during the placement in the clinical area. The findings are consisted with findings in section 4.3.3.2.10.

Greenwood (2003) states that throughout training, student nurses are obliged to meet educational standards, demonstrating that they are competent, health-oriented, thinking, reflective, change-receptive and accountable nurse practitioners. Proof of these competencies comes from documentation provided by nurse educators and mentors who accompany students to the clinical practice. The author is of the opinion that ultimately nurse educators and preceptors in clinical practice determine the levels of attainment and discrimination between satisfactory and unsatisfactory performance of students.

4.3.4 Section C2

In this section, the aspects related to theory and practice is discussed.

4.3.4.1 Theory and practice

This sub-section consists of questions related to teaching strategies.

4.3.4.1.1 Teaching strategies used by the nurse educators during theoretical instruction

In this subsection, respondents had to indicate strategies used for theoretical instruction. The data analysis revealed 306 responses for this question.

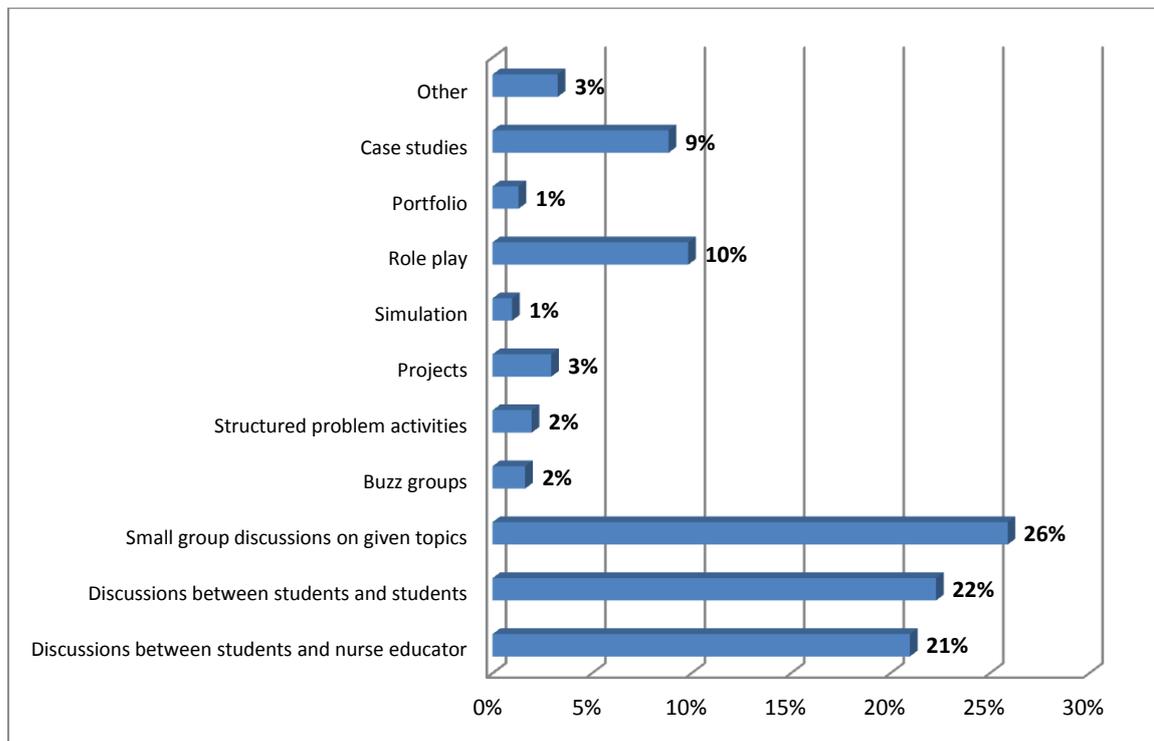


Figure 4.26 Responses of student nurses on teaching strategies used by nurse educators during theoretical instructions (N=106)

Twenty one percent (n=64) of the respondents indicated the teaching strategies used by nurse educators during theoretical instruction as discussions between students and nurse educators, 22% (n=68) indicated discussions between students and students, 26% (n=79) indicated small group discussions on given topics, 2% (n=5) indicated buzz groups, 2% (n=6) indicated structured problem activities, 3% (n=9) indicated projects, 1% (n=4) indicated simulation, 10% thirty (n=30) indicated role plays, 1% (n=4), indicated portfolio of evidence, 9% (n=27) indicated case studies and 3% (n=10) stated other teaching strategies. The findings reveal that small group discussions were used by the majority, namely 26% of the respondents as the most common teaching strategy in theoretical teaching followed by 22% who indicated discussion between students and 21% who indicated discussions between students and nurse educators. To a larger extent all the strategies listed in the questionnaire were used to enhance the ability to reflect (see section 2.2.5.2).

Maunye, Meyer and Van Velden (2009:34) revealed that although small discussion groups were used in their study it posed a challenge due to limitations to the physical facilities as well as the number of students in classrooms. It was noted with concern that in this research only 10% of student nurses indicated role-plays as teaching strategies

and only 1% of the respondents indicated the use of portfolio as a strategy of teaching. These two strategies have been reported to stimulate critical thinking and reflection (Hanley & Higgins 2005:280; Plaza, Draugalis, Slack, Skrepnek & Sauer 2007:34). In a study conducted by Green and Holloway (1997:1017), it was revealed that students identified role-play in the classroom setting as the main source of experiential teaching.

4.3.4.1.2 *Encouragement to discuss aspects in class with the nurse educator during theoretical instruction*

In this sub-section, respondents had to indicate which aspect in their teaching was discussed most with the nurse educators during theoretical instructions. Of the total respondents (N=106), 298 responses were given.

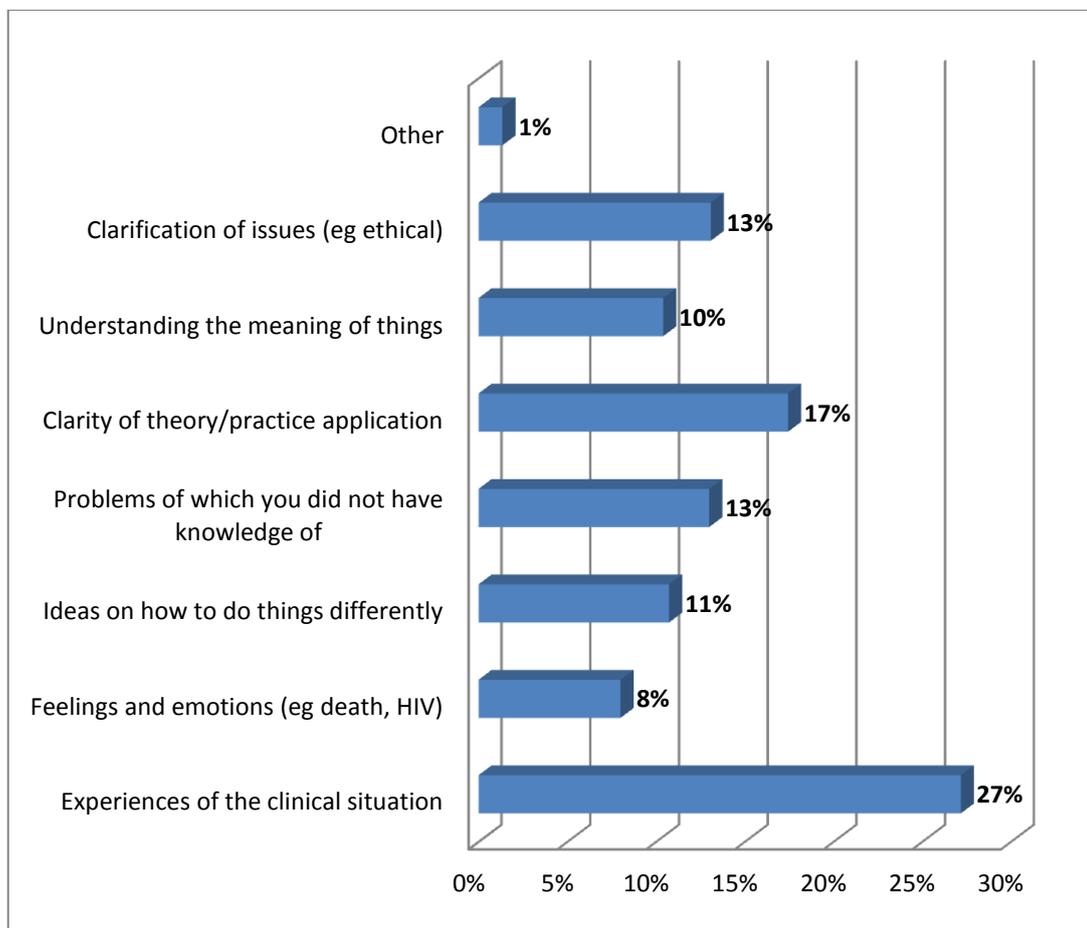


Figure 4.27 Responses of student nurses on aspects discussed with the nurse educators during theoretical instructions (N=106)

Twenty seven percent (n=81) of the student nurses indicated that they discussed aspects with the nurse educators during theoretical instruction as experiences of the clinical situation, 8% (n=22) indicated feelings and emotions, 11% (n=32) indicated ideas on how to do things differently, 13% (n=37) indicated problems of which students did not have knowledge of, 17% (n=52) indicated clarity of theory/practice integration, 10% (n=31) indicated understanding the meaning of things, 13% (n=39) indicated clarification of issues, e.g. ethical and 1% (n=4) stated other aspects. Many, namely 27% of the respondents discussed experiences in the clinical situation which assisted in integrating theory and practice. These findings are consistent with those in section 4.3.3.1.2 where it was revealed that the ability of nurse educators to integrate theory and practice stimulate student nurses` interest in a particular subject.

4.3.4.2 Clinical experiences

This sub-section refers to the clinical experiences of respondents. It included aspects related to the availability of outcomes before placement in the clinical setting, relevance of guidelines in the clinical practice in relation to level of study, the availability of lists of planned activities on arrival in the clinical setting, list of planned activities for learning and supervision during clinical practice.

4.3.4.2.1 Availability of outcomes before placement in the clinical setting

In this sub-section, the respondents were required to indicate whether they had been provided with the outcomes expected in the various clinical settings in which they were placed.

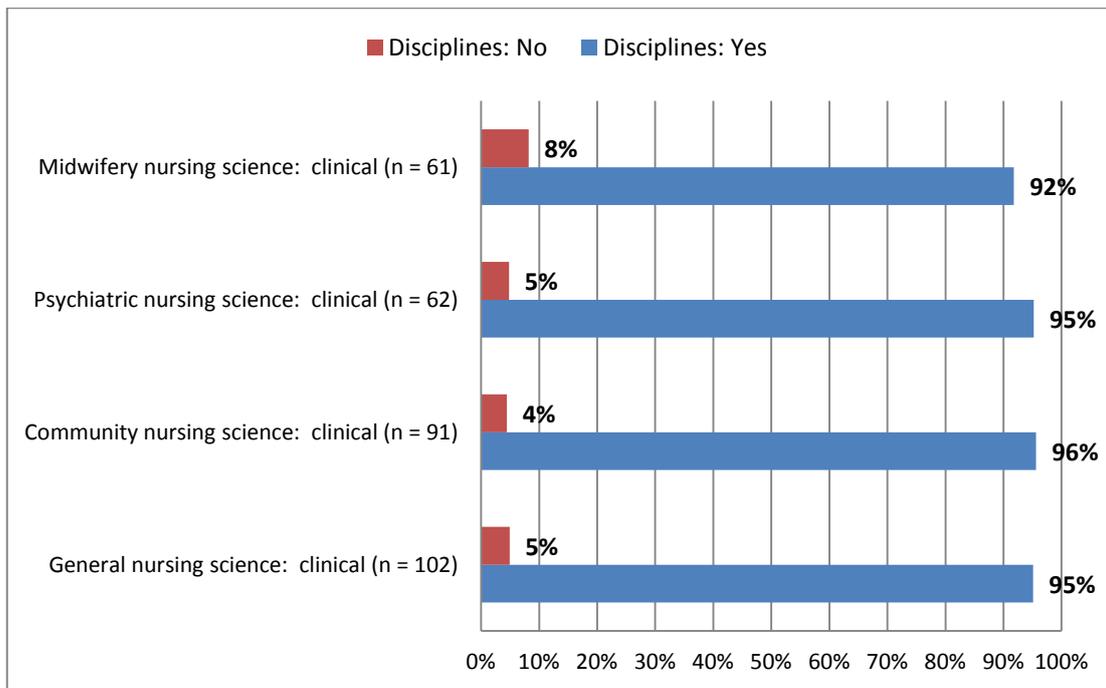


Figure 4.28 Responses of student nurses on availability of outcomes for the disciplines before placement in the clinical setting (N=106)

Ninety five percent (n=97) of the student nurses indicated that outcomes were set for general nursing science clinical whilst 5% (n=5) of the student nurses indicated that the outcomes were not set. Ninety six percent (n=87) of the student nurses indicated that the outcomes were set for community nursing science clinical whilst 4% (n=4) indicated that they were not set. Ninety five percent (n=59) indicated that the outcomes were set for psychiatric nursing science clinical whilst 5% (n=3) indicated that the outcomes were not set and 92% (n=56) indicated that the outcomes were set for midwifery nursing science clinical whilst 8% (n=5) indicated that the outcomes were not set. The findings revealed that outcomes were set for all the disciplines and in turn imply that student nurses were aware of what was expected from them.

In a study conducted by Schönwetter, Lavigne, Mazurat and Nazarko (2006:624) about students' perceptions to define effective teaching qualities linking of student and/or observer evaluations of effective instructors with student learning outcomes; it was found that clear setting of expected outcomes of what students should achieve in the clinical setting, enhanced learning experiences.

4.3.4.2.2 *Relevance of guidelines in the clinical practice in relation to level of study*

In this sub-section, the respondents had to indicate whether they regarded the guidelines provided to them prior to their placement as relevant to their level of study.

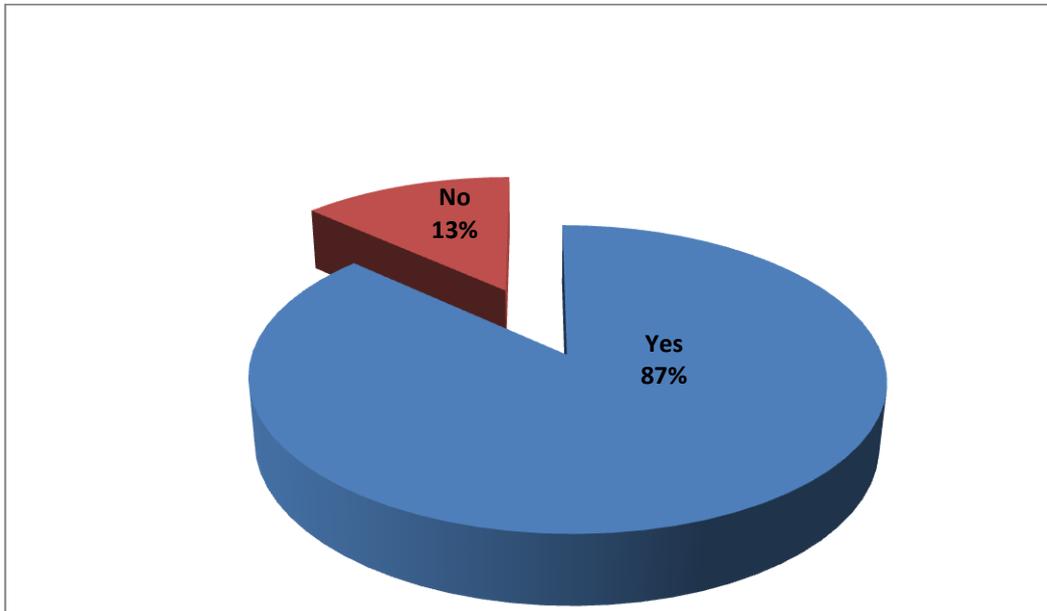


Figure 4.29 Responses of student nurses on relevance of guidelines in relation to level of study (N=106)

Eighty seven percent (n=92) of the respondents indicated that the guidelines were of the expected level whilst 13% (n=14) of the respondents indicated that the guidelines were not of the expected level. The results imply that most of the students regarded the clinical guidelines relevant to their level of study and this encourages the attainment of the outcomes of the particular level.

In a study conducted by Yonder and Saylor (2002:201) it was found that nurse educators often place unrealistic demands and expectations on students who had not yet reached a level of theoretical and clinical skill.

4.3.4.2.3 *Availability of lists of planned activities on arrival in the clinical setting*

In this sub-section, respondents were required to indicate whether there were lists of planned activities for them when they arrived in the various clinical settings.

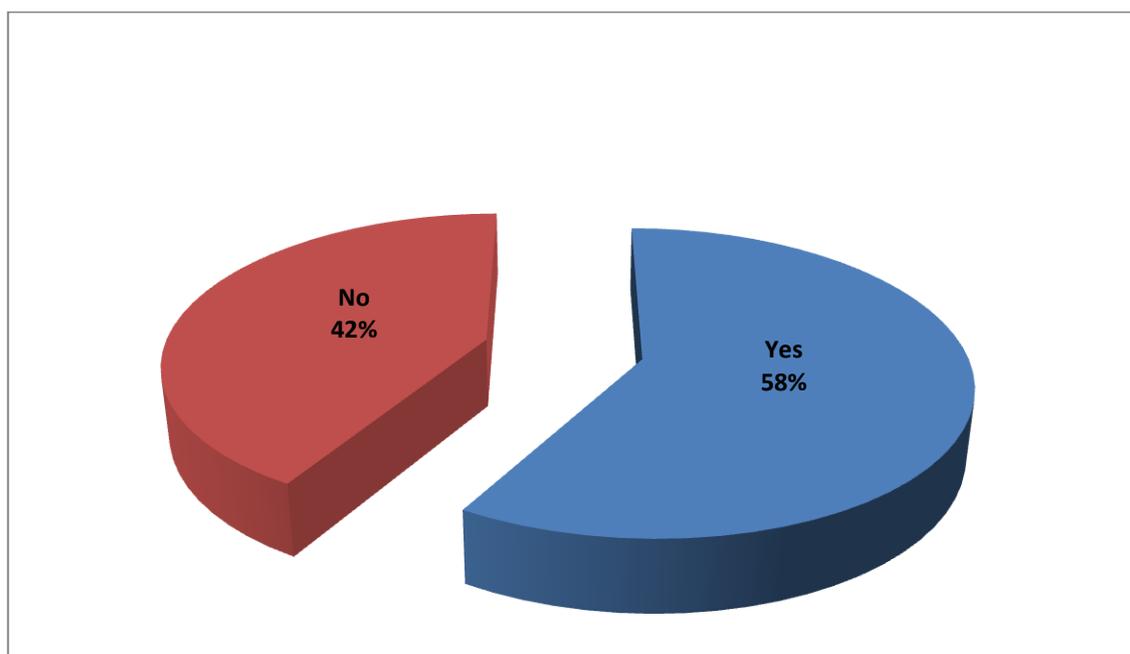


Figure 4.30 Responses of student nurses on availability of planned activities on arrival in the clinical setting (N=106)

Fifty eight percent (n=62) of the respondents indicated that a list of planned activities was available on their arrival in the clinical setting whilst 42% (n=44) indicated that the list was not available. The majority, namely 58% of the student nurses were of the opinion that planned activities were available on arrival in the clinical setting. It is a concern though that 42% (44 of the 106 respondents) indicated that no planned activities was available on arrival in the wards as this could contribute to student nurses lingering in the wards or being exploited and be used as just a “pair of hands” instead of making use of every opportunity to gain experience and applying their knowledge and skills. These findings are consistent with the findings of Draude and McKinney (2006) who indicate that structured learning activities integrated into a senior level nursing courses increased the student’s experience and comfort levels.

4.3.4.2.4 List of planned activities for learning

These sub-section deals with the availability of lists for planned activities related to learning experiences in the clinical setting. Of the total of respondents (N=106), 162 responses were given.

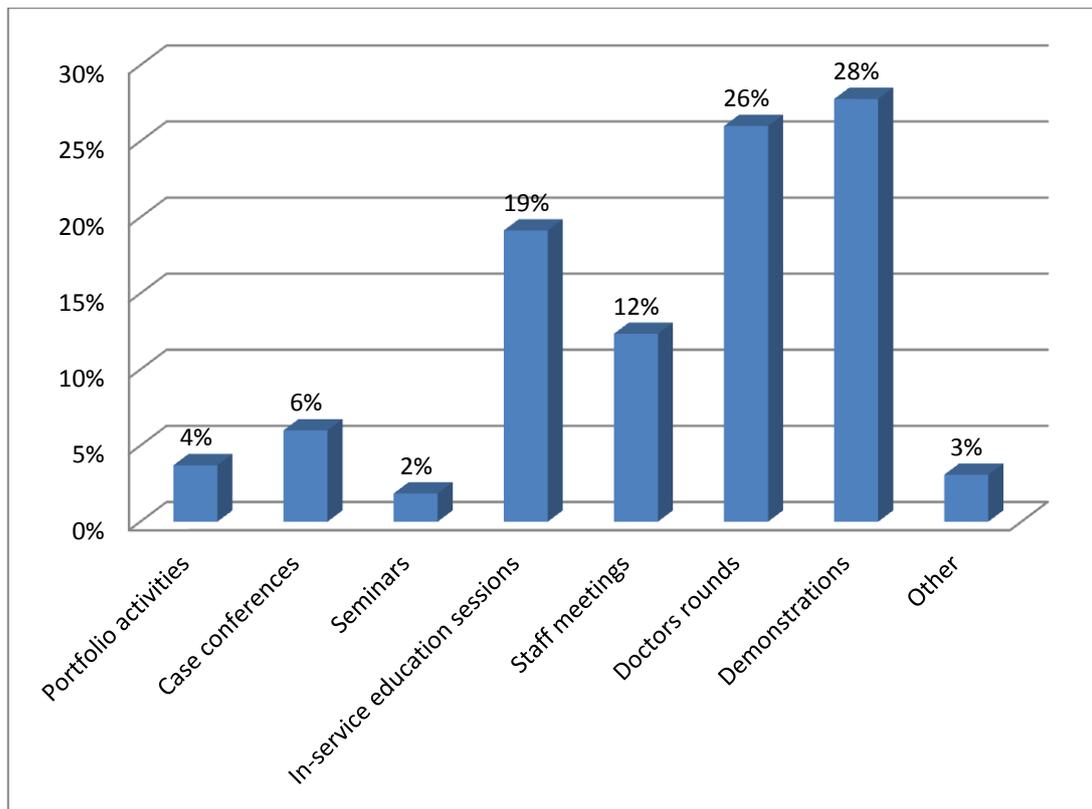


Figure 4.31 Responses of student nurses on list of planned activities for learning (N=106)

Four percent (n=6) of the student nurses indicated the planned activities that were available for student nurses to learn as portfolio activities, 6% (n=9) indicated case conferences, 2% (n=3) indicated seminars, 19% (n=31), indicated in-service education sessions, 12% (n=20) indicated staff meetings, 26% (n=43) indicated doctors rounds, 28% (n=45) indicated demonstrations and 3% (n=5) stated other activities. Many, namely 28%, 26% and 19% of student nurses respectively responded by indicating that demonstrations, doctors rounds and in-service education were available in the clinical area and that they could participate in these activities.

Although the above activities stimulate reflective thinking, Lekhuleni (2002:130) is of opinion that nurse educators must refrain from demonstration of procedures to comprehensive patient care skills. These will ensure that the psychomotor, cognitive and affective skills are all achieved (see section 1.1).

4.3.4.2.5 Supervision during your clinical practice

In this sub-section, respondents were required to indicate whether they were supervised during their clinical placement.

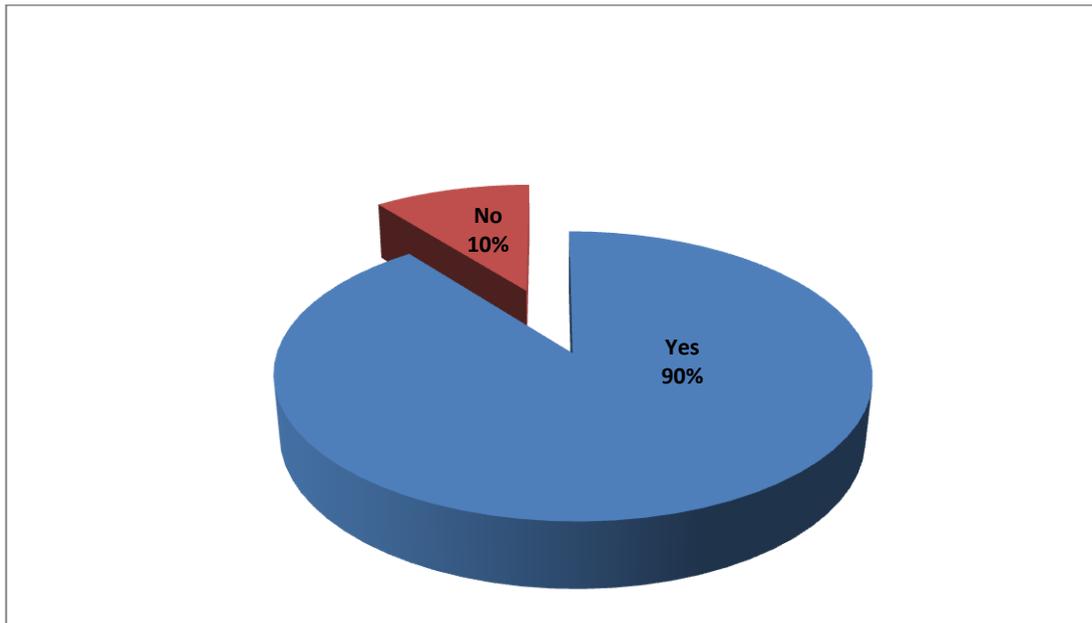


Figure 4.32 Responses of student nurses on whether they were supervised during clinical practice (N=106)

Of the respondents, 90% (n=95) indicated that they were supervised during clinical practice whilst only 10% (n=11) indicated that they were not supervised. The findings reveal that most student nurses are supervised during their clinical practice. The findings are inconsistent with literature as discussed in section 2.5.4 wherein clinical supervision was reported as inadequate for guidance and support of student nurses.

Kevin (2006:36) is of the opinion that the assessment and supervision of student nurses during clinical placement remains a complex activity. Assessment of students needs to be thorough in order to identify his or her strengths and weaknesses. Further, this assessment should be conducted in circumstances that allow the student to be at his or her best. In a study by Leners and Sitzman and Hessler (2006:24) it is recommended that collaboration between nurse educators and clinical leaders for effective nursing student placements is given priority. In order to minimise or eliminate unsatisfactory preceptoring experiences, issues should be addressed such as, “providing back-to-back shifts, and overwhelming patients and nurses with constant student involvement”. In addition, lack of educational preparation and guidance for the day-to-day preceptoring of short term student placements, needs to be discussed. Obviously, recruitment of quality preceptors for students is essential, and providing them with clear expectations,

guidelines, and tools to assist them in this process, should make precepting any nursing student, an enjoyable, fulfilling part of their responsibility to the profession.

4.3.4.2.6 Person(s) who supervised the student nurses

In this sub-section, the respondents were required to indicate the person or persons who supervised them during their clinical placement. The data revealed 156 responses for this question.

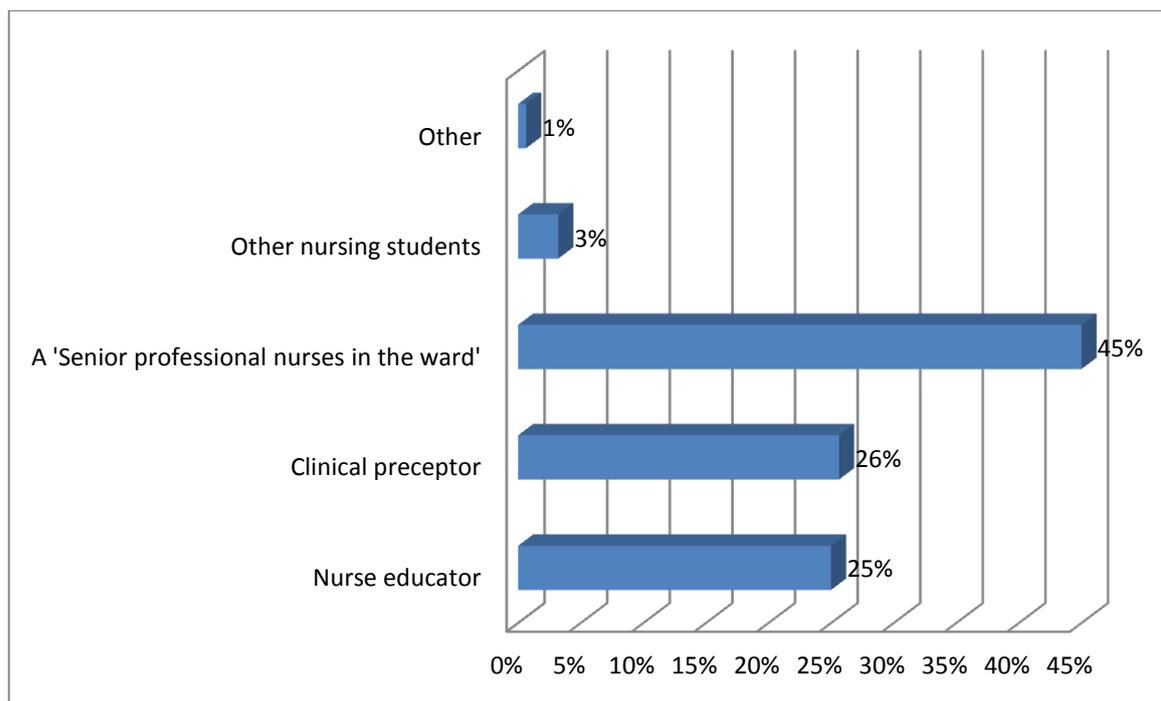


Figure 4.33 Responses of student nurses on person(s) who supervised student nurses during clinical accompaniment (N=106)

Twenty five percent (n=39) of the student nurses indicated that they were supervised by nurse educators, 26% (n=40) indicated clinical preceptors, 45% (n=71) indicated senior professional nurses in the ward, 3% (n=5) indicated other nursing students and 1% (n=1) indicated “other” individuals. Many, namely 45% of the student nurses indicated that senior professional nurses in the wards supervised them. These findings are consistent with section 4.3.3.2.4 which revealed that senior professional nurses were responsible for orientation of student nurses in the wards.

Leners et al (2006:24) recommend that administrators and faculty in schools of nursing need to be organised, have clear expectations for clinical faculty, and consistently

communicate student expectations in the clinical setting. Creation of a clinical coordinator role in the nursing school, to work with clinical placement leaders would be beneficial. Furthermore, competitive salaries for clinical faculty and clinical preceptors should be reviewed. Clinical preceptors should be acknowledged for their knowledge and value to students and to the profession, as this would serve as an enhancement and reward. Satisfied clinical instructors and students could have a positive effect on the current and future nursing workforce. There should be a paradigm shift to the clinical scholar approach. Schools of nursing should collaborate with hospitals so that effective strategies can be developed for clinical placements of students in order to provide rich and meaningful learning opportunities. A collaborative college-hospital approach to encourage innovative ideas for improving clinical experiences is warranted.

4.3.4.2.7 Frequency of supervision

In this sub-section, the frequency of supervision is reported. There were 150 responses from the 106 respondents.

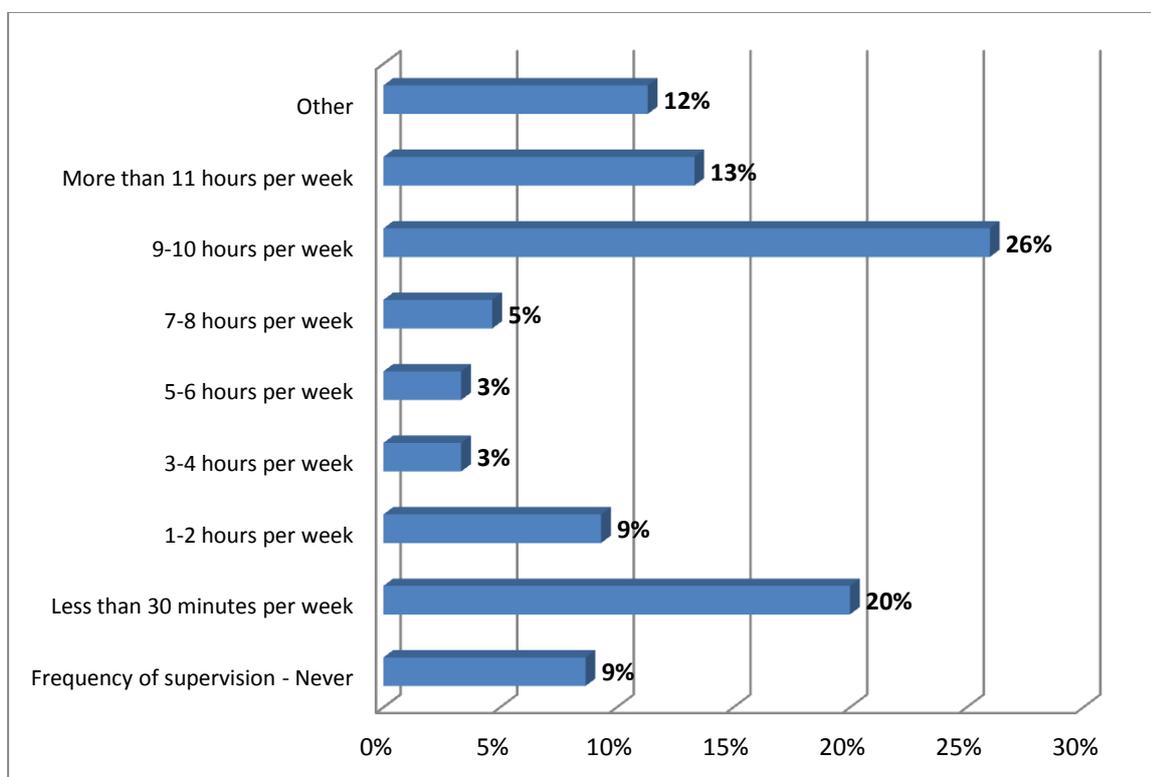


Figure 4.34 Responses of student nurses on frequency of clinical supervision during clinical practice (N=106).

Nine percent (n=13) of the student nurses indicated the frequency of clinical accompaniment as that they were never supervised, 20% (n=30) indicated less than 30 minutes per week, 9% (n=14) indicated 1-2 hours per week, 3% (n=5) indicated 3-4 hours per week, 3% (n=5) indicated 5-6 hours per week, 5% (n=7) indicated 7-8 hours per week, 26% (n=39) indicated 9-10 hours per week, 13% (n=20) indicated more than 11 hours per week and 12% (n=17) indicated “other” time frames. The findings revealed that 9-10 hours is spend with student nurses per week during their clinical placement which is above the minimum requirement as stipulated by SANC (see section 1.2.3). Findings of the study by Davhana-Maselesele (2000:140) however revealed that student nurses were supervised once a month.

4.3.4.2.8 Activities that contributed to learning during supervision (clinical accompaniment)

In this sub-section, the respondents were provided a list from which they had to choose which activities took place during supervision that may have contributed to learning. The data analysis revealed 409 responses for this question.

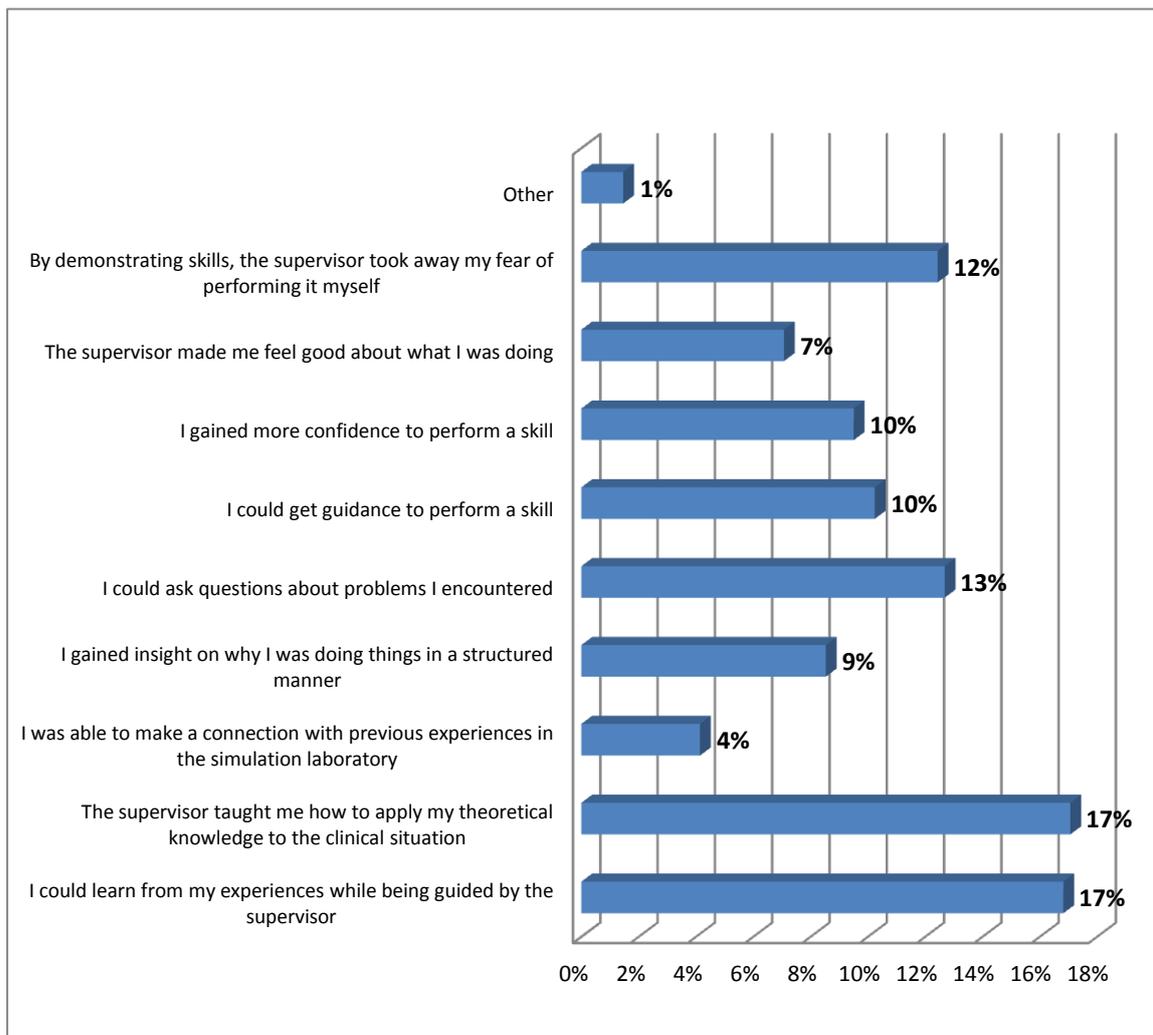


Figure 4.35 Responses of student nurses on activities that contributed to learning during supervision (clinical accompaniment) (N=106)

Seventeen percent (n=69) of the respondents indicated that they could learn from their experiences while being guided by the supervisor, 17% (n=69) stated that the supervisor taught them how to apply their theoretical knowledge to the clinical situation, 4% (n=17) indicated that they were able to make a connection with previous experiences in the simulation laboratory, 9% (n=35) indicated that they gained insight on why they are doing things in a structured manner and 13% (n=52) indicated that they could ask questions about problems they encountered. In addition, 10% (n=42) of the respondents indicated that they could get guidance to perform a skill, 10% (n=39) indicated that they gained more confidence to perform a skill, and 7% (n=29) indicated that they experienced that the supervisor made them feel good about what they were doing.

Of the respondents, 12% (n=51) indicated that by demonstrating skills, the supervisor took away their fears of performing the skill themselves and 1% (n=6) indicated other benefits of the clinical accompaniment. Many, namely 17% of the student nurses experienced that the ability to apply theoretical knowledge in clinical situation and the ability to learn from experiences as guided by the supervisor, contributed to their learning.

These findings are consistent with the views on section 2.2.5.2 and 2.3.4 where supervision was associated with integration of theory and practice as well as reflective learning.

4.3.5 Section C3

This section, addresses the theory and practice components of the four-year comprehensive programme.

4.3.5.1 *Theory and practice*

This sub-section included encouragement, discussion, periods, teaching strategies and time spent on formal lecturing by the nurse educator.

4.3.5.1.1 *Encouragement by the nurse educators during theoretical instruction to talk about the meaning of clinical experiences*

The question asked in this sub-section relates to the encouragement that the nurse educators convey to the student nurses.

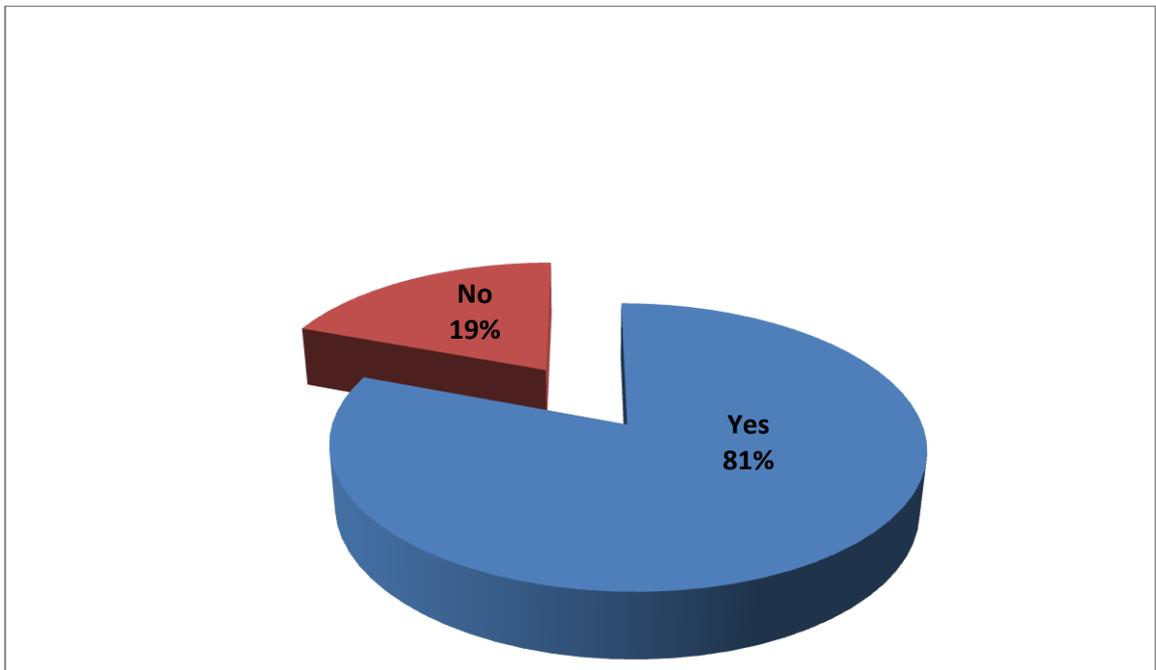


Figure 4.36 Responses of student nurses on encouragement by the nurse educators during theoretical instruction to talk about the meaning of clinical experience (N=106)

Eighty one percent (n=86) of the student nurses indicated that they were encouraged by the nurse educators to talk about the meaning of their clinical experiences whilst 19% (n=20) indicated that they were not encouraged. The majority, namely 81% of the student nurses indicated that they were encouraged to talk about the meaning of their clinical experiences. These findings are consistent with the findings in section 4.3.4.1.2.

4.3.5.1.2 Aspects learned through discussion with the nurse educator

This sub-section relates to the aspects learnt by the student nurses during their discussions with the nurse educators. Of the total of respondents (N=106), 208 responses were provided.

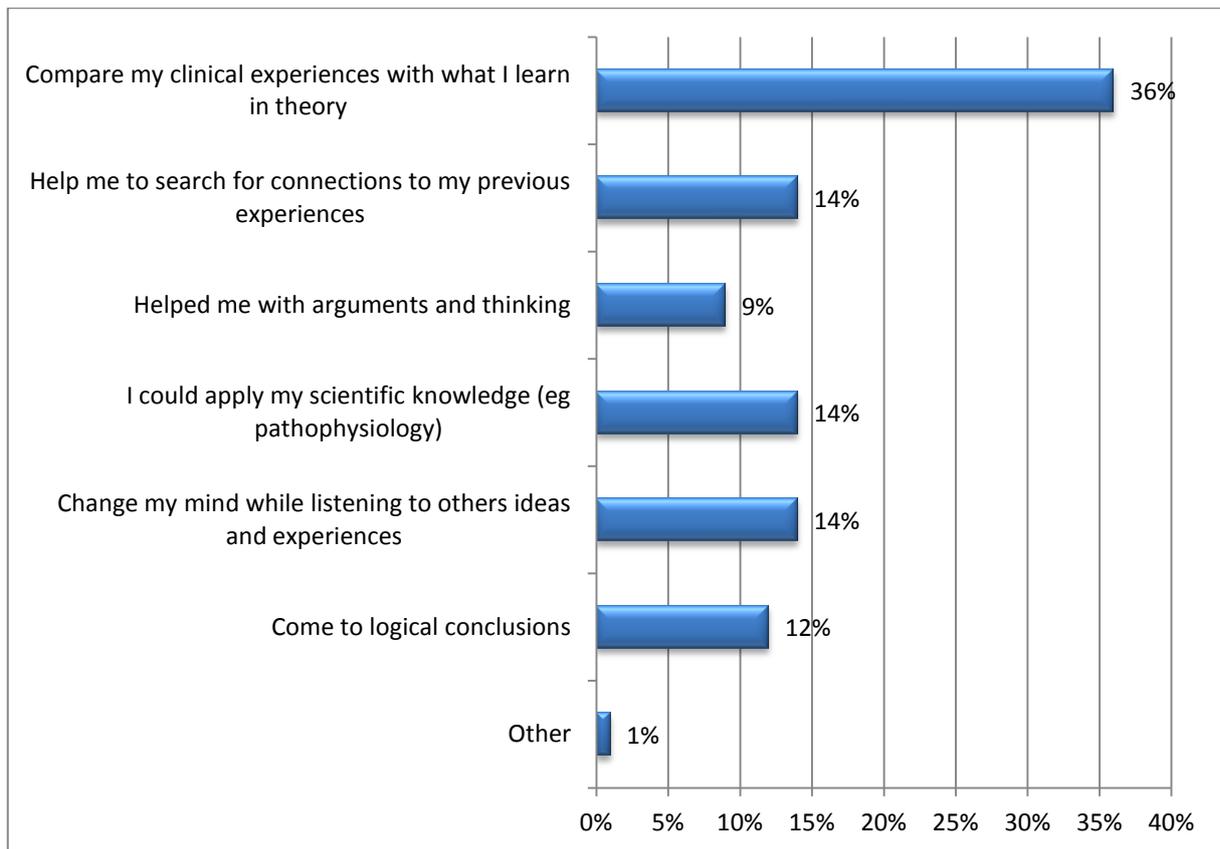


Figure 4.37 Responses of student nurses on aspects learned through discussion with nurse educators (N=106)

Thirty six percent (n=75) of student nurses indicated that discussions with the nurse educator in class helped them to compare their clinical experiences with what they learnt in theory and 14% (n=28) stated that it helped them to search for connections to their previous experiences. Of the respondents, 9% (n=19) indicated that discussions helped them with arguments and thinking 14% (n=28) indicated that they could apply their scientific knowledge, 14% (n=28) indicated that it helped change their minds while listening to others ideas and experiences, 12% (n=27) indicated that it helped them to come to logical conclusions and 1% (n=3) cited other benefits. The majority, namely 36% of student nurses indicated that discussions of the meaning of clinical experiences during theoretical instructions helped them to link theory with practice which is beneficial for learning to occur and align itself with Kolb's Experiential Learning Model. These findings are consistent with the findings in section 4.3.3.1.2.

Nickitas (2008) states that nurse educators must model moral courage for student nurses as well as ways to address problems directly rather than ignore them. "Sidestepping problems and broken systems can lead only to greater frustration and

disappointment". Speaking and listening to students for the express purpose of enhancing relationships is valuable.

4.3.5.1.3 Time frame of discussion of subjects per day by the nurse educator

In this sub-section, the respondents were asked to indicate how many periods were assigned for discussions with student nurses.

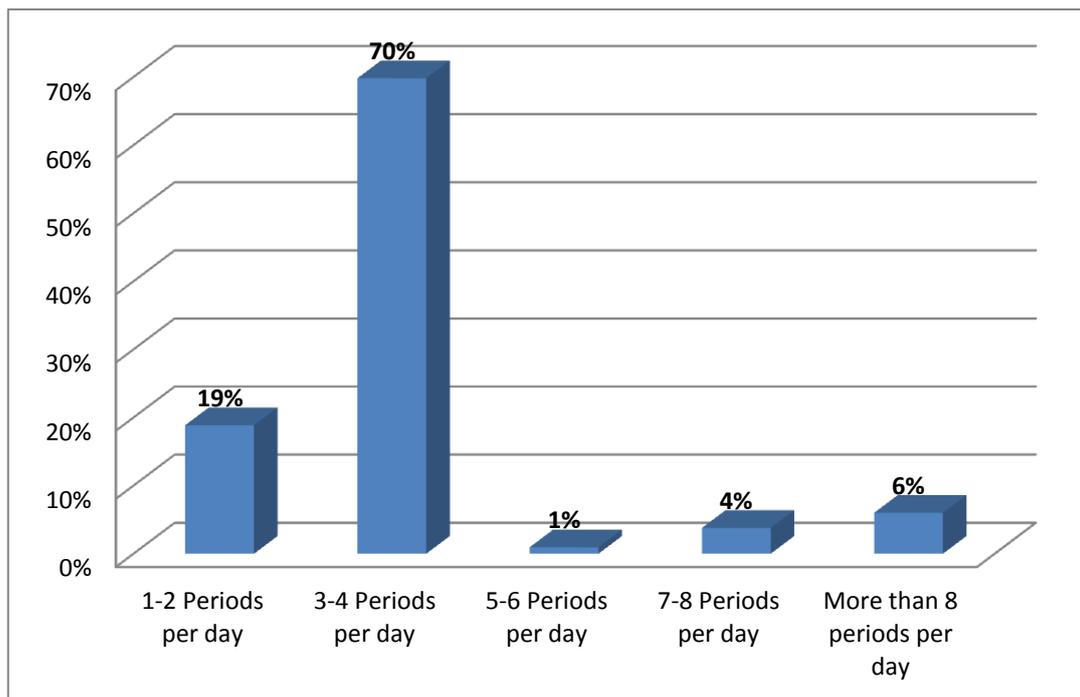


Figure 4.38 Responses of student nurses on number of periods allocated to a subject per day by the nurse educator (N=106)

Nineteen percent (n=20) of the student nurses indicated that 1-2 periods per day were allocated to a subject by the nurse educator for discussions, 70% (n=74) indicated 3-4 periods, 1% (n=1) indicated 5-6 periods, 4% (n=4) indicated 7-8 periods and 6% (n=7) indicated more than 8 periods per day. The majority, namely 70% of the student nurses implied the nurse educators were in class about 3-4 periods per day.

4.3.5.1.4 Teaching strategies used by the nurse educators during the theoretical component

In this sub-section, the respondents were to indicate the teaching strategies used in theory. Of the total respondents (N=106), 288 responses were given.

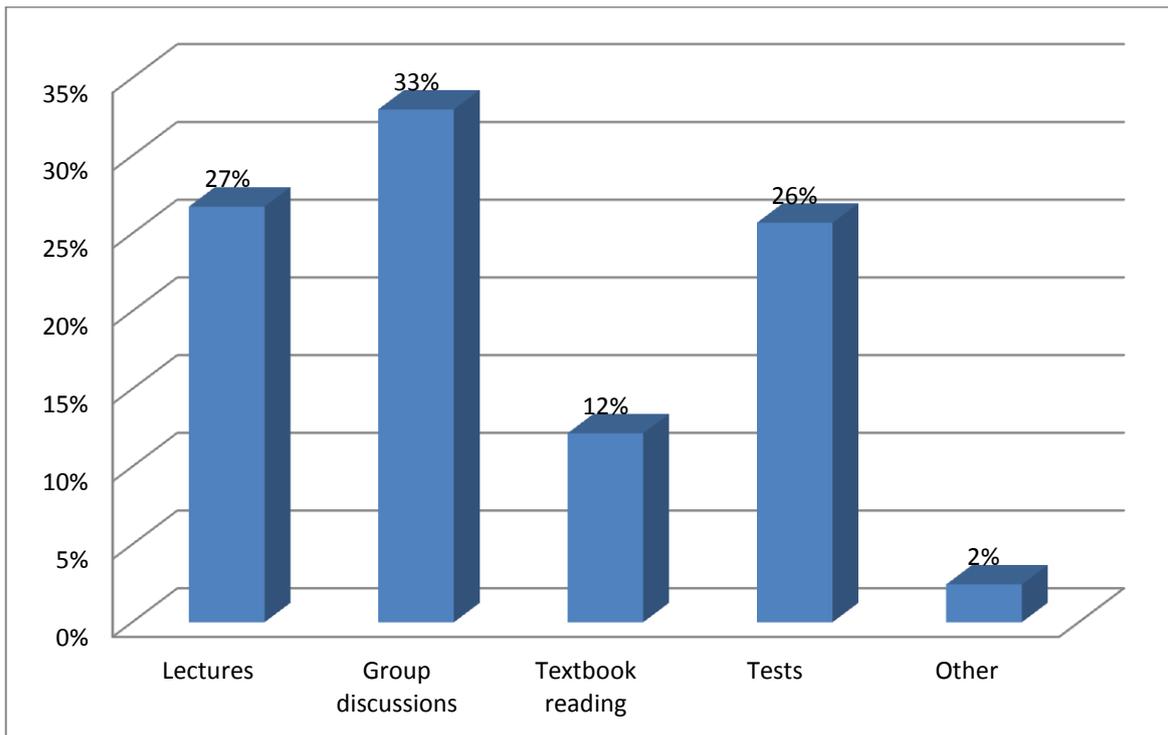


Figure 4.39 Responses of student nurses on teaching strategies used by the nurse educator during theory (N=106)

Twenty seven percent (n=77) of student nurses indicated the teaching strategies used by the nurse educators during the theoretical component as the lecture method, 33% (n=95) indicated group discussions, 12% (n=35) indicated textbook reading, 26% (n=74) indicated tests and 2% (n=7) indicated “other” teaching strategies. Many, namely 33% of the student nurses indicated group discussion followed by 27% who indicated lectures. The findings however reveal that all the above strategies were to a larger or lesser extent utilised to expand abstract conceptualisation skills as suggested by Knowles et al (2005:34).

Hill (2011) suggests that when teaching nursing students, students need to understand and integrate their coursework by adopting several key teaching strategies. During the stages of lesson planning and teaching, the clinical preceptor should keep in mind the varied learning styles and strengths of individual students to create the most relevant and meaningful lessons possible. Whenever possible, the preceptor should look for opportunities to make connections between studies and real-life scenarios. Hill (2011) suggests using strategies that include problem-based learning, concept mapping, self-directed learning and case studies.

4.3.5.1.5 Proportion of time spend by nurse educators presenting theory through formal lecture

In this sub-section, the respondents were asked to indicate the proportion of time that the nurse educators spend by formal lecturing the student nurses during the theoretical component of the programme.

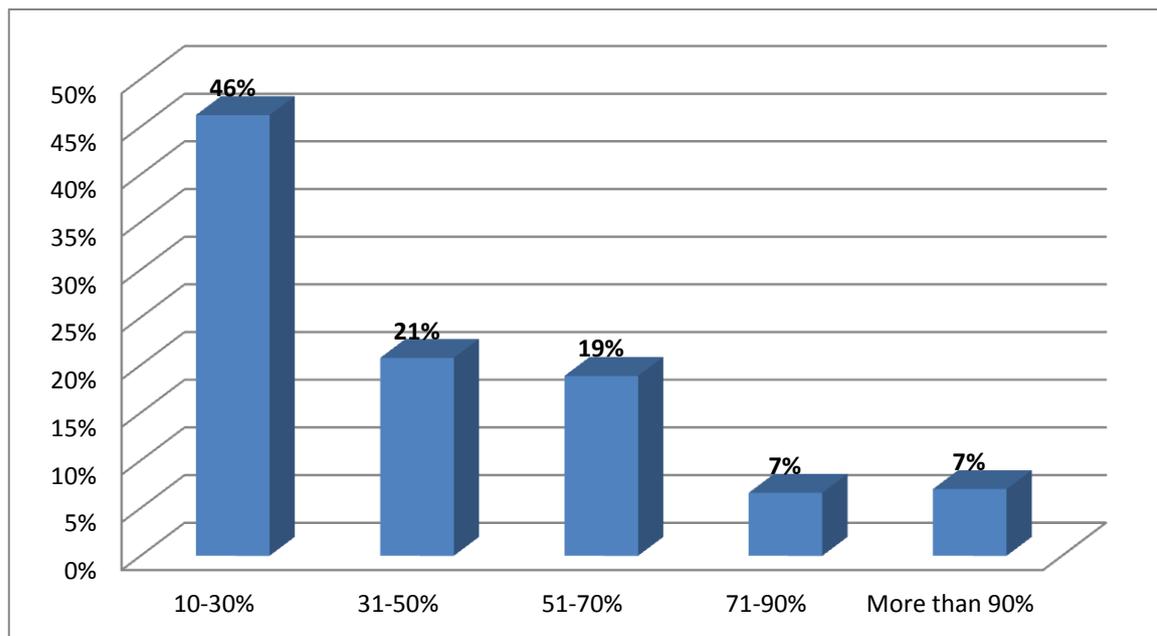


Figure 4.40 Responses of student nurses on proportion of time spend by nurse educators presenting theory through formal lectures (N=106)

Forty six percent (n=49) of the student nurses indicated the proportion of theory presented by formal lecture method as 10-30%, 21% (n=22) indicated 31-50%, 19% (n=20) indicated 51-70%, 7% (n=7) indicated 71-90% and 7% (n=8) indicated more than 90%. Many, namely 46% of student nurses indicated that nurse educators use 10-30% presenting lessons though the lecture method. It was a concern to note that these findings do not correlate with section 4.3.5.1.4 where many, namely 27% of student nurses indicated that lectures was the preferred teaching strategy.

Flanagan and McCausland (2007) state that it is acknowledged that to think critically and function effectively in a complex and dynamic profession such as nursing, many learning skills are necessary for knowledge acquisition and information processing. Teaching around the cycle encompasses traditional lectures, active learning strategies,

collaborative learning, and problem solving as a balanced and effective approach to teaching. Understanding the theoretical component of nursing requires critical thinking and complex thought processes. Students are required to apply abstract concepts or conceptual relationships to an extensive array of patient information and laboratory data. Basic information is introduced through lectures and structured classroom discussions. However, the more advanced theoretical knowledge and cognitive skills of application, analysis, synthesis, and evaluation are facilitated through active, collaborative strategies featuring faculty and student (Johnson 2010). By working on projects in small groups, students develop cooperative learning strategies that significantly enhance their problem-solving abilities and interpersonal communication skills, as well as their content acquisition and retention (Flanagan & McCausland 2007).

4.3.5.2 *Clinical experience*

This sub-section explored the clinical experiences of the student nurses. It included the communication between the clinical preceptor and the student nurses during and after the clinical placement.

4.3.5.2.1 *Encouragement by clinical preceptor during clinical experience to talk about learning experiences during theoretical instruction*

In this sub-section, students were required to indicate what they actually learnt during the theoretical component of the four-year comprehensive programme.

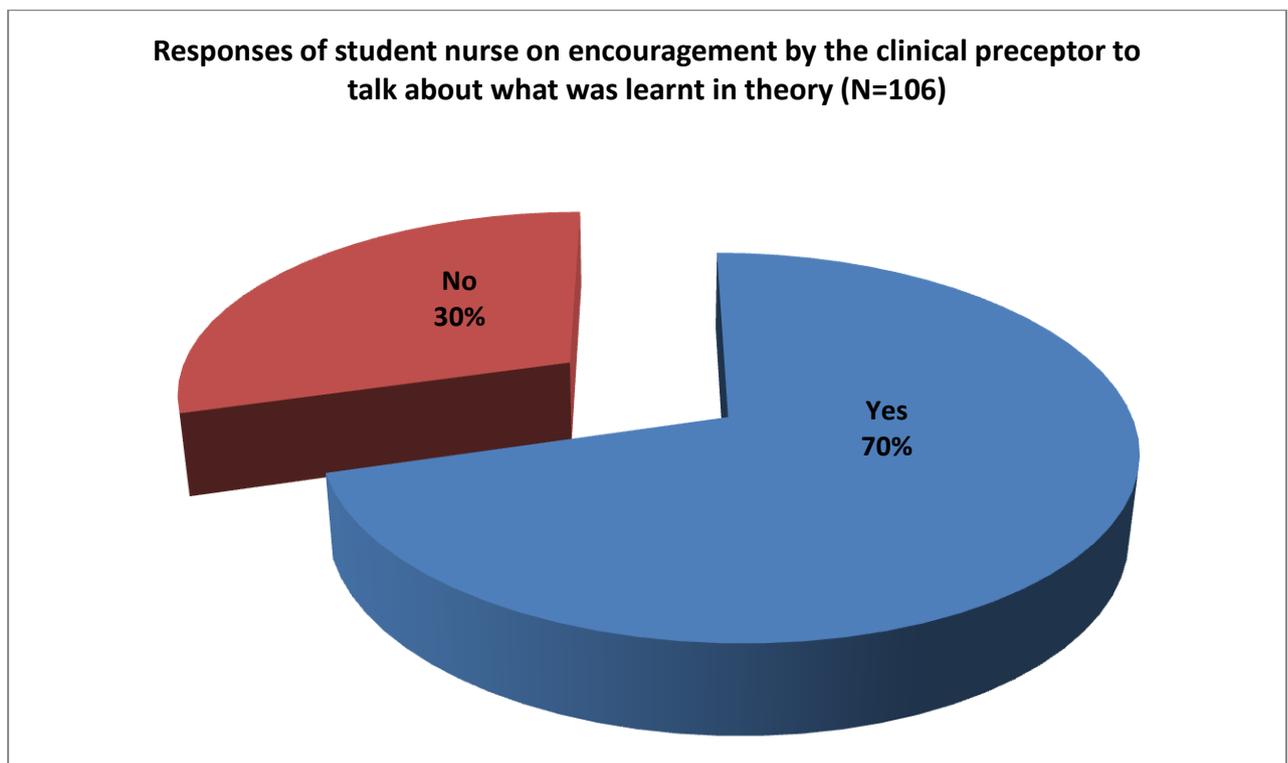


Figure 4.41 Responses of student nurse on encouragement by the clinical preceptor to talk about what was learnt in theory (N=106)

Seventy percent (n=74) of student nurses indicated that they were encouraged by the clinical preceptor to talk about what they learn during theoretical instruction whilst 30% (n=32) of the student nurses indicated that they were not encouraged. The majority, namely 70% of the respondents were encouraged to talk about what they learnt in theory. These findings are consistent with the findings in section 4.3.5.1.2.

Stockhausen (1994:363) found that reflective practice is a registering prerequisite competency for beginning nurse practitioners. This type of reflection encourage student nurses to talk about their experiences in clinical practice, offer a more integrated approach to classroom theory and its application in practice (McKenna, Wray & McCall 2009:327), focus on the “process of reflection-on-action and provides an avenue for students and the clinical teacher to set mutual goals of action to trial for future experiences” (Stockhausen 1994:363).

4.3.5.2.2 Benefits of aspects discussed during clinical practice

In this sub-section the respondents were given a list of possibilities to choose from to illustrate the benefits of discussing aspects related to clinical practice with the preceptor. Of the respondents only 74 marked this question. Of the total of respondents (N=74), 231 responses were given.

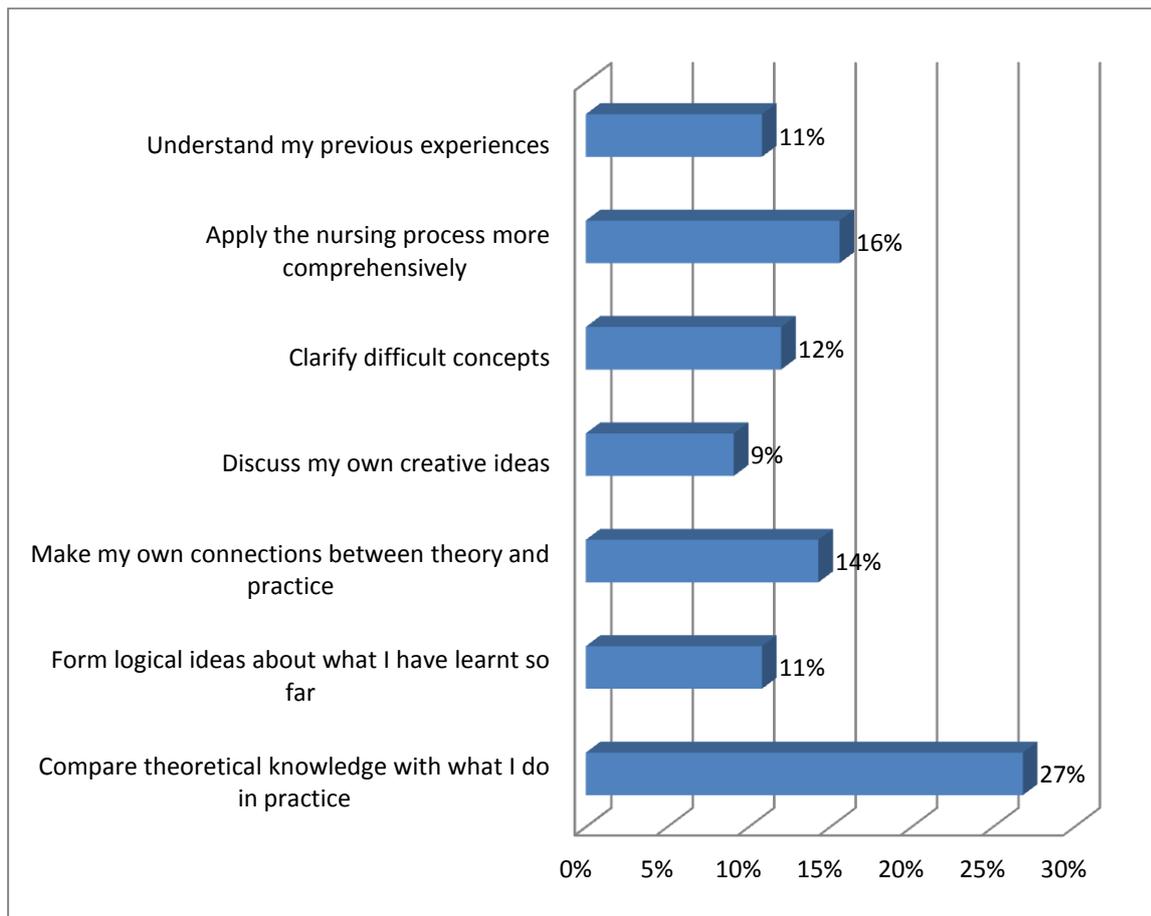


Figure 4.42 Responses of student nurses on benefits of aspects learnt from discussion with the clinical preceptor (n=74)

Twenty seven percent (n=62) of student nurses indicated that the discussions helped them to compare theoretical knowledge with what they do in practice. In addition, 11% (n=25) indicated that discussions formed logical ideas about what they have learnt so far, 14% (n=33) indicated that it enabled them to make their own connections between theory and practice and 9% (n=21) indicated that it helped to discuss their own creative ideas. Of the respondents 12% (n=29) indicated that it helped to clarify difficult concepts, 16% (n=36) indicated that discussions helped them to apply the nursing process more comprehensively and 11% (n=25) indicated that discussions helped them

to understand their previous experiences. These findings conclude that clinical placement is important in linking theory and practice and this is in line with the findings in section 4.3.5.2.1.

Post-placement briefing facilitates professional socialisation (McKenna et al 2009:328). This process of reflection and open communication between the clinical preceptor and students is an integral component of success to the students learning in the clinical context (Stockhausen 1994:370).

4.3.5.2.3 Strategies used by the clinical preceptor during the clinical accompaniment

In this subsection, respondents were asked to indicate which of the given strategies the clinical preceptor used during clinical accompaniment. The data analysis revealed 148 responses from this question.

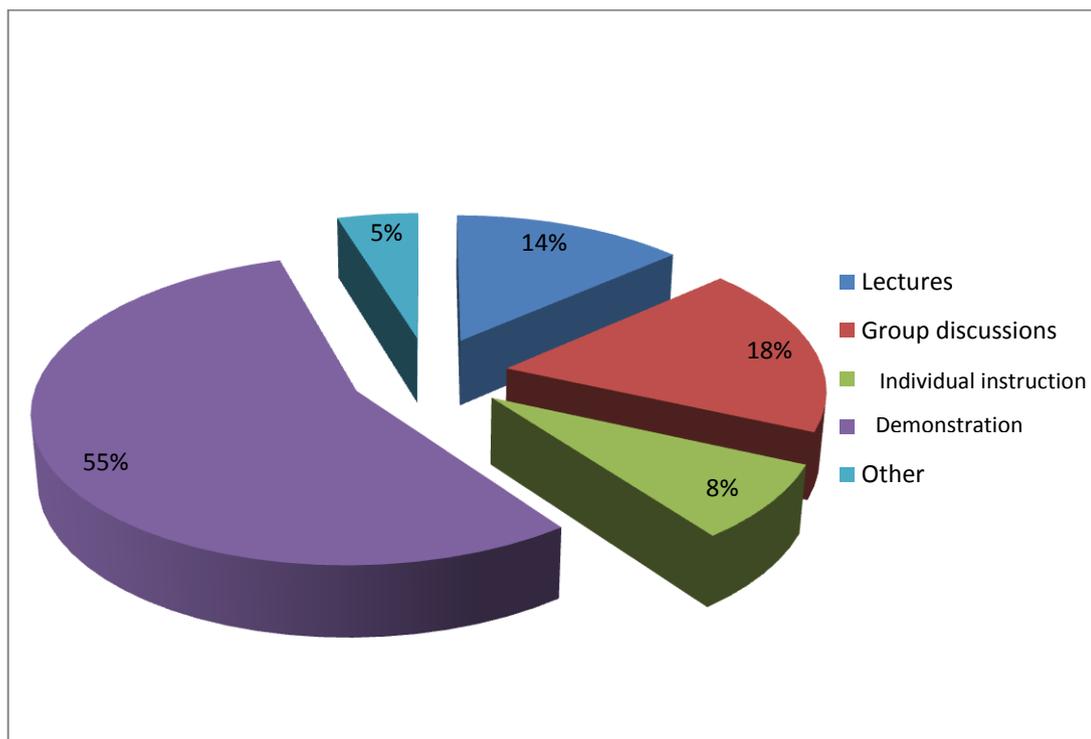


Figure 4.43 Responses of student nurses on strategies used by the clinical preceptor during clinical accompaniment (N=106)

Fourteen percent (n=20) of student nurses indicated the strategies used by the accompanist as lectures, 18% (n=27) indicated group discussions, 8% (n=12) indicated individual instructions, 55% (n=82) indicated demonstrations and 5% (n=7) indicated

other strategies. The majority, namely 55% of the student nurses indicated demonstration as the most used teaching strategies utilised by the clinical accompanist.

Drexler (2010) reports a lack of confidence in student nurses in fulfilling the expectations and responsibilities of professional nursing. Demonstrations help maximise student nurses' confidence in relation to social learning theory. A confidence building approach includes use of clinical demonstrations on models in simulation laboratories and is accompanied by feedback, praise, humor, and mindfulness training. Sharing stories and experiences, as well as allowing students to practice during demonstrations leads to learning in a safe environment (Anderson & Kiger 2008:443).

The lecture method was the most widely used instructional strategy in college classrooms. Although the usefulness of other teaching strategies is being widely examined today, the lecture remains an important way to communicate information. Used in conjunction with active learning teaching strategies, the traditional lecture can be an effective way to achieve instructional goals. The advantages of the lecture approach are that it provides a way to communicate a large amount of information to many listeners, maximises instructor control and is non-threatening to students. The disadvantages are that lecturing minimises feedback from students, assumes an unrealistic level of student understanding and comprehension, and often disengages students from the learning process causing information to be quickly forgotten (George Mason University 2010; Weimer 2009).

Kelly (2010) is of opinion that group discussions require setting up and enforcing ground rules for students. If these rules are not enforced then there is a possibility that the discussion could quickly go off-topic. Students who are weak in note-taking skills will have trouble understanding what they should remember from group discussions. This is even more so than in lectures in many cases because not only the teacher but also fellow students are talking about the lesson. Some students may not feel comfortable being put on the spot during a whole group discussion.

In a study conducted by Johnson and Mighten (2005:319) no statistically significant difference existed between the course-passing rate of students in using lectures versus discussion groups as strategies of teaching. The results provide strong support for utilisation of both lecture notes and structured group discussion.

4.3.5.2.4 Benefits of clinical accompaniment towards professional growth

This sub-section deals with the responses of student nurses on whether they view clinical accompaniment as beneficial towards their professional growth.

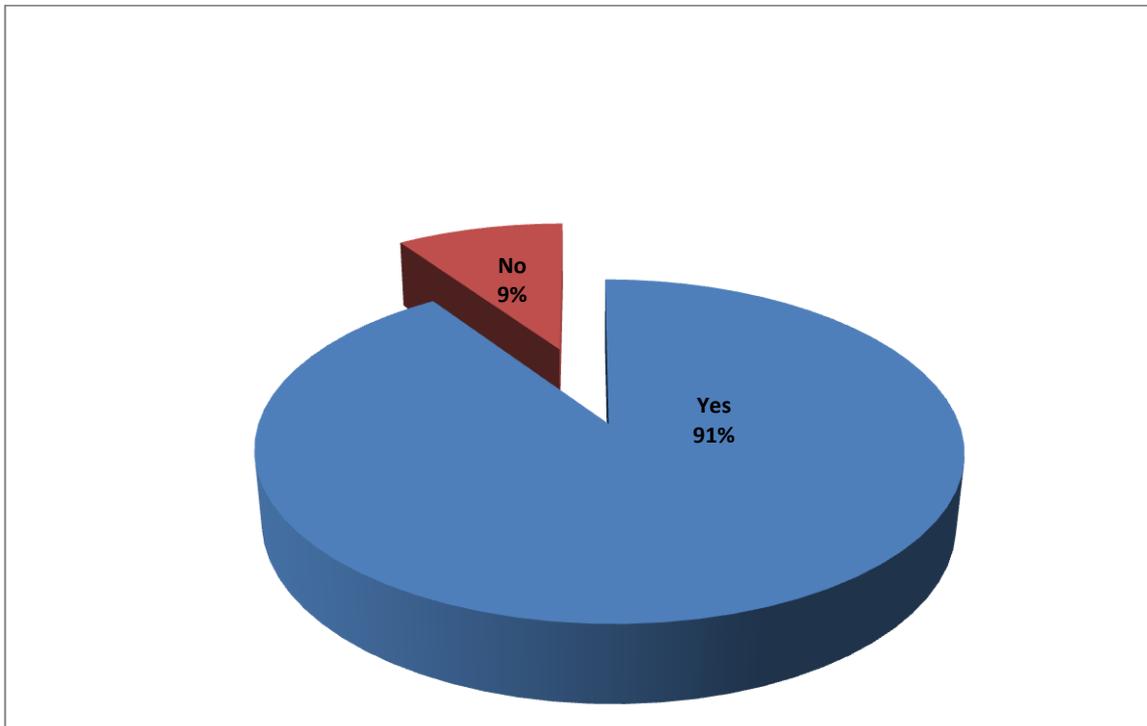


Figure 4.44 Responses of student nurses on whether clinical accompaniment was beneficial towards professional growth (N=106)

Ninety one percent (n=96) of the student nurses indicated that clinical accompaniment was beneficial towards professional growth whilst 9% (n=10) indicated that it was not beneficial. The majority, namely 91% of student nurses view clinical accompaniment as beneficial to their professional growth. The findings are consistent with those of Cross, Moore and Ockerby's (2010:246) which reveal that clinical supervision leads to professional and personal development.

4.3.5.2.5 Benefits of clinical accompaniment

In this sub-section, the respondents had to choose the benefit of clinical accompaniment as applied to them. The data analysis revealed 261 responses for this question.

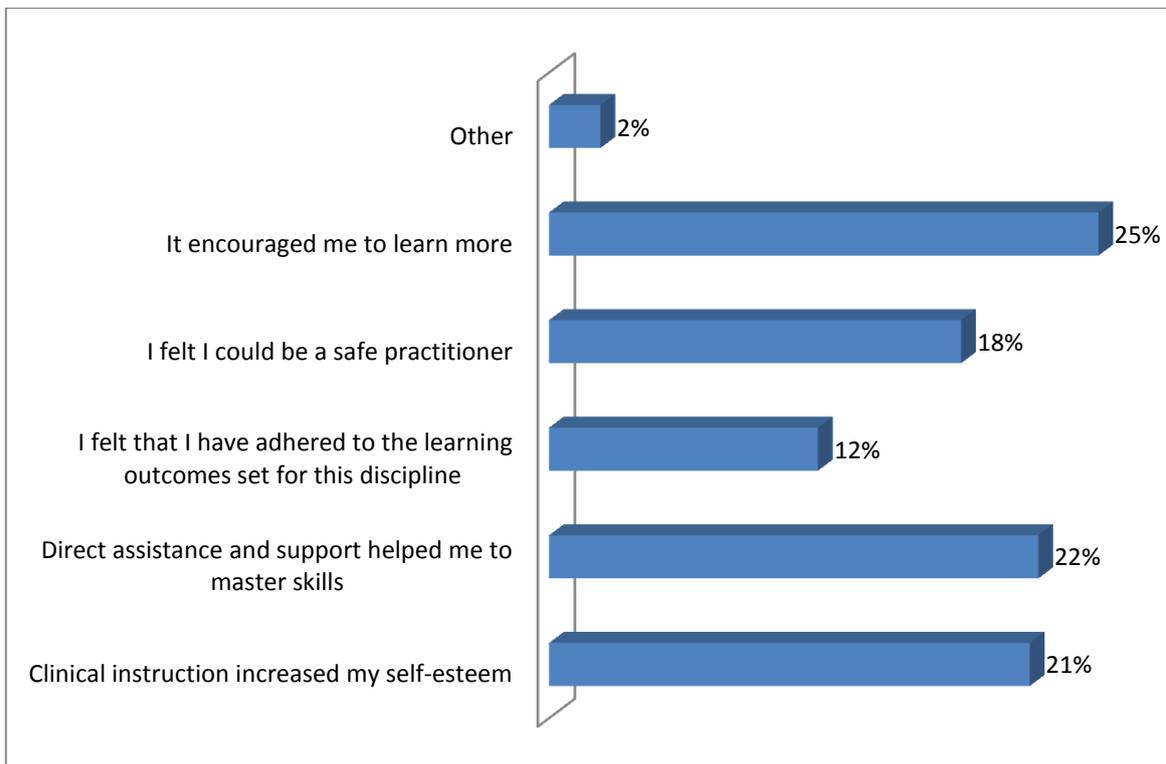


Figure 4.45 Responses of student nurses on benefits of clinical accompaniment (N=106)

Twenty one percent (n=56) of student nurses indicated the benefits of clinical accompaniment as increasing their self-esteem, 22% (n=57) indicated that direct assistance and support helped them to master clinical skills. Of the student nurses, 12% (n=30) indicated that they have adhered to the learning outcomes set for this discipline, 18% (n=48) indicated that they could be safe practitioners and 25% (n=64) indicated that it encouraged them to learn more. Only 2% (n=6) indicated some other benefits. Many, namely 25% of the student nurses indicated that clinical accompaniment supported them in mastering skills.

These findings are consistent with the results of a study conducted by Mayne (2004: 31) which state that demonstration of clinical skills is the “heart of a nurses’ professional practice”.

4.3.5.2.6 Differences between the simulated skills and the actual clinical procedures in the wards

In this sub-section, students had to indicate whether they thought there were differences between simulated skills and the actual procedures on patients.

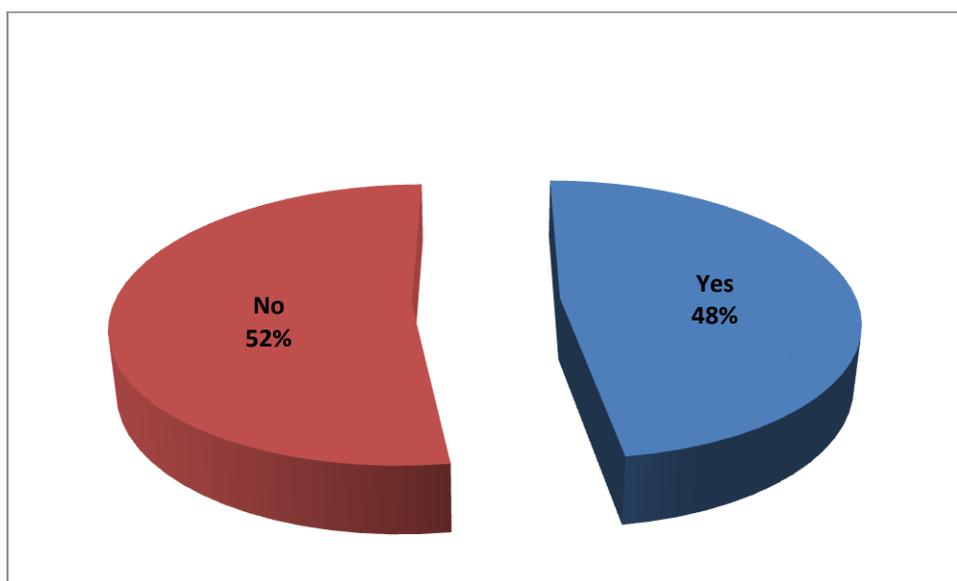


Figure 4.46 Responses of student nurses on differences between the simulated skills and the actual procedures in the wards (N=106)

Forty eight percent (n=51) of the student nurses indicated that there were differences between the simulated skills and the actual clinical procedures in the wards whilst 52% (n=55) of the student nurses indicated that there were no differences. The majority, namely 52% indicated that there were no differences. The fact that 48% of student nurses indicated that there are some differences actually indicate that there could be uncertainty regarding the issue. Bartfay et al (2004:21), Carson and Carnwell (2007:225), Dolan (2003:136) and Morgan (2006:159) are of the opinion that there are perceived differences by student nurses pertaining to the reality of practice and idealism of theory.

4.3.5.2.7 Differences between the simulated skills and the actual clinical procedures

In this sub-section, the respondents were asked what they perceived as the differences between simulated skills and actual clinical procedures conducted on patients in clinical practice. Only 50 of the 106 respondents responded to this question.

Table 4.2 Responses of student nurses on differences between the simulated skills and the actual clinical procedures (n=50)

Differences between the simulated skills and the actual clinical procedures in the wards	Frequency	Percent
The unit professional nurses do not follow procedure they use short cuts due to lack of time and lack of equipments whereas the nurse educator does skills in a procedural and professional manner	25	50%
Unit professional nurses do not consider ethical issues in doing the procedures	5	10%
During simulation one uses imagination and in the real practical setting one becomes clear	10	20%
Aseptic technique is maintained during simulation and not done in the real practice setting	10	20%
Total	n=50	100%

Table 4.2 illustrates the responses of student nurses on the differences between simulated skills and actual clinical procedures in the wards. Fifty percent (n=25) of student nurses indicated that the unit professional nurses do not follow procedure they use short cuts due to lack of time and lack of equipments whereas the nurse educator does skills in a procedural and professional manner, 10% (n=5) indicated that unit professional nurses do not consider ethical issues in doing the procedure, 20% (n=10) indicated that during simulation one uses imagination and in the real practical setting one becomes clear and 20% (n=10) indicated that, aseptic technique is maintained during simulation and not done in the real practice setting. The majority, namely 50% of student nurse are of the opinion that unit professional nurses do not follow procedures as taught in clinical practice education and that they use “short cuts” due to lack of time and equipment whereas the nurse educator does skills in a procedural and professional manner. The above findings are consistent with the views of Bartfay et al (2004:21); Carson and Carnwell (2007:225); Dolan (2003:136); Morgan (2006:159).

4.3.5.3 Cross tabulation

- Cross tabulation was done for question 4.3.4.1 to 4.3.5.2.7 against the level of study and whether the student nurses have failed a subject. There was a significant level of association ($p < 0.019$) between levels of study and “class discussion with the nurse educator helped me to compare my clinical

experiences with what I learnt in theory". The fourth year students indicated having benefitted less from class discussions.

- Significantly ($p < 0.008$) less fourth year student nurses found support during discussions that helped them to search for connection to their previous experience as compared to their clinical experiences with what they learnt in theory.
- Significantly ($p < 0.006$) more fourth year student nurses acknowledged the use of group discussions by the clinical preceptor more than in the other levels of study.

4.3.6 Section C4

This section dealt with the aspects related to the simulation laboratory used in theory and practice. It also focused on active participation in the theoretical and clinical components of the four-year comprehensive programme.

4.3.6.1 Theory and practice

4.3.6.1.1 Ways of experimental participation during theoretical instruction

This sub-section required from the respondents to indicate the ways of experimental participation during the theoretical instruction in the second, third and fourth year of study.

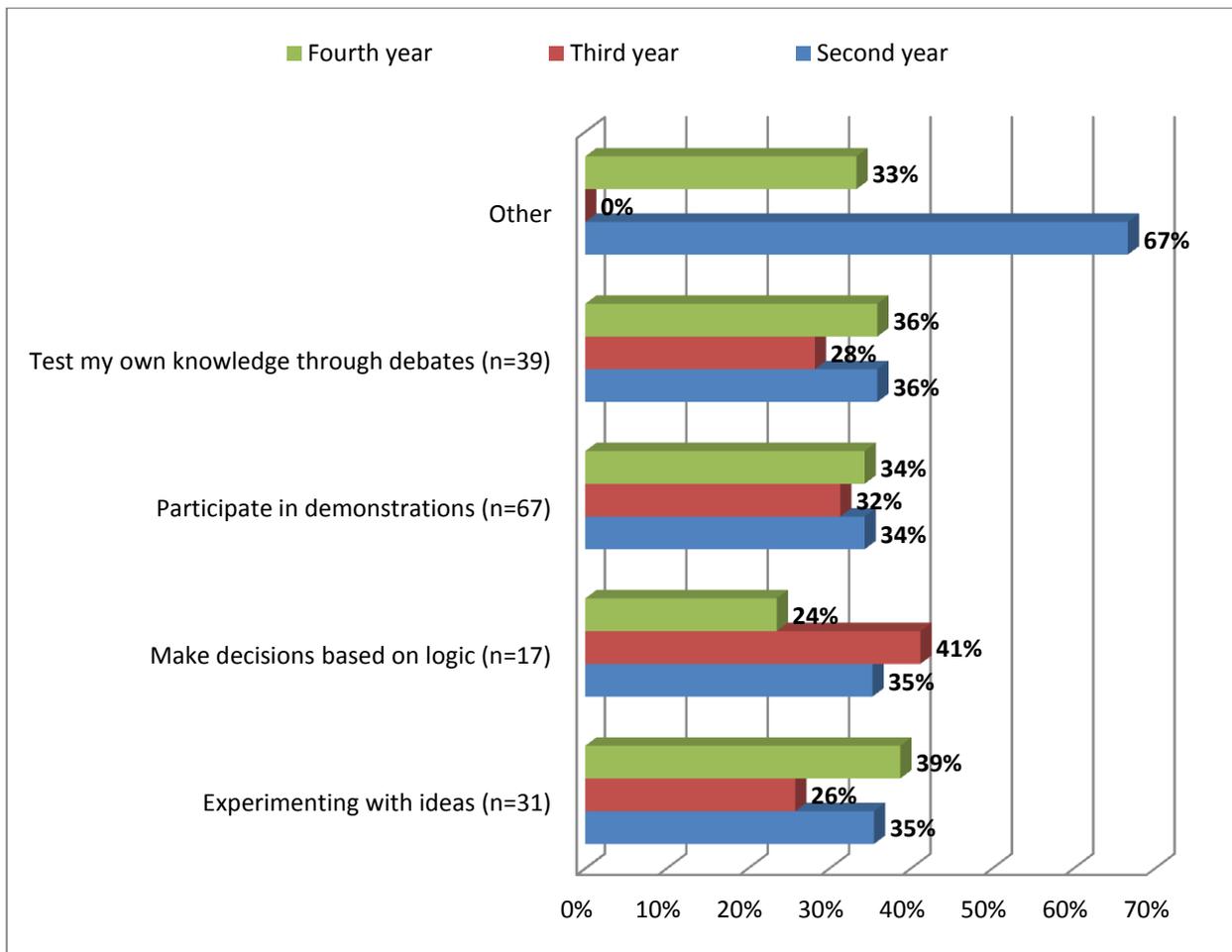


Figure 4.47 Responses of student nurses on ways of experimental participation during theoretical instruction (N=106)

Thirty five percent (n=11) of the second year student nurses were able to participate by experimenting with ideas as compared to 26% (n=8) third year student nurses and 39% (n=12) fourth year student nurses. Thirty five percent (n=6) second year student nurses were able to participate in experiments by making decisions based on logic as compared to 41% (n=7) third year student nurses and 24% (n=4) fourth year student nurses. Thirty four percent (n=23) of the second year student nurses were able to participate in experiments by participating in demonstrations as compared to 32% (n=21) third year student nurses and 34% (n=23) fourth year student nurses. Thirty six percent (n=14) second year student nurses were able to participate in experiments by testing their knowledge through debates as compared to 28% (n=11) third year student nurses and 36% (n=14) fourth year student nurses. Sixty seven percent (n=2) second year student nurses stated other ways as compared to 3% (n=1) fourth year student nurses. The findings reveal that all aspects were essential for experimentation by

students. It was however identified that second year students had indicated other ways of experimenting as compared to the third and the fourth year student nurses.

4.3.6.1.2 Availability of a simulation laboratory in the nursing college

This sub-section deals with the respondents' knowledge regarding the existence of a simulation laboratory in the nursing college.

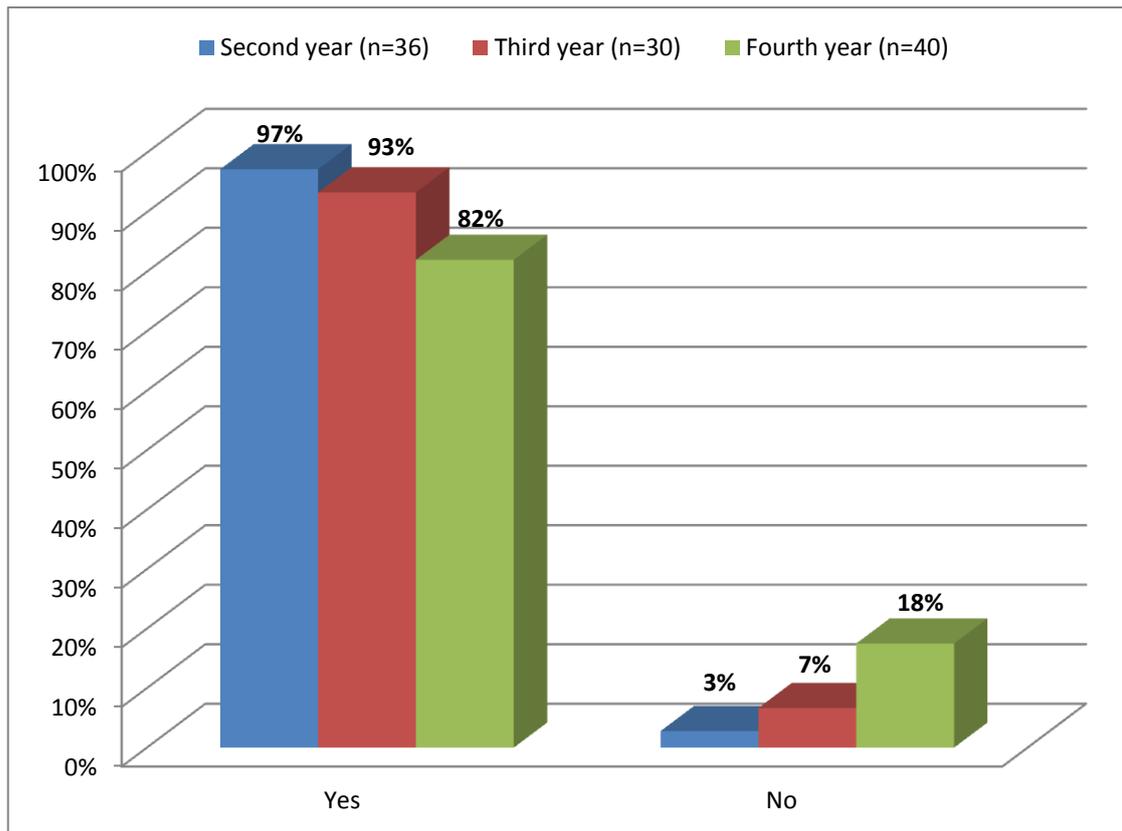


Figure 4.48 Responses of student nurses on availability of a simulation laboratory in the nursing college (N=106)

Ninety seven percent (n=35) of the second year student nurses indicated that a simulation laboratory was available as compared to 93% (n=28) third year student nurses and 82% (n=33) fourth year student nurses. The findings reveal that all student nurses respectively indicated the availability of the simulation laboratory in the nursing college.

4.3.6.1.3 Location of the simulation laboratory

This sub-section aimed to identify the students' knowledge of the location of the simulation laboratory.

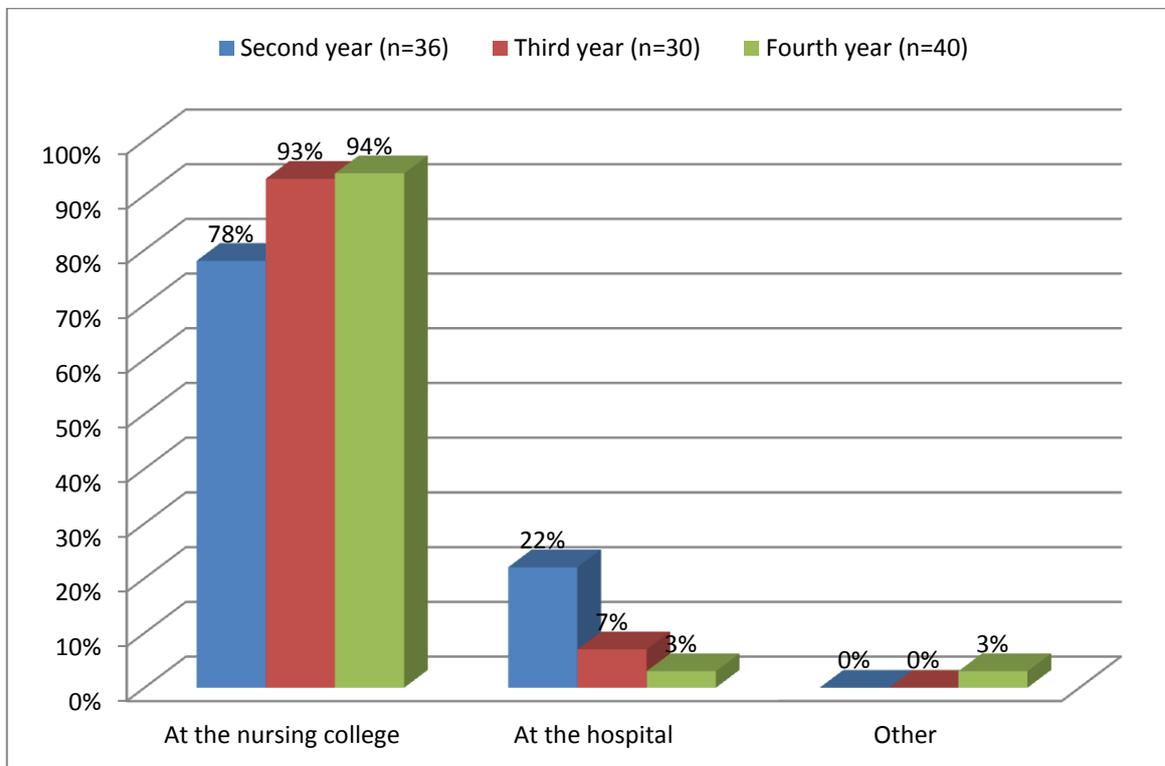


Figure 4.49 Responses of the student nurses on location of the simulation laboratory (N=106)

Seventy eight percent (n=28) of second year student nurses indicated nursing college as the location of the simulation laboratory as compared to 93% (n=28) third year student nurses and 94% (n=38) fourth year student nurses. Twenty two percent (n=8) of second year student nurses indicated hospital as the location of the simulation laboratory as compared to 7% (n=2) third year student nurses and 3% (n=1) fourth year student nurse. Three percent (n=1) of the fourth year student nurses indicated other location. The findings reveal that all student nurses respectively indicated the nursing college as the location of the simulation laboratory.

4.3.6.1.4 Availability of access to the simulation laboratory

This sub-section attempted to investigate whether the student had access to the simulation laboratory.

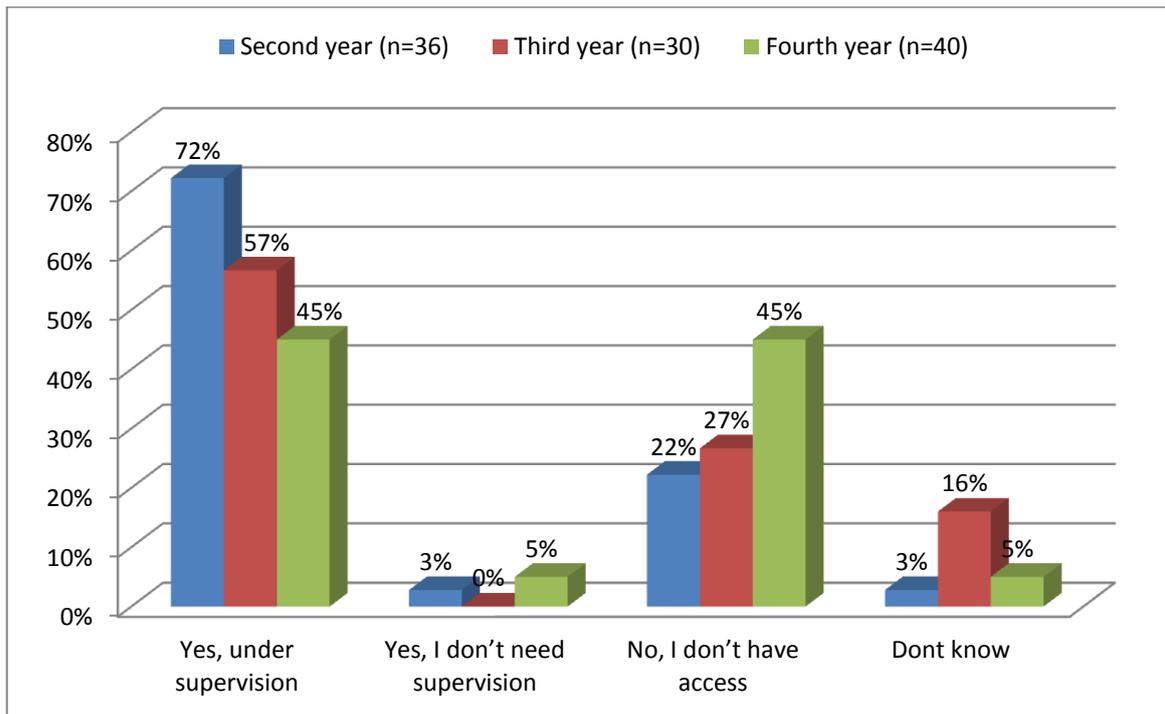


Figure 4.50 Responses of student nurses on availability of access to the simulation laboratory (N=106)

Seventy two percent (n=26) of the second year student nurses indicated that they could access the simulation laboratory under supervision as compared to 57% (n=17) third year student nurses and 45% (n=18) fourth year student nurses. Three percent (n=1) of the second year student nurses indicated that they don't need supervision as compared 5% (n=2) fourth year student nurses. Twenty two percent (n=8) of the second year student nurses indicated that they did not have access to the simulation laboratory as compared to 27% (n=8) third year student nurses and 45% (n=18) fourth year student nurses. Three percent (n=1) of the second year student nurses indicated that they did not know as compared to 16% (n=5) third year student nurses and 5% (n=2) fourth year student nurses.

The findings reveal that 72% of the second year student nurses had access to the simulation laboratory under supervision whereas the third and fourth year student nurses did not have to be supervised during utilisation of the skills laboratory. This could be attributed to the level of maturity of the third and fourth year student nurses as compared to the second year student nurses. Morgan (2006:160) is of opinion that if student nurses are given the opportunity to practice the skills in the simulation laboratory, it will prepare them adequately for clinical placement. Lasater (2007) cited in

Sanford (2010:1007) points out that experiential learning such as simulation allows the student to experience both the good and the bad aspects of working with patients as a nurse. The simulated experience is not just a flat experience but also rather one rich with dimension.

4.3.6.1.5 Person(s) who accompany student nurses to the simulation laboratory

In this sub-section, the respondents had to indicate who were the instructor who accompanied them to the simulation laboratory.

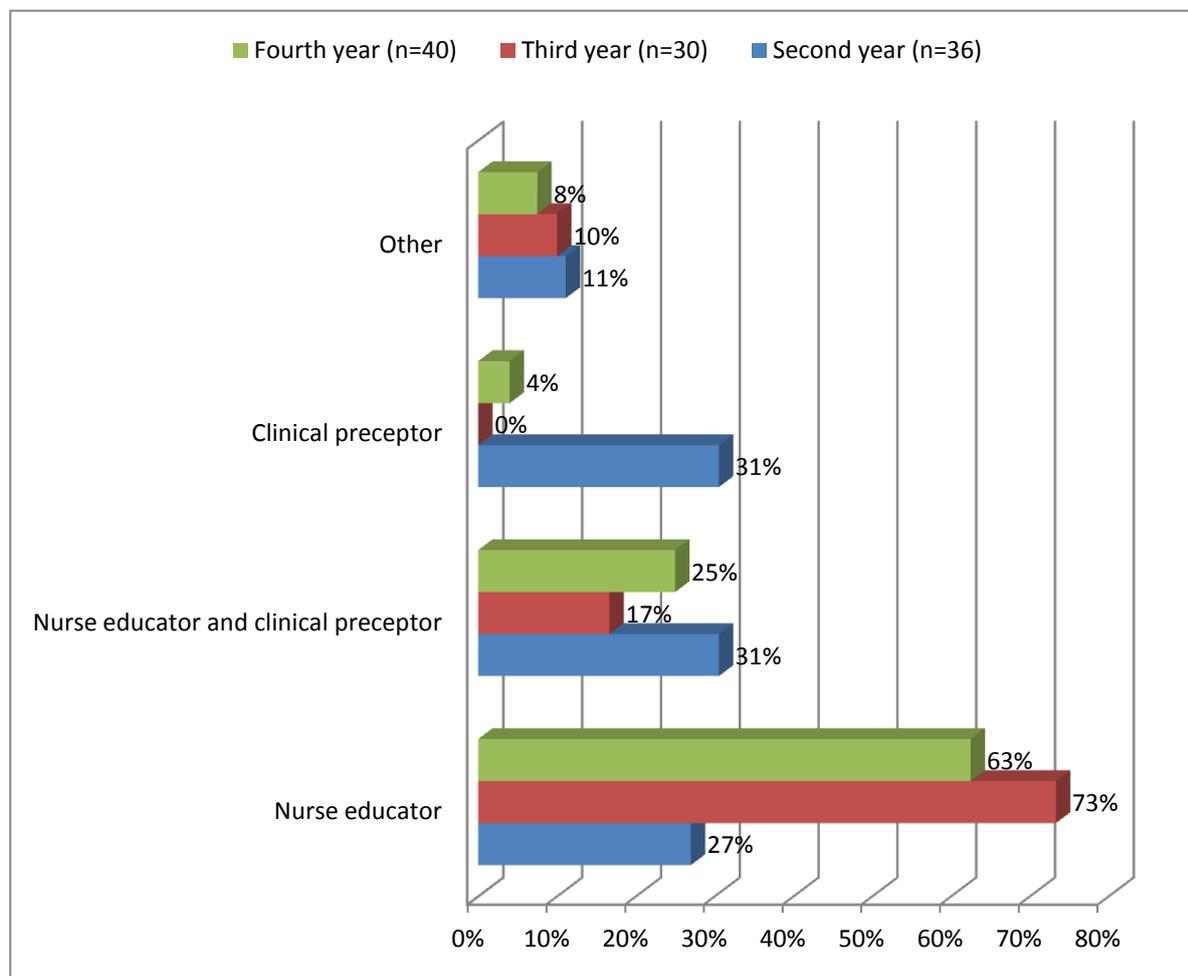


Figure 4.51 Responses of student nurses on person(s) who accompany them to the simulation laboratory (N=106)

Twenty seven percent (n=10) of the second year student nurses indicated person responsible for accompaniment to the simulation laboratory as the nurse educator as compared to 73% (n=22) third year student nurses and 63% (n=25) fourth year student nurses. Thirty one percent (n=11) of the second year student nurses indicated the nurse

educator and clinical preceptor as compared to 17% (n=5) third year student nurses and 25% (n=10) fourth year student nurses. Thirty one percent (n=11) of the second year student nurses indicated clinical preceptor as compared to 4% (n=2) fourth year student nurses. Eleven percent (n=4) of the second year student nurses indicated other person as compared to 10% (n=3) third year student nurses and 8% (n=3) fourth year student nurses. The findings reveal that the third (73%) and fourth year (63%) of student nurses were accompanied by the nurse educator more than the second (27%) year student nurses. The second year student nurses (31%) were accompanied more by the nurse educator and the clinical preceptor.

Morgan (2006:160) views the responsibility of accompaniment of student to the simulation laboratory nurses as both the nurse educators and clinical preceptors. This view is consistent with the fact that in this study it was revealed that clinical supervision is done largely by senior professional nurses in the wards.

4.3.6.1.6 Frequency of attendance of the simulation laboratory sessions

In this sub-section the student nurses had to indicate how often they attended sessions in the simulation laboratory.

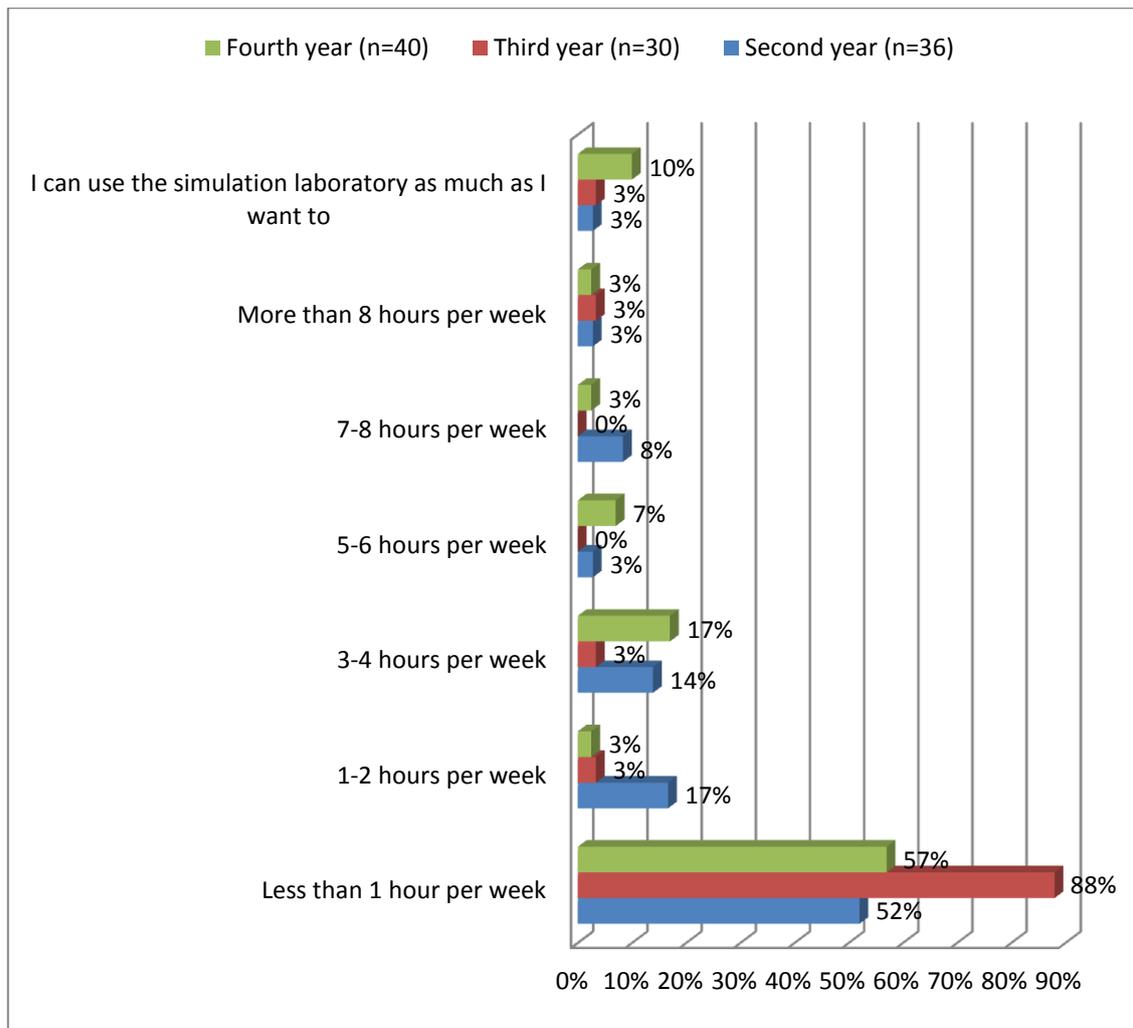


Figure 4.52 Responses of student nurses on frequency of attendance of the simulation laboratory sessions (N=106)

Fifty two percent (n=19) of the second year student nurses indicated that they attended the simulation sessions less than one hour per week as compared to 88% (n=26) of the third year student nurses and 57% (n=23) of the fourth year student nurses. Seventeen percent (n=6) of the second years attended the simulation sessions between one and two hours per week as compared to 3% (n=1) of the third year student nurses and 3% (n=1) of the fourth year student nurses. Fourteen percent (n=5) of the second year student nurses attended the simulation sessions between three to four hours per week as compared to 3% (n=1) of the third year student nurses and 17% (n=7) of the fourth year student nurses. Three percent (n=1) of the second year student nurses attended the simulation sessions for five to six hours per week as compared 7% (n=3) of the fourth year student nurses. Eight percent (n=3) of the second year student nurses attended the simulation sessions 7-8 hours per week as compared to 3% (n=1) fourth year student nurses. Three percent (n=1) of the second year student nurses attended

the simulation sessions more than eight hours per week as compared to 3% (n=1) of the third year student nurses and 3% (n=1) of the fourth year student nurses. Three percent (n=1) of the second year student nurses indicated that they can use the simulation laboratory as much as they want as compared to 3% (n=1) of the third year student nurses and 10% (n=4) of the fourth year student nurses. The majority namely 52%, 88% and 57% of the second, third and fourth year student nurses respectively practiced skills for less than one hour per week. The results also indicated that third year student nurses attended the simulation laboratory much more than the second and fourth student nurses.

Sanford (2010:1007) found that students in smaller groups of 12 who attend to laboratory sessions one day each week, replacing a clinical day and who are accompanied by a nursing faculty facilitator, stated that simulation served as a bridge to bring the information from the classroom and the psychomotor skills learned together in a safe environment greatly benefitted them to adjust to the clinical setting.

In a study by Lasater (2007:272) it was found that the reaction of the students was favourable to the scenarios presented during simulation and students felt the simulation was a superior method to just reading about a particular disease or condition. Also mentioned by the students was the depth of the experience. While participating in a clinical rotation as a student they may never see a particular type of patient, whereas with simulation many things become possible. Students stated they now realised the gravity of what could happen in a real clinical setting when a patient is not doing well, and they felt the simulation experience will make them more aware when checking allergies and administering medications.

4.3.6.1.7 Subject that receives the most attention during simulation

In this subsection, the respondents were required to indicate which subject they regarded as been given the most attention during the simulation in the laboratory.

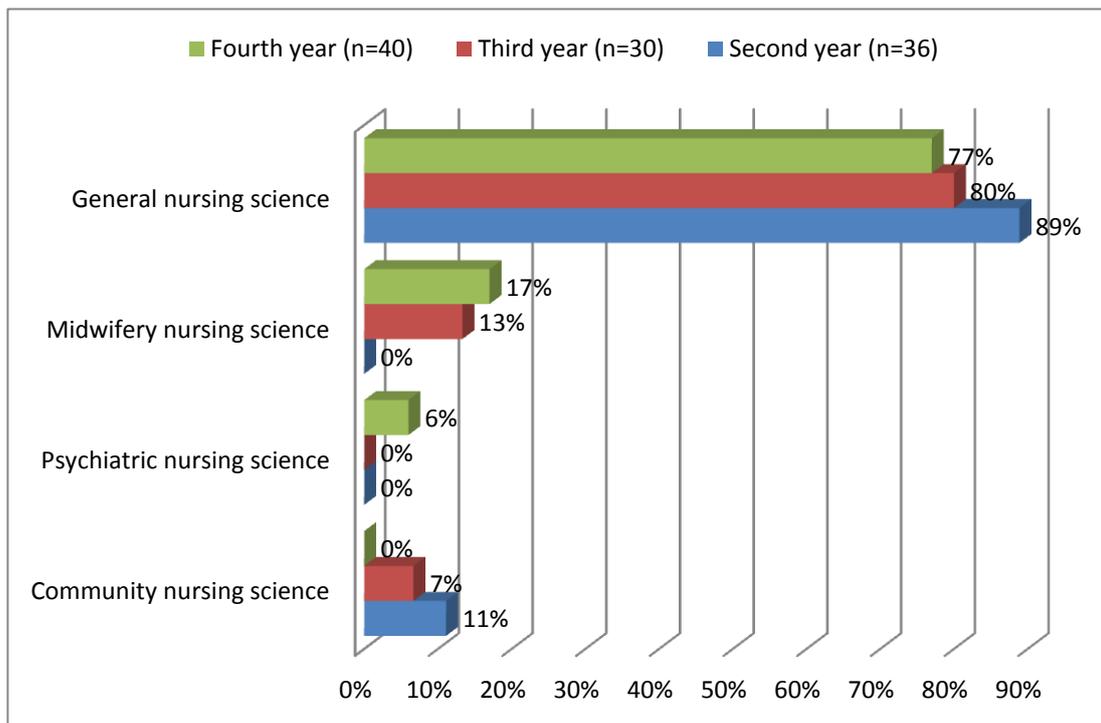


Figure 4.53 Responses of student nurses on the subject that receives the most attention during simulation (N=106)

Eleven percent (n=4) of the second year student nurses indicated the subject that receives the most attention during simulation as community nursing science as compared to 7% (n=2) third year student nurses. Six percent (n=2) of the fourth year student nurses student nurses indicated psychiatric nursing science. Thirteen percent (n=4) of the third year student nurses indicated midwifery as compared to 17% (n=7) fourth year student nurses. Eighty nine percent (n=32) of the second year student nurses indicated general nursing science as compared to 80% (n=24) third year student nurses and 77% (n=31) fourth year student nurses. Second year student nurses did not indicate any response for midwifery and psychiatric nursing because they do the subjects from their third year level. There was consistency amongst the second 89%, third 80% and fourth-year 77% student nurses that simulation laboratory is largely used for simulation of general nursing science skills. These findings are consistent with the findings in section 4.3.3.2.2 that revealed that the proficiency tests passed before placement in the clinical area were general nursing science clinical followed by fundamental nursing science clinical.

4.3.6.1.8 Skills that student nurses perform in the simulation laboratory

This open-ended question allowed the student nurses to list skills that they perform in the simulation laboratory.

Table 4.3 Skills performed in the simulation laboratory

General nursing science	Community nursing science	Midwifery	Psychiatric nursing science
<ul style="list-style-type: none"> • Bed bath • Bed making • Application of bandage • Position changing • Checking of vital signs • Weighing • Changing of a colostomy bag • Urinalysis • Glucose monitoring • Checking of emergency trolley • Catheterisation • Hand scrubbing • Gowning and gloving • Giving of oral medication and injections • Wound dressing • Wound irrigation • Changing of underwater drainage • Suturing of a minor wound • Removal of sutures and clips • History taking • Physical examination • Patient teaching • Insertion of intravenous infusion • Admission and patient discharge • Insertion of nasogastric tube • Suctioning of a patient • Collection of blood from a vein • Installation of ear and eye drops • Blood transfusion • Opening of a sterile pack • Assisting the Doctor during lumbar puncture 	<ul style="list-style-type: none"> • Immunisation • Family planning • Packaging of cooler bag for immunisation • Preparation of oral rehydration • Visual equity test 	<ul style="list-style-type: none"> • Fundal height measurement • Vulvae swabbing • Abdominal palpation • Pelvic assessment • Examination of a placenta • Examination of a newborn • Post natal examination • Plotting of a partogram • Delivery technique 	<ul style="list-style-type: none"> • Nurse patient relationship

The above findings are consistent with the findings in section 4.3.6.1.7 that general nursing science skills receives the most attention in the simulation laboratory and section 4.3.3.2.2 that the proficiency test are passed in both general nursing and fundamental nursing science clinical.

In a study conducted by Rauen (2004:46) it was found that drug administration was utilised most frequently, and with the use of the drug recognition unit, the simulator will respond physiologically. For example, a simulated morphine injection will cause the pupil size of the mannequin to change and the respiratory rate, heart rate, and blood pressure to decrease. The response to any drug depends on the dose of the drug and the weight and clinical condition of the simulated patient at the time. Instructors can pause the simulation to review assessments, detect problems, or discuss treatment.

4.3.6.1.9 Availability of opportunity to practice skills during simulation sessions

In this sub-section, the respondents were required to indicate what opportunities existed to practice skills in the simulation laboratory.

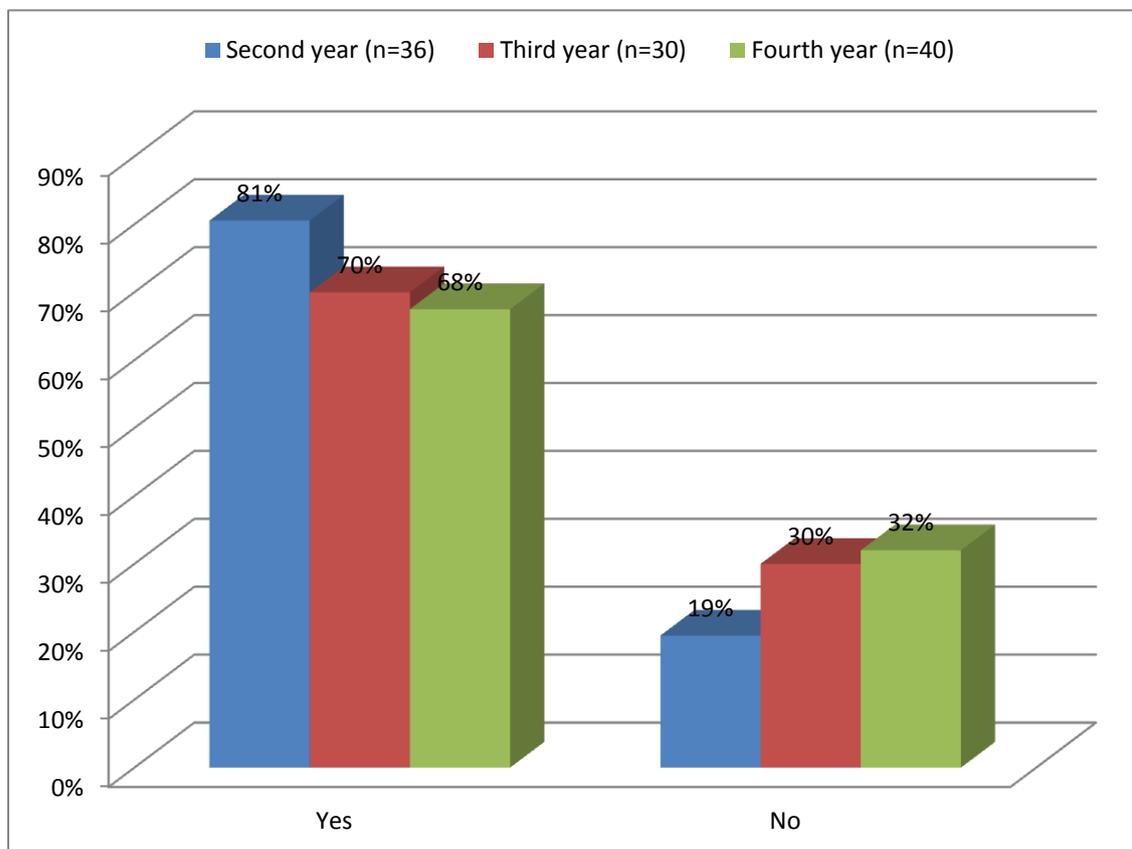


Figure 4.54 Responses of student nurses on whether there are opportunities to practice skills during simulation sessions (N=106)

Eighty one percent (n=29) of second year student nurses indicated that opportunities were available to practice skills as compared to 70% (n=21) third year student nurses and 68% (n=27) fourth year student nurses. The findings revealed that student nurses had the opportunity to practice skills, and that the second year (81%) student nurses had better opportunities to practice the skills than the third year (70%) student nurses and the fourth year (68%) student nurses.

Hawke (2002) reflects that "we are now teaching in a time that has been labeled as the 'information era'. In the past, much of teaching was memorisation. Now we're challenged by the fact that we can't teach all that the students will need to know. Instead, we must teach them to think." Rauen (2004:46) lists three teaching goals needed to be successful: "First, the nurse must learn complex content, then learn to integrate that information in a dynamic setting, and then they utilise their learning and think both quickly and critically."

Hawke (2002) reflects that "while simulation helps the student in clinical settings and also aids in teaching critical thinking, it isn't intended to be a replacement for clinical experience". Rauen (2004:46) views the use of simulation as an opportunity to test skills learned, but possibly not practiced, in clinical settings. For example, "An advanced practice nurse studying midwifery may go through an entire clinical experience without having a patient with postpartum hemorrhage," Rauen says. "So, although she may have learned the theory, she has not had an opportunity to have hands-on practice. The simulator allows that nurse to experience that situation."

4.3.6.1.10 Availability of instruments or written procedures to follow during simulation sessions

In this sub-section, the availability of instruments or written procedures were investigated. Students had to indicate whether these were present or not.

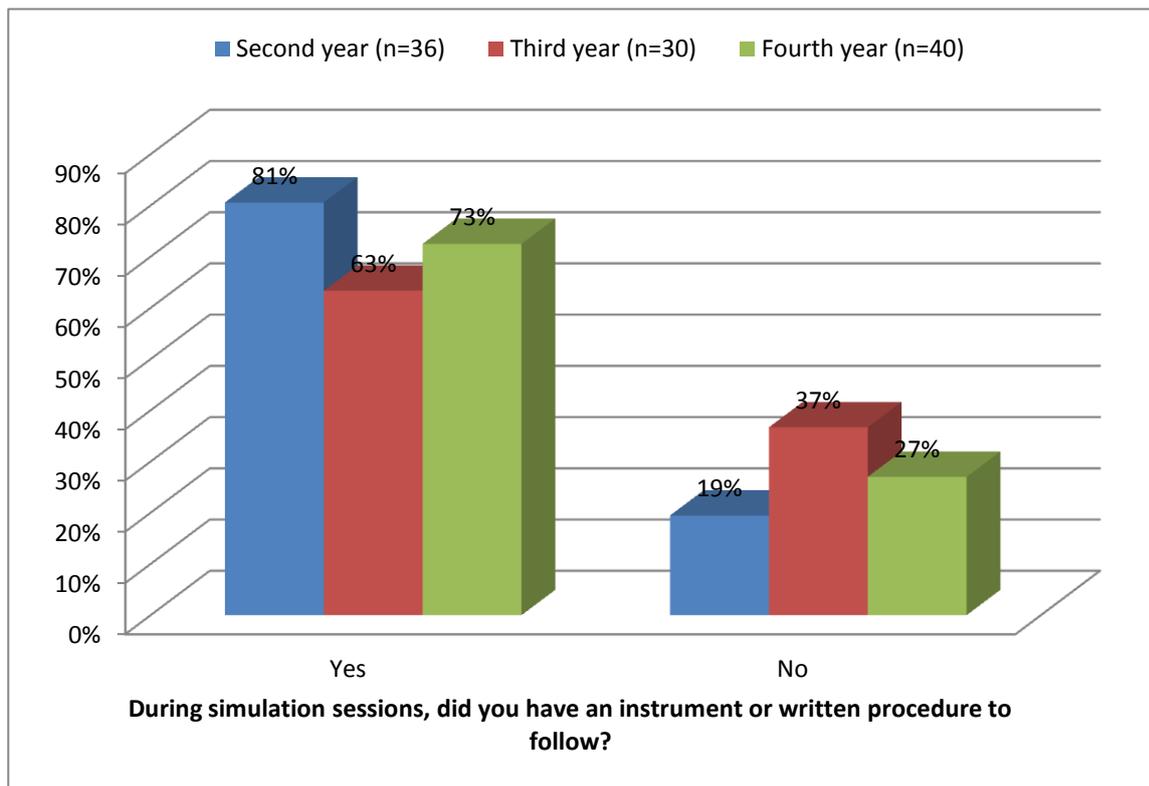


Figure 4.55 Responses of student nurses on whether an instrument or written procedure is available to follow during simulation sessions (N=106)

Eighty one percent (n=29) of the second year student nurses indicated the availability of an instrument or written procedure to follow during simulation sessions as compared to 63% (n=19) third year student nurse and 73% (n=29) fourth year student nurses. Nineteen percent (n=7) of the second year student nurses indicated that an instrument or written procedure was not available as compared to 37% (n=11) third year student nurses and 27% (n=11) fourth year student nurses. The findings indicate that the nursing college has instruments or written procedures available for student nurses to follow during simulation sessions. Second year (81%) student nurses followed written procedure during simulation more than third year (63%) student nurses and fourth year (73%) student nurses.

In a book on policies and procedures written especially for the use of simulation in laboratories, Castaldi and Schubert (2009:11) emphasise that the simulation laboratory must be seen as the real situation and that all precautions such as wearing of masks, gloves and all safety and infection control measures must be adhered to. To enable students to optimally learn how to do procedures it is necessary to provide written

guidelines and apply strict policies and procedures so that it becomes a habit in the real clinical practice.

4.3.6.1.11 *Demonstration of skills by the supervisor (nurse educator/clinical preceptor) before giving the opportunity to practice the skill*

In this sub-section the respondents were asked if the clinical preceptor or nurse educator actually demonstrated skills before giving the student nurses the opportunity to practice these skills.

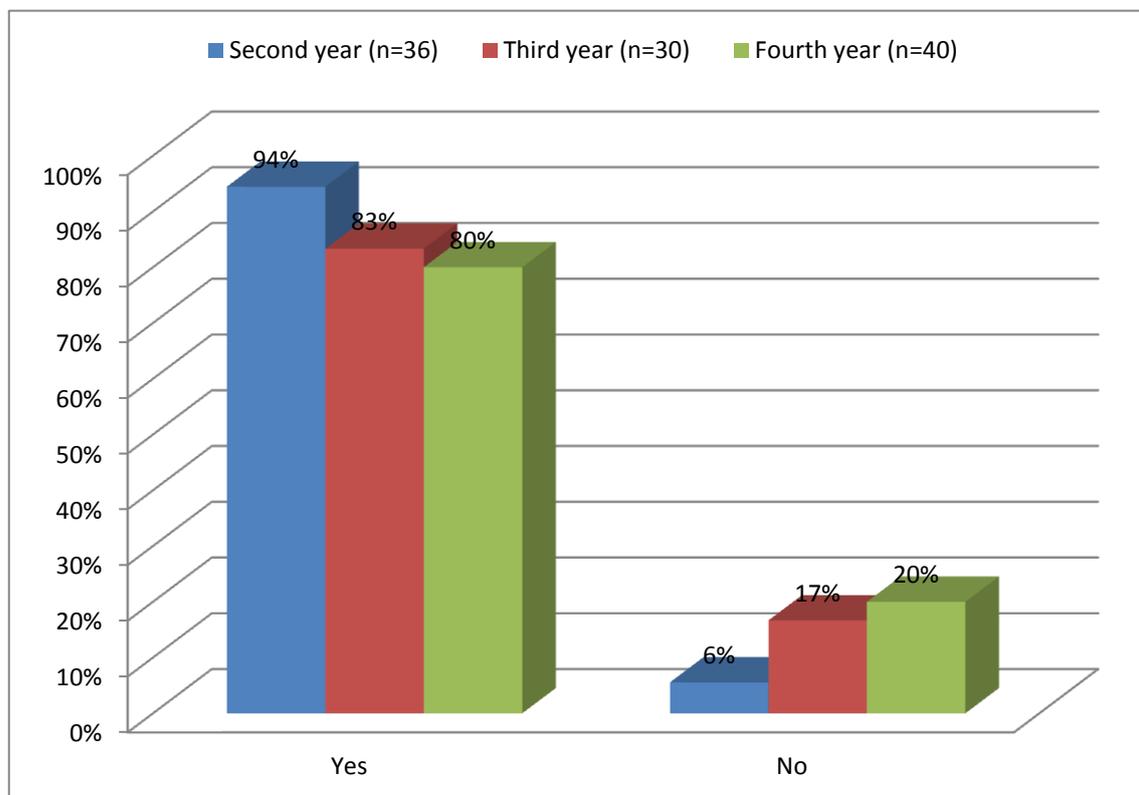


Figure 4.56 Responses of student nurses on whether skills were demonstrated by the nurse educator/clinical preceptor before they could practice the skill (N=106)

Ninety four percent (n=34) of the second year student nurses indicated that skills were demonstrated by the nurse educator/clinical preceptor before they could practice as compared to 83% (n=25) third year student nurses and 80% (n=32) fourth year student nurses. Six percent (n=2) of the second year student nurses indicated that skills were not demonstrated as compared to 17% (n=5) third year student nurses and 20% (n=8) fourth year student nurses. The findings reveal that the supervisor demonstrate skills before giving opportunity to students to practice and second year student nurses 94%

were given opportunity to practice skills more that the third 83% and fourth 80% year student nurses. These findings are consistent with Morgan`s views (2006:160) that skills demonstration is vital before student nurses are given the opportunity to practice. The findings are also consistent with the findings in section 4.3.6.1.6 where student nurses consistently indicated that they practice skills less than one hour per week.

4.3.6.1.12 Availability of feedback on performance after the simulation sessions

In this sub-section, the respondents were asked if there was any feedback given by the nurse educators and/or clinical preceptors after the simulated experiences.

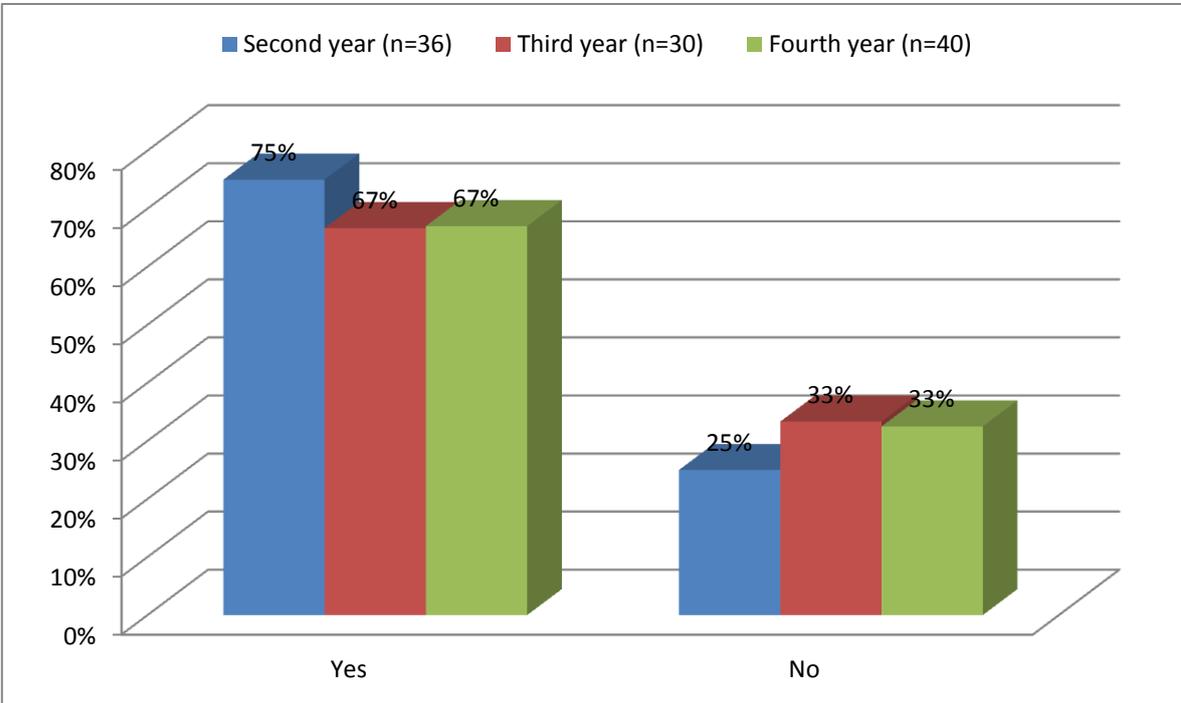


Figure 4.57 Responses of student nurses on whether there was availability of feedback after simulation sessions (N=106)

Seventy five percent (n=27) of the second year student nurses indicated that feedback was given after simulation sessions as compared to 67% (n=20) third year student nurses and 67% (n=27) fourth year student nurses. Twenty five percent (n=9) of the second year student nurses indicated that feedback was not provided as compared to 33% (n=10) third year student nurses and 33% (n=13) fourth year student nurses. The findings show that student nurses receive feedback. Second year (75%) student nurses receive feedback more than the third (67%) and fourth-year (67%) student nurses. The findings could be attributed to the fact that second year student nurses had better

opportunities to practice skills more than the third and fourth year student nurses (see section 4.3.6.1.11). According to Hanson and Stenvig (2008:39) and Kelly (2007:887), positive feedback can increase self esteem whereas negative feedback can discourage and frustrate the students. The authors further state that giving of immediate and constructive written feedback was an important attribute. Castaldi and Schubert (2009:11) emphasise debriefing after each clinical simulation experience and state that often simulation laboratories are equipped with video cameras which enable students to get feedback and point out any deficiencies in the skills performed.

4.3.6.1.13 Person(s) that give feedback

In this sub-section, respondents were required to indicate who the person or persons were who provided feedback after the simulated experiences.

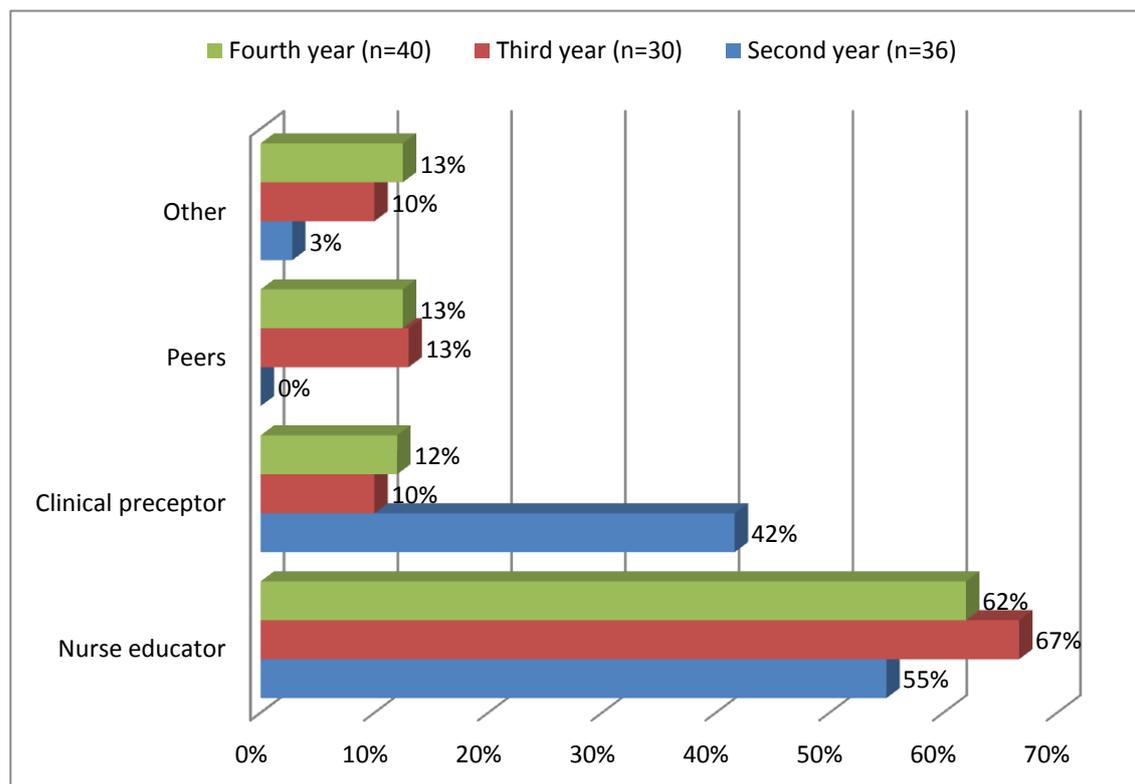


Figure 4.58 Responses of student nurses on person(s) that gave feedback (N=106)

Fifty five percent (n=20) of the second year student nurses indicated the individuals responsible for giving feedback as nurse educators as compared to 67% (n=20) third year student nurses and 62% (n=25) fourth year student nurses. Forty two percent

(n=15) of the second year student nurses indicated clinical preceptors as compared to 10% (n=3) third year student nurses and 12% (n=5) fourth year student nurses. Thirteen percent (n=4) of the third year student nurses indicated peers as compared to 13% (n=5) fourth year student nurses. Three percent (n=1) of the second year student nurses indicated other persons as compared to 10% (n=3) third year student nurses and 13% (n=5) fourth year student nurses. The findings reveal that nurse educators provide feedback and the findings are consistent with section 4.3.6.1.5 where student nurses revealed that nurse educators were responsible for skills demonstration in the simulation laboratory. The second year (31%) student nurses were of the opinion that both nurse educators and clinical preceptors are responsible for feedback in the simulation session as reflected in section 4.3.6.1.5 where they indicated that both nurse educators and clinical preceptors were responsible for skills demonstration in the simulation laboratory.

Jefferies and Rizzolo (2006:5) state those qualified faculties who have been trained in simulation assume the educator role during the simulated learning experience. The educator role can be played by clinical staff or staff specific to the patient simulation laboratory. In either case it is important for the educator to have knowledge of the simulation and the material it covers. Students participating in the simulated learning experience must come into the simulated clinical environment prepared for the simulation with a basic knowledge of the material and dressed appropriately for the clinical experience (Hoffman, O'Donnell & Kim 2007:100). The learning environment provides the foundation for effective simulated patient experiences. Learning occurs when the environment accurately reflects reality and both the student and educator are actively engaged. Simulated experiences offer the opportunity for diverse styles of learning not offered in the class room environment and can result in an increase in confidence felt by the student (Jefferies & Rizzolo 2006:6).

4.3.6.1.14 Frequency of practicing the skill before student nurses was found proficient

In this sub-section the respondents were asked to indicate how often they had to practice the skills before they were found to be proficient.

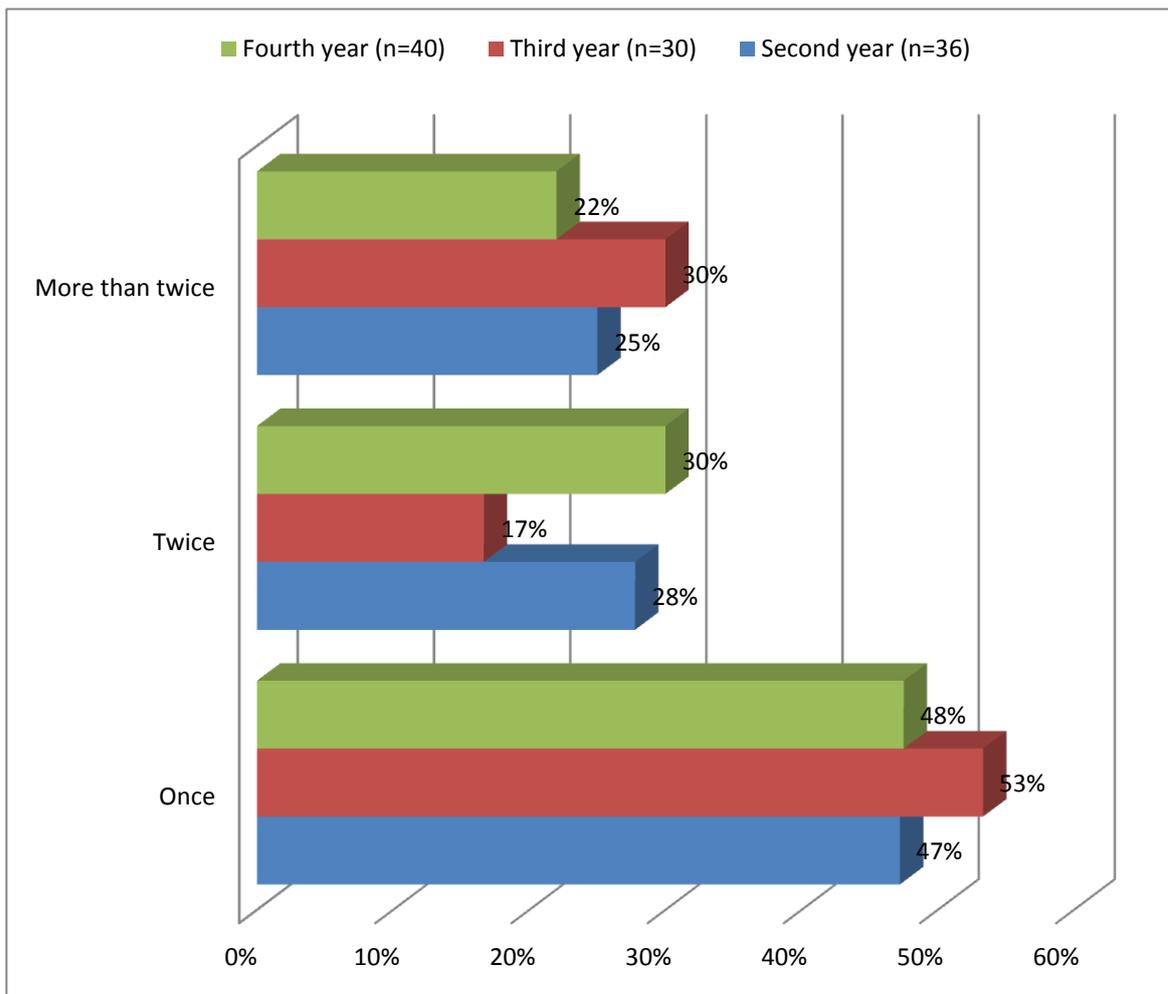


Figure 4.59 Responses of student nurses on frequency of practicing the skill before found proficient (N=106)

Forty seven percent (n=17) of the second year student nurses indicated the frequency of practicing the skill before found proficient as once as compared to 53% (n=16) of the third year student nurses and 48% (n=19) of the fourth year student nurses. Twenty eight percent (n=10) of the second year student nurses indicated twice as compared to 17% (n=5) of the third year student nurses and 30% (n=12) of the fourth year student nurses. Twenty five percent (n=9) of the second year student nurses indicated more than twice as compared to 30% (n=9) of the third year student nurses and 22% (n=9) of the fourth year student nurses. There was consistency amongst the second 47%, third 53% and fourth-year 48% student nurses that they had one opportunity to practice the skills before found to be proficient. These findings contradict the findings in section 4.3.6.1.9 where student nurses consistently indicated that they were given opportunities to practice skills.

4.3.6.1.15 Opinions on whether simulation contributed to the application of skills in the clinical practice

In this subsection, the respondents were asked whether they experienced that the simulated skills contributed to the application of skills in the clinical practice area.

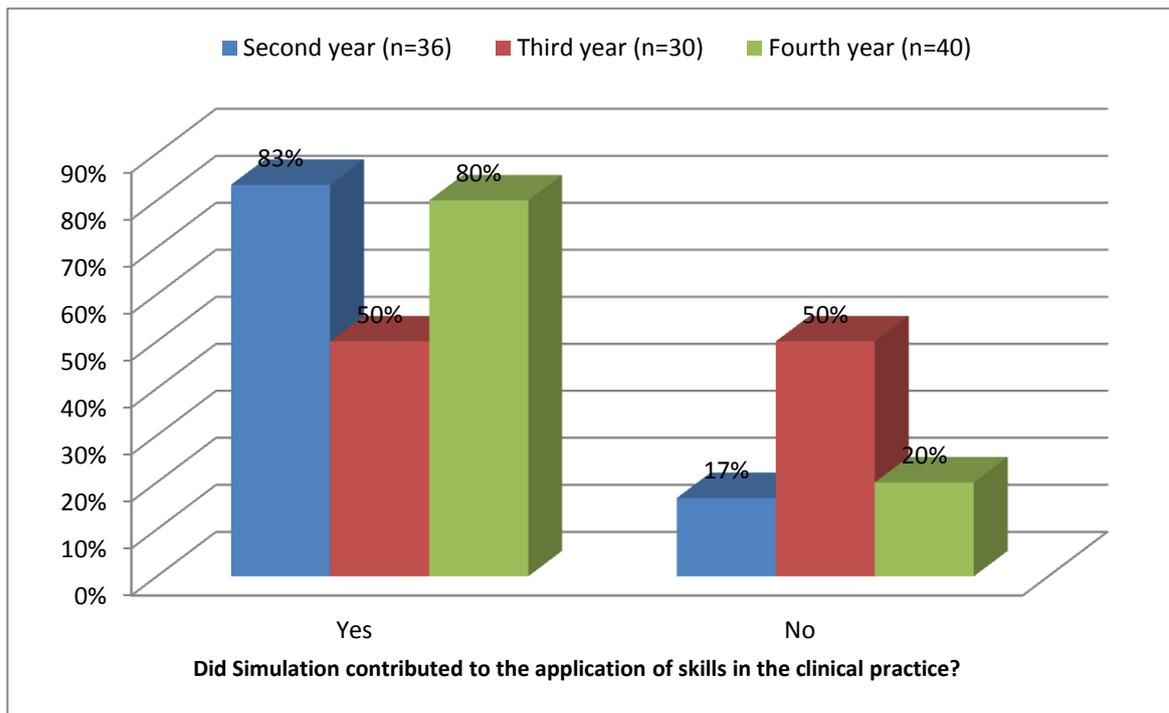


Figure 4.60 Opinions of student nurses on whether simulation contributed to the application of skills in clinical practice (N=106)

Eighty three percent (n=30) of the second year student nurses indicated that simulation contributed to the application of skills in the clinical practice as compared to 50% (n=15) of third year student nurses and 80% (n=32) fourth year student nurses. Seventeen percent (n=6) of the second year student nurses indicated that simulation did not contribute to the application of skills as compared to 50% (n=15) of third year student nurses and 20% (n=8) fourth year student nurses. These findings are consistent with the views of Morgan (2006:155) as discussed in section 2.3.1. It was a concern that 50% of the third year student nurses found less benefit from simulation.

4.3.6.1.16 Meaning of simulation to student nurses

In this sub-section, the respondents were asked to provide the meaning which they assigned to the simulation.

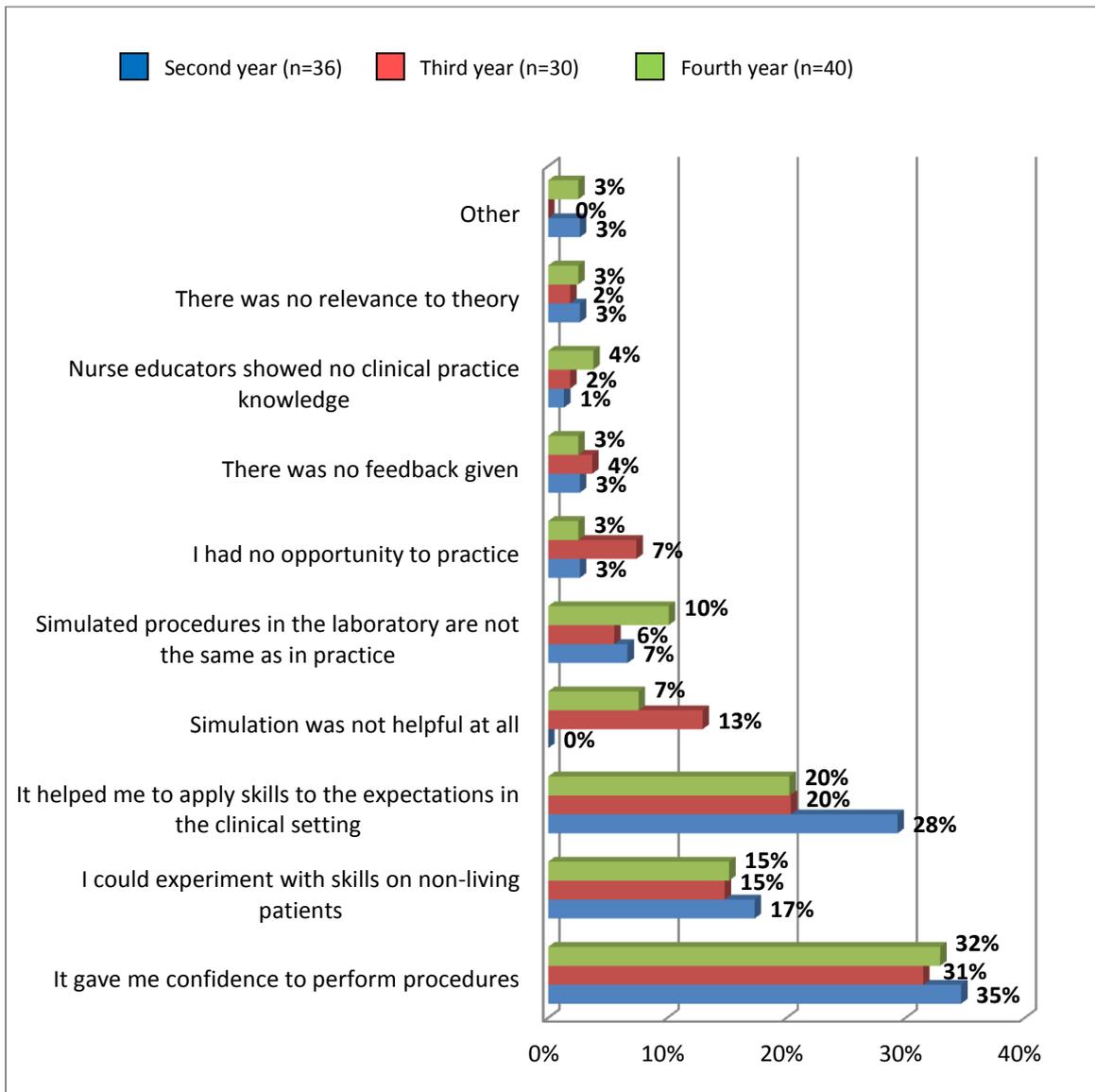


Figure 4.61 Responses of student nurses on the meaning of simulation (N=106)

Thirty five percent (n=26) of the second year student nurses indicated that simulation gave them confidence to perform procedures as compared to 31% (n=17) third year student nurses and 32% (n=26) fourth year student nurses. Seventeen percent (n=13) of the second year student nurses indicated that they could experiment with skills on non-living patients as compared to 15% (n=8) third year student nurses and 15% (n=12) fourth year student nurses. Twenty eight percent (n=22) of the second year student nurses indicated that it helped them to apply skills to their expectations in the clinical setting as compared to 20% (n=11) third year student nurses and 20% (n=16) of the fourth year student nurses. Thirteen percent (n=7) of the third year student nurses indicated that simulation was not helpful as compared to 7% (n=6) of the fourth year

student nurses. Seven percent (n=5) of the second year student nurses indicated that simulated procedures in the laboratory are not the same as in practice as compared to 6% (n=3) of the third year student nurses and 10% (n=8) of the fourth year student nurses. Three percent (n=2) of the second year student nurses indicated that they had no opportunity to practice as compared to 7% (n=4) third year student nurses and 3% (n=2) fourth year student nurses. Three percent (n=2) of the second year student nurses indicated that there was no feedback as compared to 4% (n=2) third year student nurses and 3% (n=2) fourth year student nurses. One percent (n=1) of the second year student nurses indicated that nurse educators showed no clinical practice knowledge as compared to 2% (n=1) of third year student nurses and 4% (n=3) of the fourth year student nurses. Three percent (n=2) of the second year student nurses indicated that there was no relevance to theory as compared to 2% (n=1) third year student nurses and 3% (n=2) fourth year student nurses. Three percent (n=2) of the third year student nurses stated other reasons as compared to 3% (n=2) fourth year student nurses. There was consistency amongst the second 35%, third 31% and fourth-year 32% student nurses that simulation is mostly beneficial in ensuring that student nurses gains confidence in performing of procedures. The findings are consistent with the views of Morgan (2006:155).

4.3.6.1.17 Feelings competent after laboratory session

In this sub-section, the respondents were asked whether they felt competent after the simulated laboratory skills experiences.

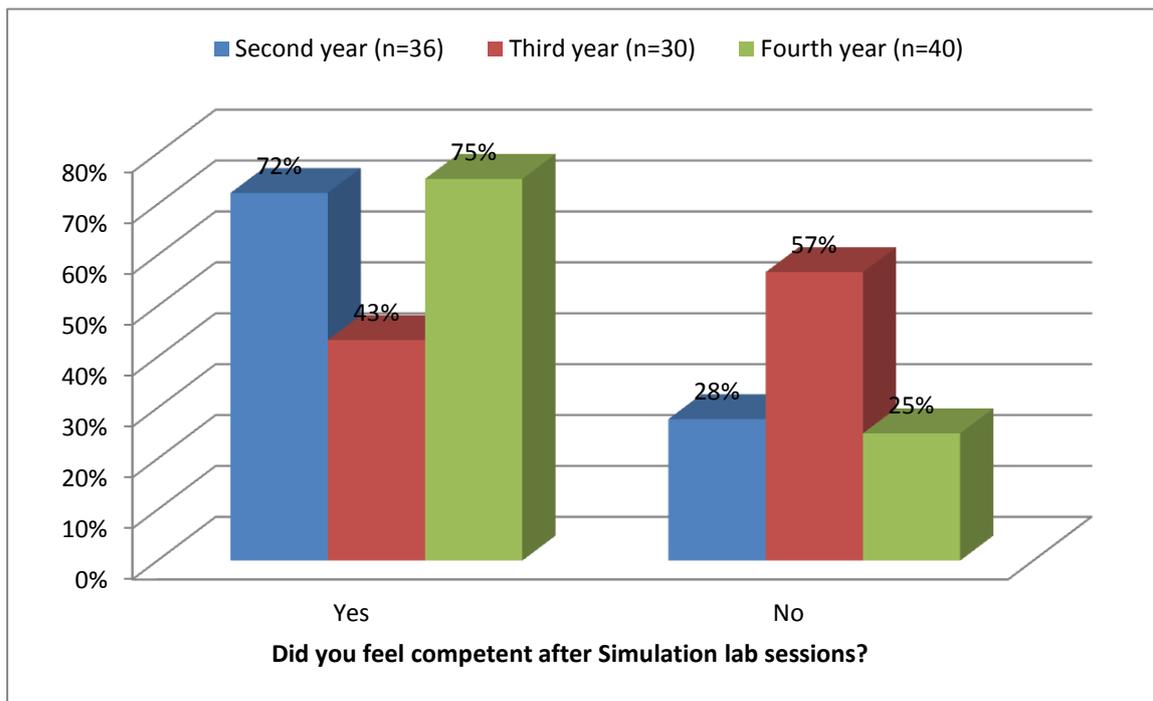


Figure 4.62 Responses of student nurses on whether they felt competent after laboratory session (N=106)

Seventy two percent (n=26) of the second year student nurses indicated that they felt competent after laboratory sessions as compared to 43% (n=13) of the third year student nurses and 75% (n=30) of the fourth year student nurses. Twenty eight percent (n=10) of the second year student nurses indicated that they did not feel competent as compared to 57% (n=17) of the third year student nurses and 25% (n=10) of the fourth year student nurses. Although second 72% and fourth-year 75% student nurses indicated that they felt competent after laboratory session, the majority, namely 57% of third year student nurses did not feel competent. These could be attributed to the fact that student nurses are not given enough opportunity to practice the skills as revealed in section 4.3.6.1.12 and 4.3.6.1.14.

4.3.6.2 Clinical practice

This section deals with the teaching strategies adopted by the accompanist during clinical accompaniment and the role of teamwork during clinical accompaniment.

4.3.6.2.1 Teaching strategies used by the accompanist during clinical

In this sub-section, the respondents were asked to indicate teaching strategies used by the accompanist during clinical practice.

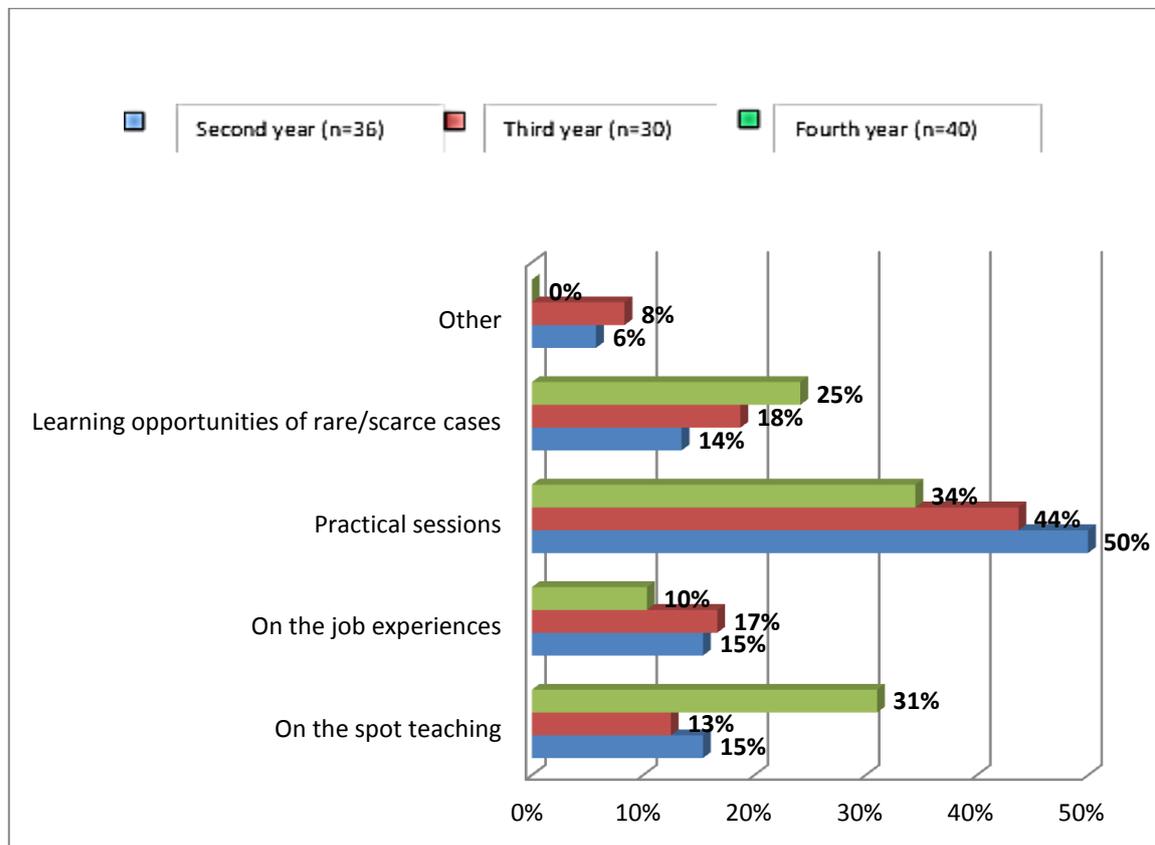


Figure 4.63 Responses of student nurses on teaching strategies used by the accompanist during clinical accompaniment (N=106)

Fifteen percent (n=8) of the second year student nurses indicated the teaching strategies used by the clinical accompanist as on the spot teaching as compared to 13% (n=6) of third year student nurses and 31% (n=18) fourth year student nurses. Fifteen percent (n=8) of the second year student nurses indicated on the job experiences as compared to 17% (n=8) of the third year student nurses and 10% (n=6) of the fourth year student nurses. Fifty percent (n=26) of the second year student nurses indicated practical sessions as compared to 44% (n=21) third year student nurses and 34% (n=20) of the fourth year student nurses. Fourteen percent (n=7) of the second year student nurses indicated learning opportunities of rare/scarcce cases as compared to 18% (n=9) third student nurses and 25% (n=14) of the fourth year student nurses. Six percent (n=3) of the second year student nurses indicated other teaching

strategies as compared to 8% (n=4) of fourth year student nurses. The findings reveal that practical sessions are mostly used by the clinical accompanists. These findings are consistent with those in section 4.3.5.8 wherein demonstrations are found to be used in the clinical area.

In a study conducted by Sharif and Masoumi (2005:6) it was found that nursing students were not satisfied with the clinical component of their education. They experienced anxiety as a result of feeling incompetent and lack of professional nursing skills and knowledge to take care of various patients in the clinical setting. The students mostly mentioned their instructor's role as an evaluative person. The majority of students had the perception that their instructors have a more evaluative role than a teaching role because the method of teaching in the clinical situation was not satisfactory.

4.3.6.2.2 Encouragement of team work in the learning process

In this sub-section, respondents were asked to indicate if teamwork was encouraged during the learning process.

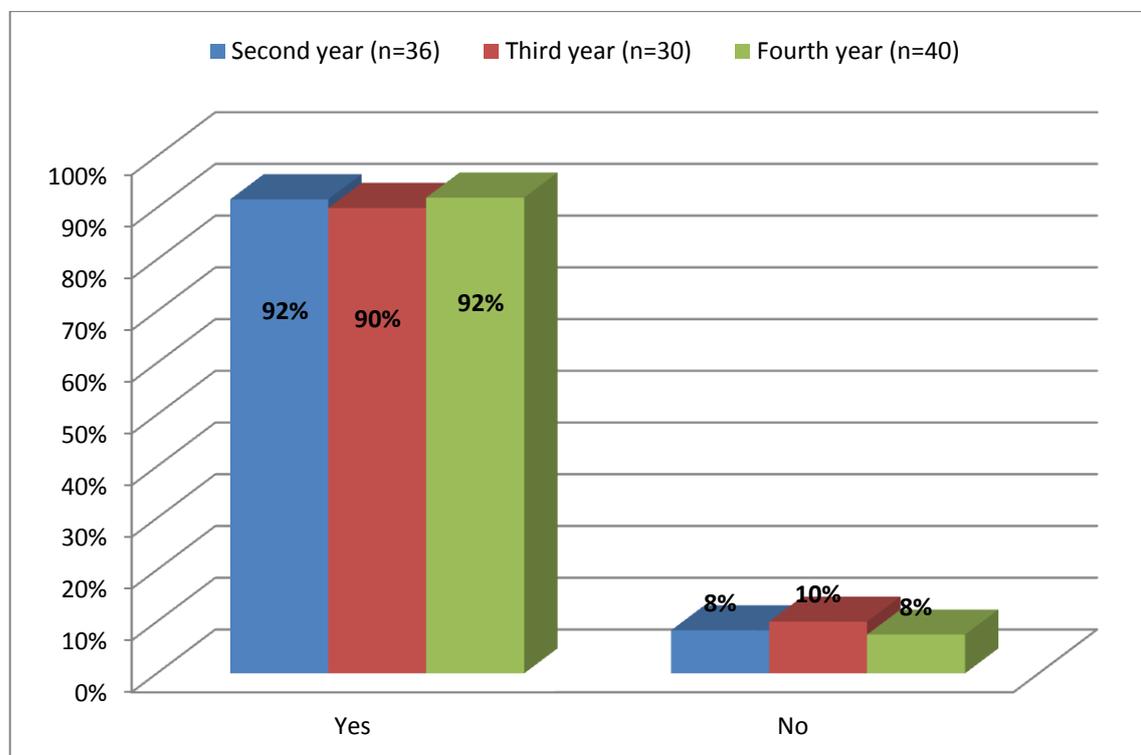


Figure 4.64 Responses of student nurses on whether team work was encouraged during the learning process (N=106)

Ninety two percent (n=33) of the second year student nurses indicated that team work was encouraged during the learning process as compared to 90% (n=26) third year student nurses and 92% (n=36) fourth year student nurses. Eight percent (n=3) of the second year student nurses indicated that team work was not encouraged as compared to 10% (n=24) of the third year student nurses and 8% (n=3) of the fourth year student nurses. The findings reveal that team work was encouraged in the learning process.

Mennenga (2010:4) is of opinion that team-based learning, an innovative teaching strategy, offers educators a structured, student-centered learning environment and may be effective in teaching necessary skills to students. Teamwork facilitates desirable outcomes for learning and include amongst others, critical thinking, professionalism, communication, and interprofessional collaboration. Innovative strategies to enhance team building in the classroom and clinical setting have the potential to transform nursing education and provide a positive teaching and learning environment for both educators and students.

4.3.6.2.3 Contribution of teamwork to learning

In this sub-section, respondents were to indicate how teamwork contributed to their learning.

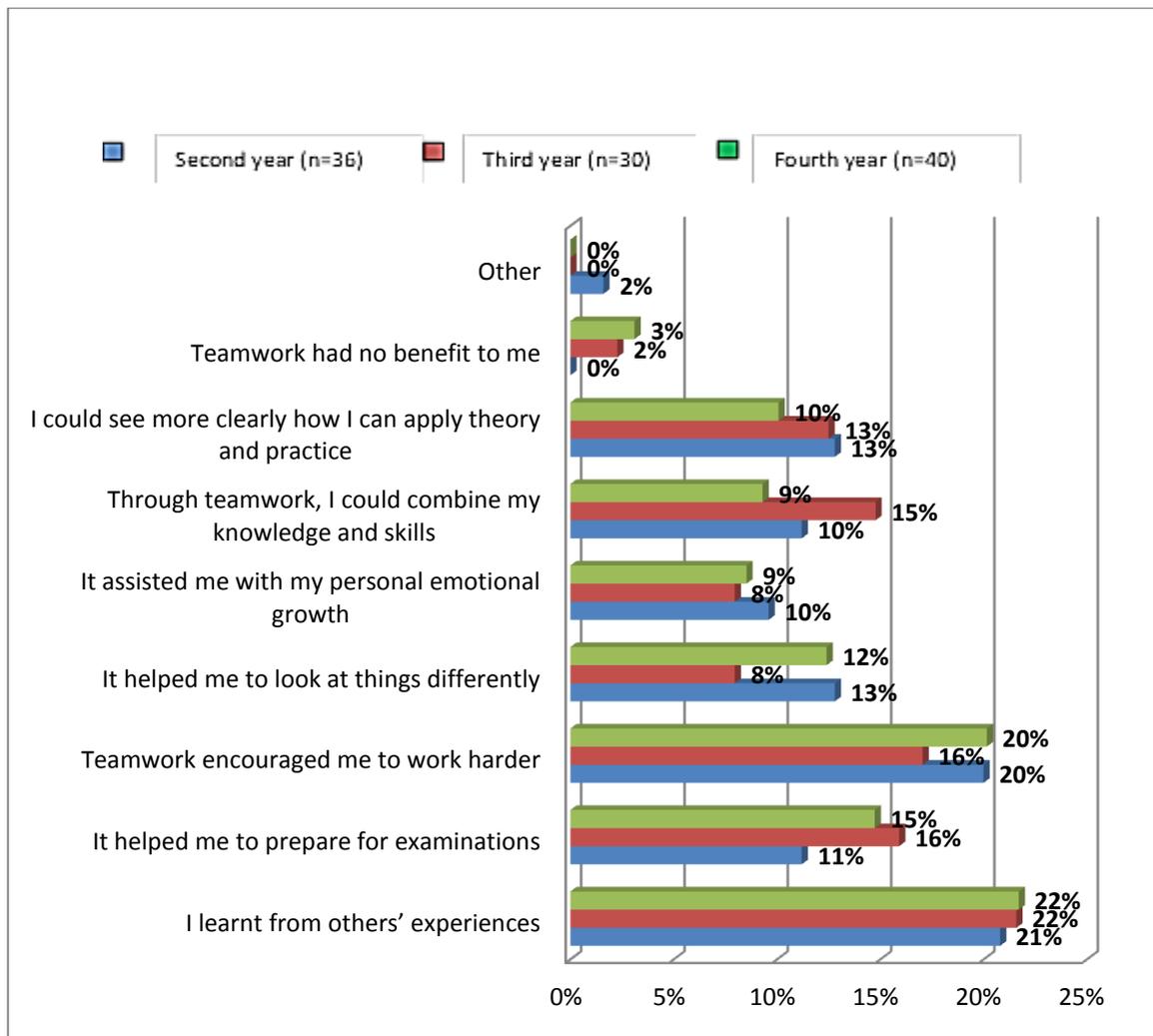


Figure 4.65 Responses on student nurses on contributions of teamwork to learning (N=106)

Twenty one percent (n=26) of the second year student nurses indicated that team work helped them to learn from others' experiences as compared to 22% (n=19) third year student nurses and 22% (n=28) fourth year student nurses. Eleven percent (n=14) of the second year student nurses indicated that it helped them to prepare for the examination as compared to 16% (n=14) third year student nurses and 15% (n=19) fourth year student nurses. Twenty percent (n=25) of the second year student nurses indicated that teamwork encouraged them to work harder as compared to 16% (n=15) third year student nurses and 20% (n=26) fourth year student nurses. Thirteen percent (n=16) of the second year student nurses indicated that it helped them to look at things differently as compared to 8% (n=7) third year student nurses and 12% (n=16) fourth year student nurses. Ten percent (n=12) of the second year student nurses indicated that they were assisted with their personal emotional growth as compared to 8% (n=7) of the third year student nurses and 9% (n=11) of the fourth year student nurses. Ten

percent (n=14) of the second year student nurses indicated that they could combine their knowledge and skills as compared to 15% (n=130) of the third year student nurses and 9% (n=12) of the fourth year student nurses. Thirteen percent (n=16) of the second year student nurses indicated that they could see more clearly how they can apply theory and practice as compared to 13% (n=11) of the third year student nurses and 10% (n=13) of the fourth year student nurses. Two percent (n=2) of the third year student nurses indicated that teamwork had no benefit to them as compared to 3% (n=4) of the fourth year student nurses. Two percent (n=2) of the second year student nurses stated other reasons. There was consistency amongst the student nurses that teamwork encourages them to learn from other's experiences and to work harder. Bradbury-Jones, Sambrook and Irvine (2007:346) revealed that teamwork was empowering for students.

4.3.6.3 Cross tabulation

Cross tabulation was done for question 4.3.6.1 to 4.3.6.2 against the level of study and whether students have ever failed a subject. In certain cases the significance level was $p < 0.005$, but 20%-80% of the cells had expected count of less than five and the chi-square in this case would not be a valid test. It was concluded that there was no association between levels of study, whether students have ever failed a subject and questions in 4.3.6.1 to 4.3.6.2.

4.3.7 Section D: Learning preferences

4.3.7.1 Introduction

The section comprised of 38 Likert scale items where student nurses were to rate themselves from most of the time to seldom or never. Question from 4.3.7.1.1 to 4.3.7.1.12 wanted to establish whether student nurses had the convergent preference in learning. Question from 4.3.7.1.13 to 4.3.7.1.27 wanted to establish whether student nurses had the divergent preference in learning. Question from 4.3.7.1.28 to 4.3.7.1.32 wanted to establish whether student nurses had the assimilation preference in learning and questions 4.3.7.1.33 to 4.3.7.1.38 wanted to establish whether student nurses had the accommodative preference in learning.

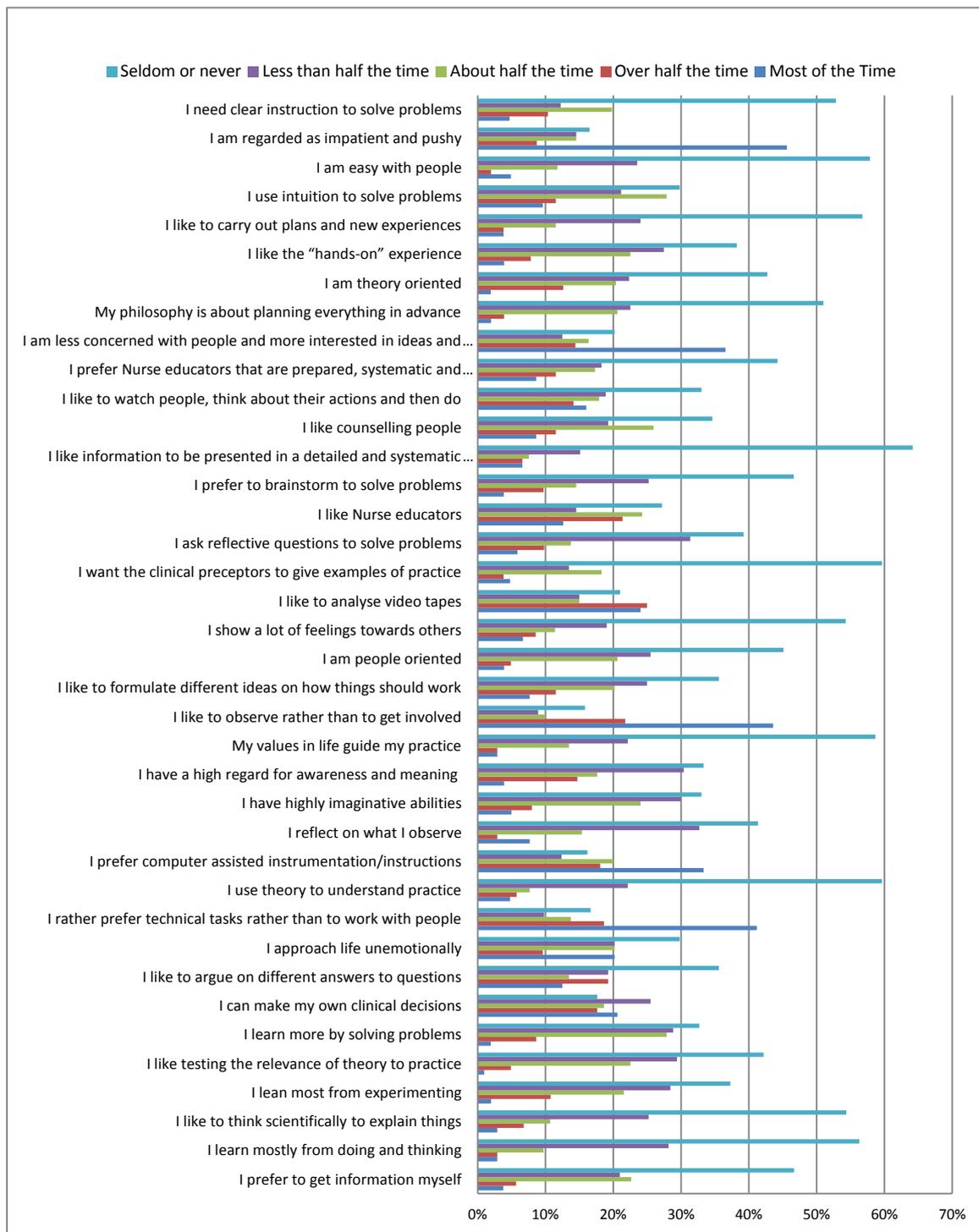


Figure 4.66 Learning preferences of student nurses (N=106)

4.3.7.1.1 Preference in getting information

Four percent (n=4) of student nurses indicated that they preferred to get information on their own most of the time, 6% (n=6) indicated over half of the time, 23% (n=24) indicated about half of the time, 21% (n=22) indicated less than half of the time and

49% (n=49) indicated seldom or never get information on their own. Many, namely 49% of the student nurses seldom or never preferred to seek for information on their own.

4.3.7.1.2 Ability to learn mostly from doing and thinking

Three percent (n=3) of the student nurses indicated that most of the time they learn from doing and thinking, 3% (n=3) indicated over half of the time, 10% (n=10) indicated about half of the time, 28% (n=29) indicated less than half of the time and 54% (n=56) indicated seldom or never learn mostly from doing and thinking. The majority, namely 54% of the student nurses seldom or never mostly learned from doing and thinking.

4.3.7.1.3 Ability to think scientifically to explain things

Three percent (n=3) of the student nurses indicated that they liked to think scientifically to explain things most of the time, 7% (n=7) indicated over half of the time, 11% (n=11) indicated about half of the time, 25% (n=26) indicated less than half of the time, 54% (N=56%) indicated that they seldom or never like to think scientifically to explain things. The majority, namely 54% of the student nurses seldom or never like to think scientifically to explain things.

4.3.7.1.4 Ability to learn most from experimenting

Three percent (n=3) of student nurses indicated that most of the time they learned from experimenting, 11% (n=11) indicated over half of the time, 22% (n=22) indicated about half of the time, 28% (n=29) indicated less than half of the time and 37% (n=38) indicated that they seldom or never learn from experimenting. Many, namely 37% of the student nurses seldom or never learned most from experimenting.

4.3.7.1.5 Ability to test the relevance of theory to practice

One percent (n=1) of student nurses indicated that most of the time they like to test the relevance of theory to practice, 5% (n=5) indicated over half of the time, 23% (n=23) indicated about half of the time, 29% (n=30) indicated less than half of the time and 42% (43%) indicated that they seldom or never like testing the relevance of theory to

practice. Many, namely 43% of the student nurses seldom or never like testing the relevance of theory to practice.

4.3.7.1.6 Ability to learn more by solving problems myself

Two percent (n=2) of student nurses indicated that most of the time they learn more by solving problems themselves, 9% (n=9) indicated over half of the time, 28% (n=29) indicated about half of the time, 29% (n=30) indicated less than half of the time and 33% (n=34) indicated that they seldom or never. Learn more by solving problems themselves. Many, namely 33% of student nurses seldom or never learn more by solving problems themselves.

4.3.7.1.7 Ability to make own clinical decisions

Twenty one percent (n=21) of the student nurses indicated that most of the time they can make their own clinical decisions, 18% (n=18) indicated over half of the time, 19% (n=19) indicated about half of the time, 25% (n=26) indicated less than half of the time and 18% (n=18) indicated that they seldom or never make their own clinical decisions. Many, namely 25% of the student nurses make their own clinical decisions in less half of the time.

4.3.7.1.8 Ability to argue on different answers to questions

Thirteen percent (n=13) of student nurses indicated that most of the time they like to argue on different answers to questions, 19% (n=20) indicated over half of the time, 13% (n=14) indicated about half of the time, 19% (n=20) indicated less than half of the time and 35% (n=37) seldom or never like to argue on different answers to questions. Many, namely 35% of the student nurses seldom or never like to argue on different answers to questions.

4.3.7.1.9 Ability to approach life unemotionally

Twenty percent (n=21) of student nurses indicated that most of the time they approach life unemotionally, 10% (n=10) indicated over half of the time, 20% (n=21) indicated about half of the time, 20% (n=21) indicated less than half of the time and 30% (n=31)

indicated that they seldom or never approach life unemotionally. Many, namely 30% of the student nurses seldom or never approach life unemotionally.

4.3.7.1.10 Preference on technical tasks rather than to work with people

Forty one percent (n=42) of student nurses indicated that most of the time they rather prefer technical tasks rather than to work with people, 19% (n=19) indicated over half of the time, 14% (n=14) indicated about half of the time, 10% (n=10) indicated less than half of the time and 17% (n=17) indicated that they seldom or never prefer technical tasks rather than to work with people. Many, namely 41% of the student nurses indicated that most of the time they prefer technical tasks than to work with people.

4.3.7.1.11 Use of theory to understand practice

Five percent (n=5) of student nurses indicated that most of the time they use theory to understand practice, 6% (n=6) indicated over half of the time, 8% (n=8) indicated about half of the time, 22% (n=23) indicated less than half of the time and 60% (n=62) indicated that they seldom or never use theory to understand practice. The majority 60% of the student nurses seldom or never uses theory to understand practice.

4.3.7.1.12 Preference on computer assisted instrumentation/instructions

Thirty three percent (n=35) of student nurses indicated that most of the time they prefer computer assisted instrumentation/ instructions, 18% (n=18) indicated over half of the time, 20% (n=21) indicated about half of the time, 12% (n=13) indicated less than half of the time and 16% (=17) indicated that seldom or never prefer computer assisted instrumentation/instructions. Many, namely 33% of student nurses most of the time prefer use of computer assisted instrumentation or instructions.

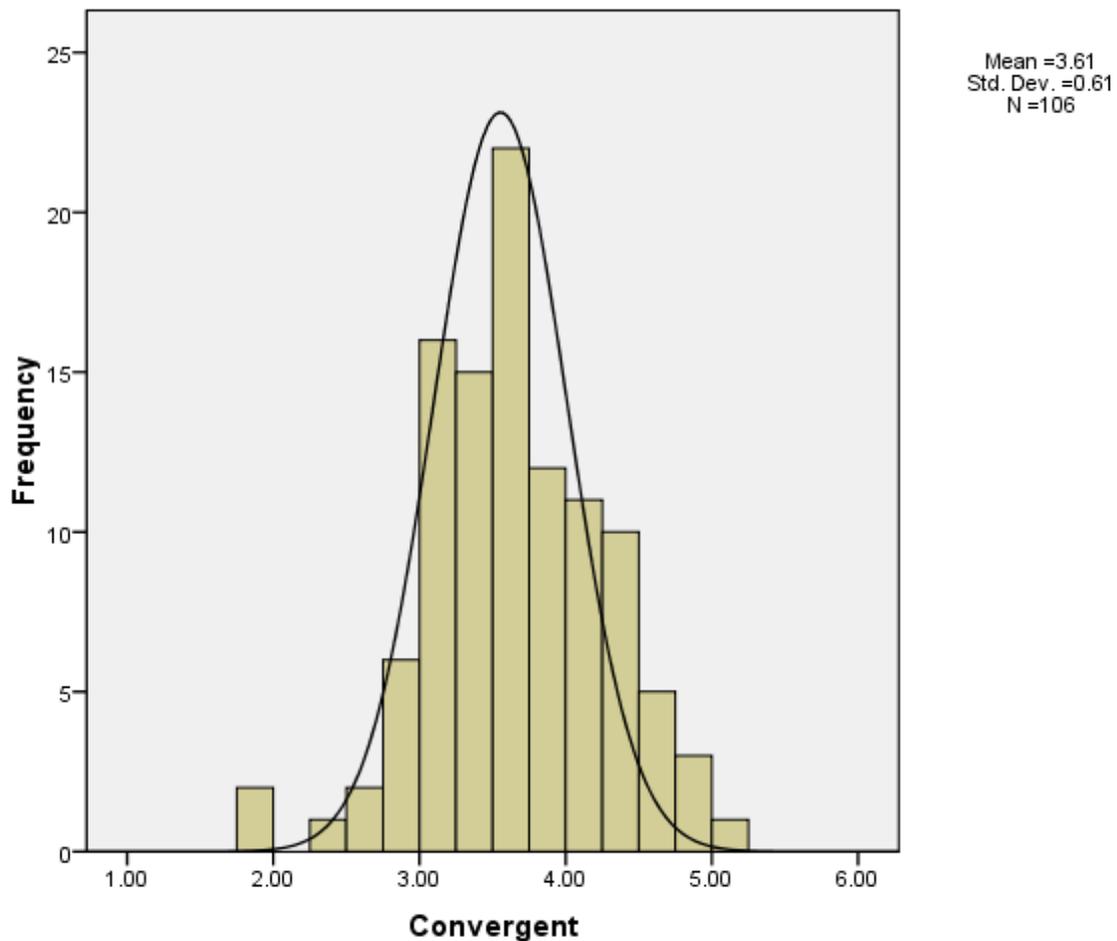


Figure 4.67 Learning preferences of student nurses-convergent (N=106)

Figure 4.67 depict the responses of student nurses for question 4.3.7.1 to 4.3.7.12 about their learning preferences as it pertains to the convergent learning style. The overall findings of section 4.3.7.1 to 4.3.7.12 indicate that student nurses do not prefer a convergent learning style except for preference in technical tasks rather than working with people and use of computer-assisted programmes. Many, namely 42% and 33% respectively preferred to learn in that manner most of the time. The mean was 3.61 and the SD was 0.61 implying that the responses of student nurses were homogenous as the scores are clustered around the mean.

4.3.7.1.13 Ability to reflect on what is observed

Eight percent (n=8) of student nurses indicated that they reflect on what they observe most of the time, 3% (n=3) indicated over half of the time, 15% (n=16) indicated about half of the time, thirty four (32.7%) indicated less than half of the time and 41% (n=43)

indicated that they seldom or never reflect on what they observe. Many, namely 41% of the student nurses seldom or never reflect on what they observe.

4.3.7.1.14 Availability of highly imaginative abilities

Five percent (n=5) of student nurses indicated that they have highly imaginative abilities most of the time, 8% (n=8) indicated over half of the time, 24% (n=24) indicated about half of the time, thirty (30.0%) indicated less than half of the time and 33% (n=33) seldom or never have highly imaginative abilities. Many, namely 33% of the student nurses seldom or never have highly imaginative abilities.

4.3.7.1.15 High regard for awareness and meaning

Four percent (n=4) of student nurses indicated that they have high regard for awareness and meaning most of the time, 15% (n=15) indicated over half of the time, 18% (n=18%) indicated about half of the time, 30% (n=31) indicated less than half of the time, 33% (n=34) indicated they seldom or never have high regard for awareness and meaning. Many, namely 33% of the student nurses seldom or never have high regard for awareness and meaning.

4.3.7.1.16 Values in life guide practice

Three percent (n=3) of student nurses indicated that their values in life guide their practice most of the time, 3% (n=3) indicated over half of the time, 14% (n=14) indicated about half of the time, 22% (n=23) indicated less than half of the time and 59% (n=61) indicated that values seldom or never guide their practice. The majority 59% of the student nurses seldom or never uses their values to guide their practice.

4.3.7.1.17 Ability to observe rather than to get involved

Forty four percent (n=44) of the student nurses indicated that they like to observe rather than to get involved most of the time, 22% (n=22) indicated over half of the time, 10% (n=10) indicated about half of the time, 9% (n=9) indicated half of the time and 16% (n=16) indicated that they seldom or never like to observe rather than to get involved.

Many, namely 44% of the student nurses like to observe rather than get involved most of the time

4.3.7.1.18 Formulation of different ideas on how things should work

Eight percent (n=8) of student nurses indicated that they like to formulate different ideas on how things should work most of the time, 12% (n=12) indicated over half of the time, 20% (n=21) indicated about half of the time, 25% (n=26) indicated less than half of the time and 36% (n=37) seldom or never like to formulate different ideas on how things should work. Many, namely 36% of student nurses seldom or never like to formulate different ideas on how things should work.

4.3.7.1.19 People oriented

Four percent (n=4) of student nurses indicated that they are people oriented most of the time, 5% (n=5) indicated over half of the time, 21% (n=21) indicated about half of the time, 25% (n=26) indicated less than half of the time and 45% (n=46) indicated that they seldom or never are people oriented. Many, namely 45% of the student nurses seldom or never are people oriented.

4.3.7.1.20 Display of a lot of feelings towards others

Seven percent (n=7) of student nurses indicated that they show a lot of feelings towards others most of the time, 9% (n=9) indicated over half of the time, 11% (n=12) indicated about half of the time, 19% (n=20) indicated less than half the time, and 54% (n=57) indicated that they seldom or never show feelings towards others. The majority 54% of student nurses seldom or never shows feelings towards others.

4.3.7.1.21 Preference in analysing videotapes

Twenty four percent (n=24) of student nurses indicated that they like to analyse videotapes most of the time, 25% (n=25) indicated over half of the time, 15% (n=15) indicated about half of the time, 15% (n=15) indicated less than half of the time and 21% (n=21) indicated that they seldom or never analyse videotapes. Many, namely 25% of the student nurses like to analyse videotapes over half of the time.

4.3.7.1.22 Preference of clinical preceptors to give examples of practice

Five percent (n=5) of student nurses indicated that they want clinical preceptors to give examples of practice most of the time, 4% (n=4) indicated over half of the time, 18% (n=19) indicated about half of the time, 13% (n=14) indicated less than half the time and 60% (n=62) indicated that they seldom or never want the clinical preceptors to give examples of practice. The majority 60% of the student nurses seldom or never wants the clinical preceptors to give examples of practice.

4.3.7.1.23 Ability to ask reflective questions to solve problems

Six percent (n=6) of student nurses indicated that they ask reflective questions to solve problems most of the time, 10% (n=10) indicated over half of the time, 14% (n=14) indicated about half of the time, 31% (n=32) indicated less than half of the time and 39% (n=40) indicated that they seldom or never ask reflective questions to solve problems. Many, namely 39% of the student nurses seldom or never ask reflective questions to solve problems.

4.3.7.1.24 Preference of lectures

Thirteen percent (n=13) of student nurses indicated that most of the time they prefer lectures, 21% (n=22) indicated over half of the time, 24% (n=25) indicated about half of the time, 15% (n=15) indicated less than half of the time and 27% (n=28) indicated that they seldom or never prefer lectures. Many, namely 27% of the student nurses seldom or never prefer lectures.

4.3.7.1.25 Preference of brainstorming to solve problems

Four percent (n=4) of student nurses indicated that they prefer to brainstorm to solve problems most of the time, 10% (n=10) indicated over half of the time, 15% (n=15) indicated about half of the time, 25% (n=26) indicated less than half of the time and 47% (n=48) indicated that they seldom or never prefer to brainstorm to solve problems. Many, namely (47%) of the student nurses seldom or never prefer to brainstorm to solve problems.

4.3.7.1.26 Information to be presented in a detailed and systematic manner

Seven percent (n=7) of student nurses indicated that they like the information to be presented in a detailed and systematic manner most of the time, 7% (n=7) indicated over half of the time, 8% (n=8) indicated about half of the time, 15% (n=16) indicated less than half of the time and 64% (n=68) indicated that they seldom or never like the information to be presented in a detailed and systematic manner. The majority 64% of the student nurses seldom or never like the information to be presented in a detailed and systematic manner.

4.3.7.1.27 Preference in counseling people

Nine percent (n=9) of student nurses indicated that they like counseling people most of the time, 12% (n=12) indicated over half of the time, 26% (n=27) indicated about half of the time, 20% (n=19) indicated less than half of the time and 35% (n=36) indicated that they seldom or never like counseling people. Many, namely 35% of student nurses seldom or never like counseling people.

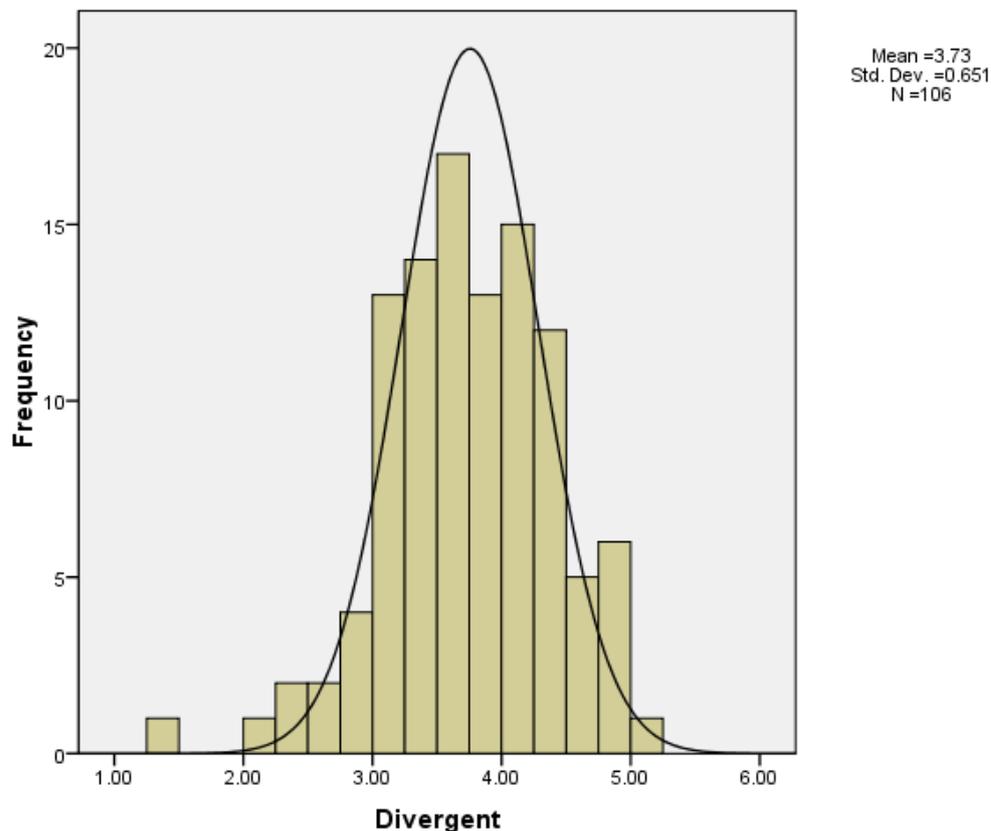


Figure 4.68 Learning preferences of student nurses-divergent (N=106)

Figure 4.68 depict the responses of student nurses for question 4.3.7.13 to 4.3.7.27 about their learning preferences as it pertains to a divergent learning style. The overall findings of section 4.3.7.13 to 4.3.7.27 indicate that student nurses do not prefer divergent learning styles except for where respondents indicated that they like to observe rather than get involved most of the time and analyse videotapes less half of the time. The mean was 3.73 and SD 0.651 implying that the scores were homogenous as the scores were clustered around the mean.

4.3.7.1.28 Ability to watch people, think about their actions and then do

Sixteen percent (n=17) of student nurses indicated that they like to watch people, think about their actions and then do, 14% (n=15) indicated over half of the time, 18% (n=19) indicated about half of the time, 19% (n=20) indicated less than half of the time and 33% (n=35) indicated that they seldom or never like to watch people, think about their actions and then do. Many, namely 33% of student nurses seldom or never like to watch people, think about their actions and then do.

4.3.7.1.29 Preference of lectures that are systematic and material given out

Nine percent (n=9) of student nurses indicated that they prefer lectures that are systematic and material given out most of the time, 12% (n=12) indicated over half of the time, 17% (n=18) indicated about half of the time, 18% (n=19) indicated less than half of the time and 44% (n=46) indicated that they seldom or never prefer lectures that are systematic and material given out. Many, namely 44% of the student nurses seldom or never prefers systematic lectures that are systematic and material given out.

4.3.7.1.30 Less concerned with people and more interested in ideas and concepts

Thirty seven percent (n=38) of student nurses indicated that they are less concerned with people and more interested in ideas and concepts most of the time, 14% (n=15) indicated over half of the time, 16% (n=17) indicated about half of the time, 13% (n=13) indicated less than half of the time and 20% (n=21) indicated that they seldom or never are less concerned with people and more interested in ideas and concepts. Many, namely 37% of the student nurses are less concerned with people and more interested in ideas and concepts most of the time.

4.3.7.1.31 *Philosophy is about planning everything in advance*

Two percent (n=2) of student nurses indicated that their philosophy is about planning everything in advance most of the time, 4% (n=4) indicated over half of the time, 21% (n=21) indicated about half of the time, 23% (n=23) indicated less than half of the time, and 51 % (n=52) indicated that their philosophy is seldom or never about planning everything in advance. The majority 51% of the student nurses seldom or never uses their philosophy in planning everything in advance.

4.3.7.1.32 *Theory oriented*

Two percent (n=2) of student nurses indicated that they are theory oriented most of the time, 13% (n=13) indicated over half of the time, 20% (n=21) indicated about half of the time, 23% (n=22) indicated less than half of the time and 43% (n=44) indicated that they seldom or never are theory oriented. Many, namely 43% of student nurses are seldom or never theory oriented.

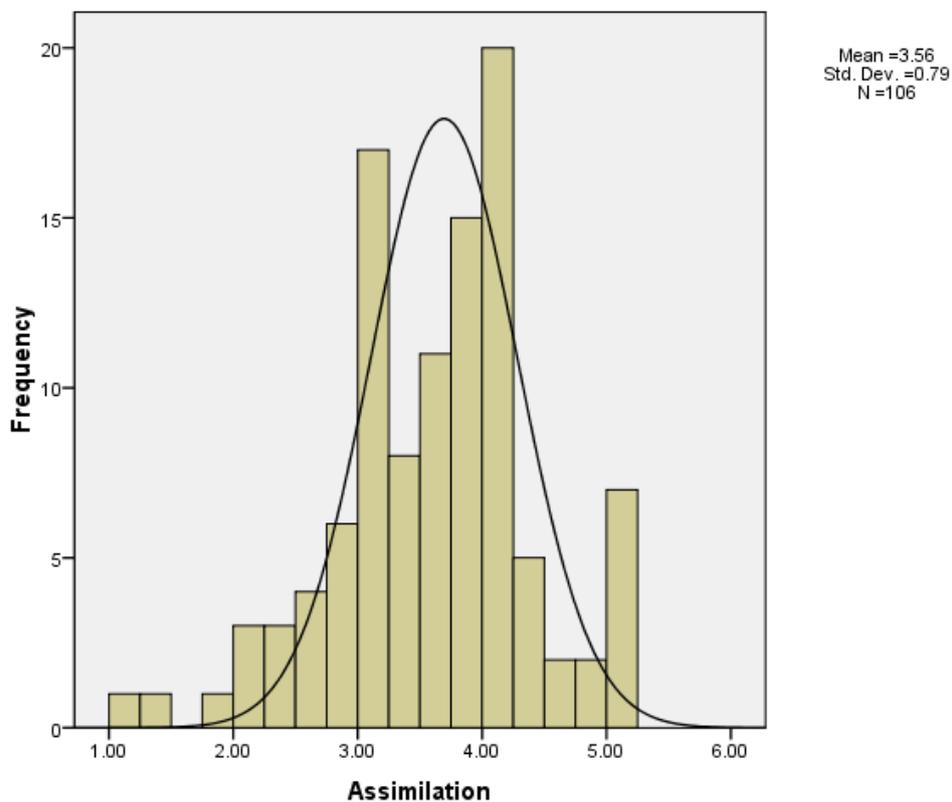


Figure 4.69 Learning preferences of student nurses-assimilation (N=106)

Figure 4.69 depict the responses of student nurses for question 4.3.7.28 to 4.3.7.32 about their learning preferences as it pertains to a assimilation learning style. The overall findings of section 4.3.7.28 to 4.3.7.32 indicate that the student nurses do not prefer assimilation learning styles except for where student nurses indicated that they are less concerned with people and more interested in ideas and concepts most of the time. The mean was 3.56 and the SD 0.79 implying that the responses of the student nurses were clustered around the mean.

4.3.7.1.33 Preference of “hands-on” experience

Four percent (n=4) of student nurses indicated that they like “hands-on” experience most of the time, 8% (n=8) indicated over half of the time, 23% (n=23) indicated about half of the time, 27% (n=28) indicated less than half of the time and 38% (n=38) of student nurses indicated that they seldom or never like a “hands-on” experience. Many, namely 38% of the student nurses seldom or never like a “hands-on” experience.

4.3.7.1.34 Ability to carry out plans and engage in new experiences

Four percent (n=4) of student nurses indicated that they like to carry out plans and engage in new experiences most of the time, 4% (n=4) indicated over half of the time, 12% (n=12) indicated about half of the time, 24% (n=25) indicated less than half of the time and 57% (n=59) indicated that they seldom or never like to carry out plans and engage in new experiences. The majority 57% of the student nurses seldom or never like to carry out plans and engage in new experiences.

4.3.7.1.35 Use of intuition to solve problems

Ten percent (n=10) of student nurses indicated that they use intuition to solve problems most of the time, 12% (n=12) indicated over half of the time, 28% (n=29) indicated about half of the time, 21% (n=22) indicated less than half of the time and 30% (n=31) indicated that they seldom or never use intuition to solve problems. Many, namely 30% of the student nurses seldom or never uses intuition to solve problems.

4.3.7.1.36 Easy with people

Five percent (n=5) of student nurses indicated that they are easy with people most of the time, 2% (n=2) indicated over half of the time, 12% (n=12) indicated about half of the time, 24% (n=24) indicated less than half of the time and 58% (n=59) of student nurses indicated that they seldom or never are at ease with people. The majority 58% of the student nurses seldom or never are at ease with people.

4.3.7.1.37 Regarded by others as impatient and pushy

Forty six percent (n=47) of student nurses indicated that they are often regarded by others as impatient and pushy most of the time, 9% (n=9) indicated over half of the time, 15% (n=15) indicated about half of the time, 15% (n=15) indicated less than half of the time and 17% (n=17) indicated that they are seldom or never regarded by others as impatient and pushy. Many, namely 46% of the student nurses indicated that they are often regarded by others as impatient and pushy most of the time.

4.3.7.1.38 Need of clear instruction to solve problems

Five percent (n=5) of student nurses indicated that they need clear instruction to solve problems most of the time, 10% (n=11) indicated over half of the time, 21% (n=20) indicated about half of the time, 12% (n=13) indicated less than half of the time and 53% (n=56) of student nurses indicated seldom or never need clear instruction to solve problems. The majority 53% of the student nurses seldom or never need clear instruction to solve problems.

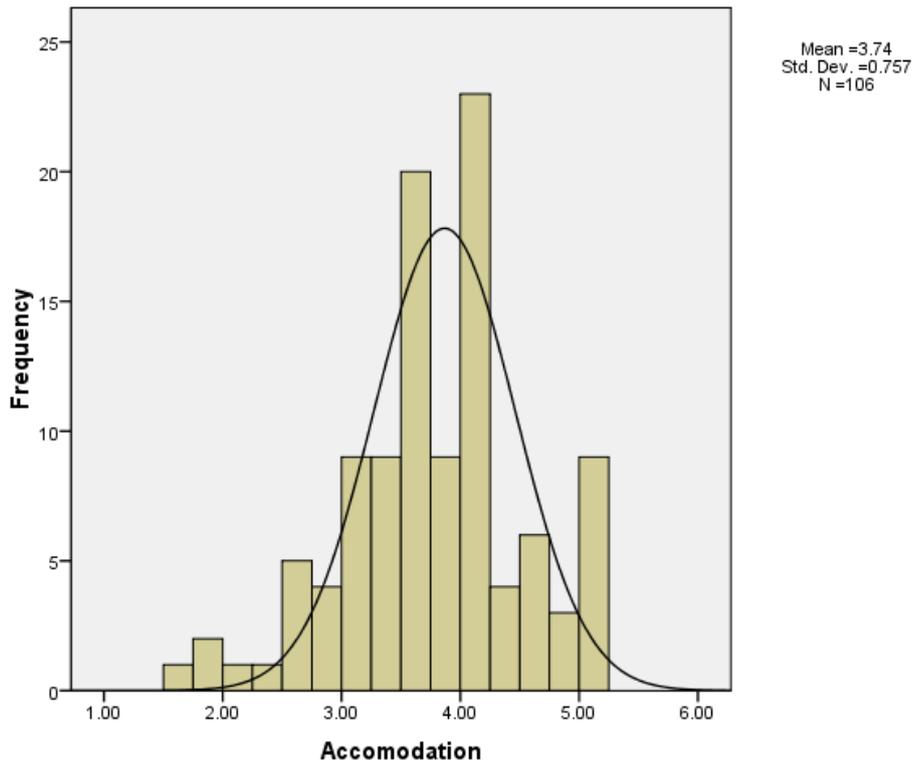


Figure 4.70 Learning preferences of student nurses-accommodation (N=106)

Figure 4.70 depict the responses of student nurses for question 4.3.7.33 to 4.3.7.38 about their learning preferences as it pertains to the accommodation learning style. The overall findings of section 4.3.7.33 to 4.3.7.38 indicate that student nurses do not prefer accommodative learning styles except for where respondents indicated that they are often regarded by others as impatient and pushy most of the time. The mean score was 3.73 and SD 0.757 implying that the scores of the student nurses were clustered around the mean.

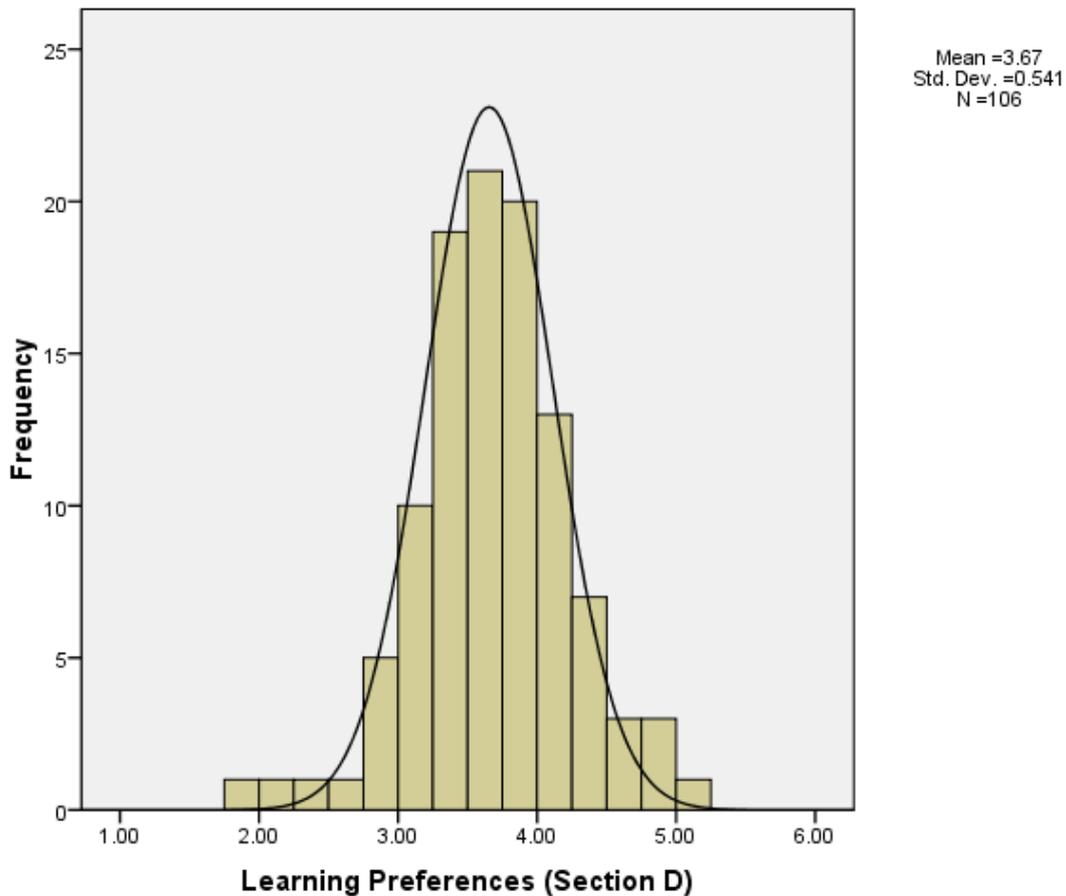


Figure 4.71 Learning preferences (N=106)

Figure 4.71 depict the responses of student nurses for question 4.3.7.1 to 4.3.7.38 about their learning preferences as it pertains to convergent, divergent, assimilation and accommodative learning style. The overall responses of the learning preferences of the student nurses reflected the mean of 3.67 and the standard deviation was 0.541 implying that the responses of student nurses were homogenous in that they were clustered around the mean.

4.3.8 Reliability analysis

4.3.8.1 Cronbach`s Alpha value

The items that constituted each factor for section D of the questionnaire were subjected to a reliability analysis. Cronbach`s Alpha value which is a measure of collective correlation between the items is also a measure of the internal consistency of the items that constitute a factor.

Table 4.4 Cronbach's Alpha values of convergent, divergent, assimilation and accommodation learning preferences

Factor	Items	Cronbach's Alpha value	Remarks
Convergence	1 to 12	0.680	Acceptable Reliability
Divergence	13 to 27	0.814	Good
Assimilation	28 to 31	0.555 **	Unacceptable
Accommodation	33 to 38	0.635	Acceptable

The table above displays the Cronbach's Alpha values for each of the factors of convergent, divergent, assimilation and accommodation learning preferences. Item 30 did not contribute to this factor and was consequently dropped. This improved the Cronbach's Alpha value to an acceptable 0.617. Good reliability of Cronbach's Alpha value is between <0.8 to <1.0

4.3.8.2 The influence of biographic profile of student nurses upon their learning preferences

Cross tabulation was done for question 4.3.7.1.1 to 4.3.7.1.38 against learning preferences, age, gender, first language, previous nursing qualification, and level of study and whether students have ever failed a subject. In certain cases the significance level was $p < 0.005$, but 20%-80% of the cells had an expected count of less than five (5) and the chi-square in this case would not be a valid test. The comparison of the mean scores for each of the factors of the learning preferences of on convergent, divergent, assimilation and accommodation with the biographic profile of student nurses was done. The comparison was performed using One-way Analysis of Variance technique (ANOVA) with the assumptions of normality and homogeneity of variances. The comparison was also repeated using non-parametric methods (Wilcoxon/Kruskal-Wallis tests) where no assumption of the underlying distributions or equality of variances was assumed.

Significance differences in mean scores between groups for each factor exist, are highlighted in the tables below.

Table 4.5 Factor: Convergence

Student profile	ANOVA technique	Wilcoxon/Kruskal-Wallis test
Age	0.267	0.64
Gender	0.260	0.201
First language	0.252	0.513
Previous nursing qualifications	0.840	0.779
Current year of study	0.748	0.674
Have you ever failed a subject	0.083	0.056

Table 4.6 Factor: Divergence

Student profile	ANOVA technique (Significance value)	Wilcoxon/Kruskal-Wallis test (Significance value)
Age	0.350	0.147
Gender	0.324	0.266
First language	0.122	0.071
Previous nursing qualifications	0.440	0.350
Current year of study	0.398	0.632
Have you ever failed a subject	0.594	0.466

Table 4.7 Factor: Assimilation

Student profile	ANOVA technique	Wilcoxon/Kruskal-Wallis test
Age	0.387	0.229
Gender	0.651	0.633
First language	0.018	0.002
Previous nursing qualifications	0.145	0.152
Current year of study	0.002	0.001
Have you ever failed a subject	0.661	0.998

Table 4.8 Factor: Accommodation

Student profile	ANOVA technique	Wilcoxon/Kruskal-Wallis test
Age	0.990	0.946
Gender	0.189	0.166
First language	0.488	0.306
Previous nursing qualifications	0.830	0.729
Current year of study	0.407	0.435
Have you ever failed a subject	0.362	0.260

From the above analyses, it is apparent that only assimilation is influenced by the biographic profile of the respondent. Specifically the mean score for assimilation is significantly influenced by nursing experience and current year of study influence the mean score.

Fourth year students have a lower mean assimilation score than third and second year students. Nursing students who have English as a first language also have a

significantly lower assimilation mean score than the other students (this conclusion is suspect since there was only 1 student in this category).

The findings are inconsistent with the views of Van Rensburg (1995:156) who revealed that student whose home language was black had a more convergent learning style than those with Afrikaans and English as their home language. The research findings by Garcia et al (2000) revealed that there was a link between thinking, academic performance and learning styles (see section 2.2.6.4). Smit's findings (2010:51) revealed that many, namely 31% of learning styles of registered nurses enrolled in an online nursing programme were accommodators and when cross tabulation was done against gender, age, years of nursing experience and number of online courses completed, they were predominantly accommodators.

4.3.9 Section E: Assessment

This section was dedicated to formative and summative assessment.

4.3.9.1 *Formative assessment*

This sub-section related to the use of formative assessment, the persons who conduct the assessment, the frequency of conducting the formative assessments and the respondents' opinions about the applicability and barriers of formative assessments.

4.3.9.1.1 *The use of formative assessments*

In this sub-section, respondents were to indicate formative clinical assessment strategies that are used. The data analysis revealed 303 responses from this section.

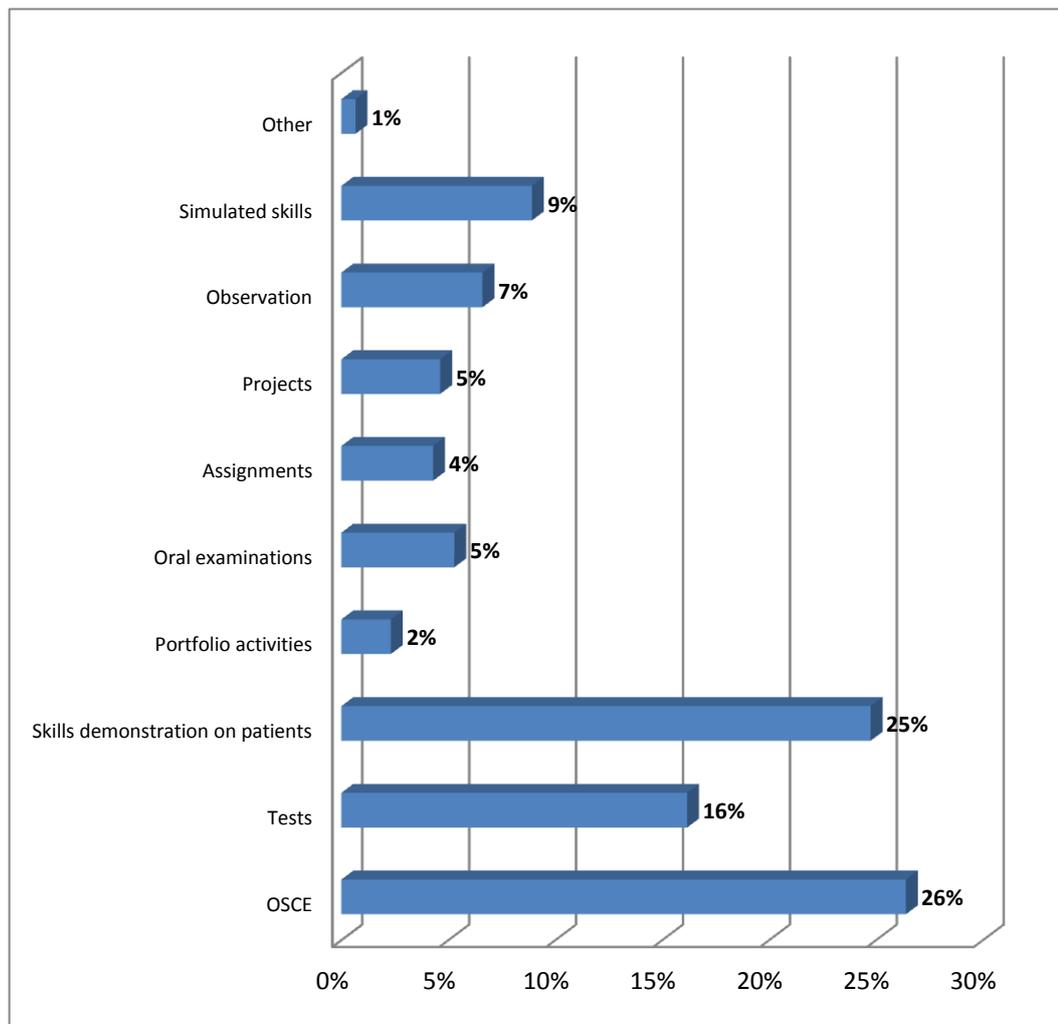


Figure 4.72 Responses of student nurses on formative clinical assessment used (N=106)

Twenty six percent (n=80) of the student nurses indicated the formative assessments method used in clinical practice as OSCE, 16% (n=49) indicated tests, 25% (n=75) indicated skills demonstration on patients, 2% (n=7) indicated portfolio activities, 5% (n=16) indicated oral examination, 4% (n=13) indicated assignments, 5% (n=14) indicated projects, 7% (n=20) observation, 9% (n=27) indicated simulated skills and 1% (n=2) indicated other types of assessments. Many, namely 26% and 25% of student nurses respectively indicated OSCE and skills demonstration on patients as the preferred strategies that are used during formative assessment for clinical competencies.

The findings are consistent with the views of Bartfay et al (2004:19); Rushforth (2007:482); Rentschler et al (2007:135), (see section 2.5.7.7) as well as section 2.3.7.7

where OSCE and demonstrations are cited as the most common strategies used in evaluation of clinical practice.

4.3.9.1.2 Person(s) that conduct formative clinical assessments

In this sub-section, respondents were to indicate the person(s) who conduct formative clinical assessments.

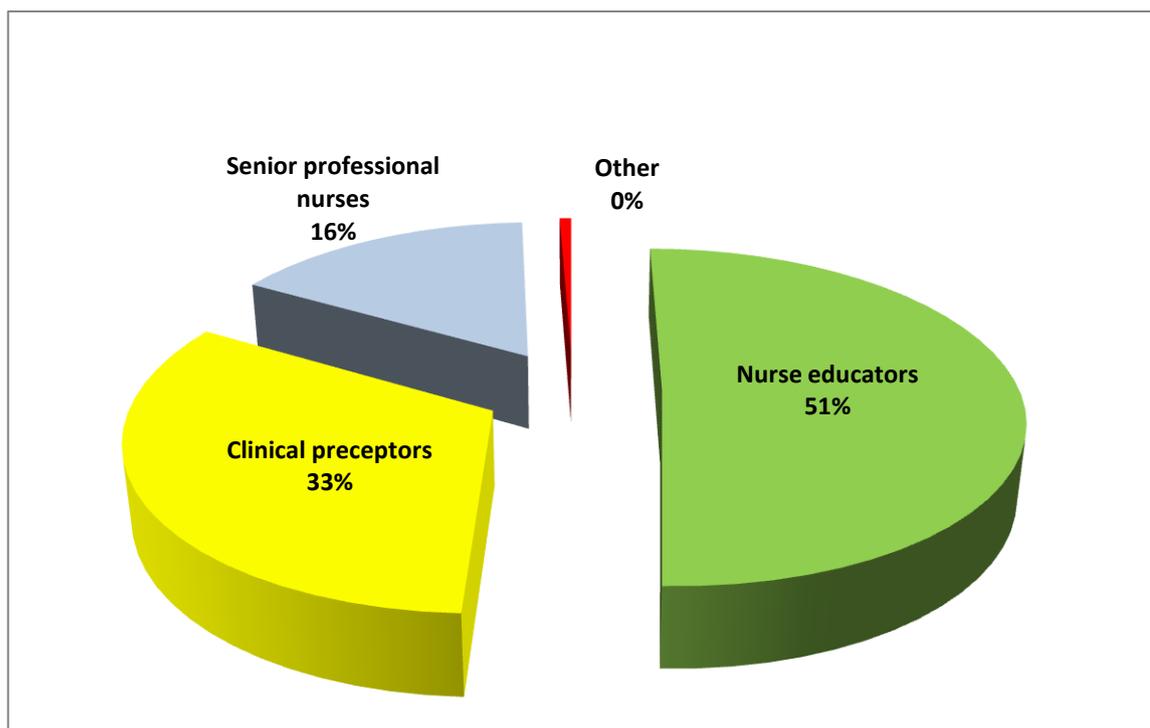


Figure 4.73 Responses of student nurses on person(s) that conduct formative clinical assessments (N=106)

Fifty one percent (n=54) of the student nurses indicated the person(s) responsible for formative clinical assessments as nurse educators, 33% (n=35) indicated clinical preceptors and 16% (n=17) indicated senior professional nurses. The majority 51% of the student nurses indicated that nurse educators were responsible for formative clinical assessment.

The findings are consistent with the views of Dolan (2003:139) and Cotter et al (2009:660) who indicate that nurse educators should ultimately be responsible for assessment. In this study it was noted that although senior professional nurses in the wards were responsible for clinical supervision, they are excluded from student assessment. These findings are supported by Murathi et al (2005:18) who revealed that

unit managers often complained that they were excluded from assessment of student nurses.

4.3.9.1.3 Frequency of formative assessments

In this sub-section, respondents were to indicate their responses on frequency of formative assessments.

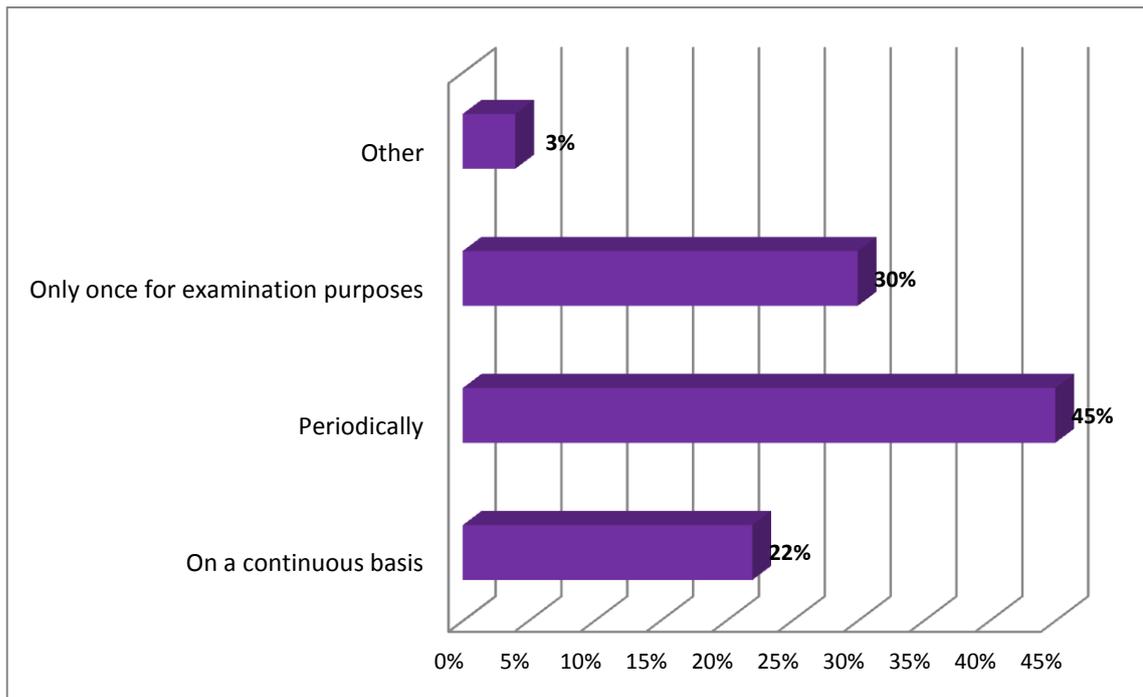


Figure 4.74 Responses of student nurses on frequency of formative assessments (N=106)

Twenty two percent (n=23) of student nurses indicated that formative assessments were conducted on a continuous basis, 45% (n=48) indicated periodically, 30% (n=32) indicated that formative assessment was conducted only for examination purposes and 3% (n=3) indicated other frequencies. Many, namely 45% were of the opinion that formative assessments are done periodically. These findings support the idea as revealed in section 2.5.4 that nurse educators are seen only when they come for assessments, It is a concern that only 22% of student nurses indicated that formative assessment was done on a continuous basis. The findings contradict the purpose of formative assessments as discussed in section 2.3.5.1.

4.3.9.1.4 Opinions on aspects applicable to formative assessment

In this sub-section, respondents were to indicate their opinions on aspects that are applicable to formative assessments. Of the total of respondents (N=106), 201 responses were given.

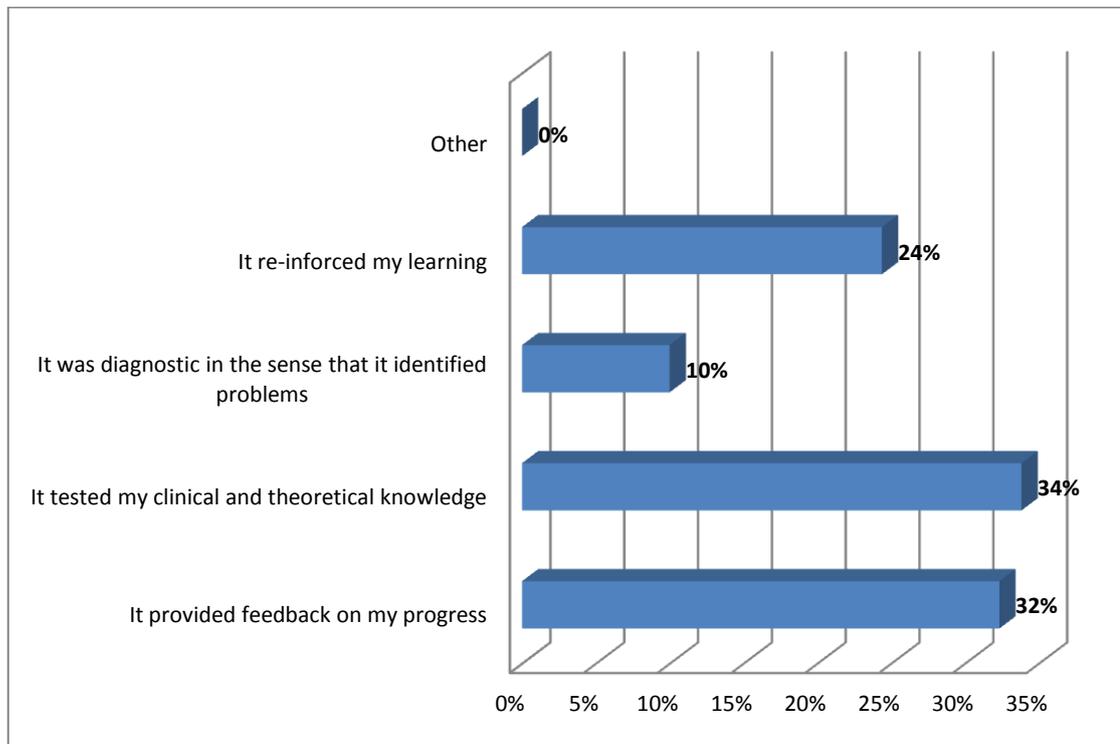


Figure 4.75 Opinions of student nurses on aspects that are applicable to formative assessments (N=106)

Thirty two percent (n=65) of student nurses indicated that formative assessments provided feedback on their progress, 34% (n=68) indicated that it tested their clinical and theoretical knowledge, 10% (n=19) indicated that it was diagnostic in the sense that it identified problems and 24% (n=49) indicated that it re-enforced their learning. The majority (34%) and (32%) of the student nurses are of the opinion that formative assessments test their clinical and theoretical knowledge followed by provision of feedback on their progress. These findings support the views of Quinn and Hughes (2007:268) as discussed in section 2.3.5.1 and Kaplan and Brown (2009:363).

4.3.9.1.5 Opinions on barriers encountered during formative assessments

In this sub-section, respondents were to indicate their opinions on barriers encountered during formative assessments. Of the total of respondents (N=106), 279 responses were given.

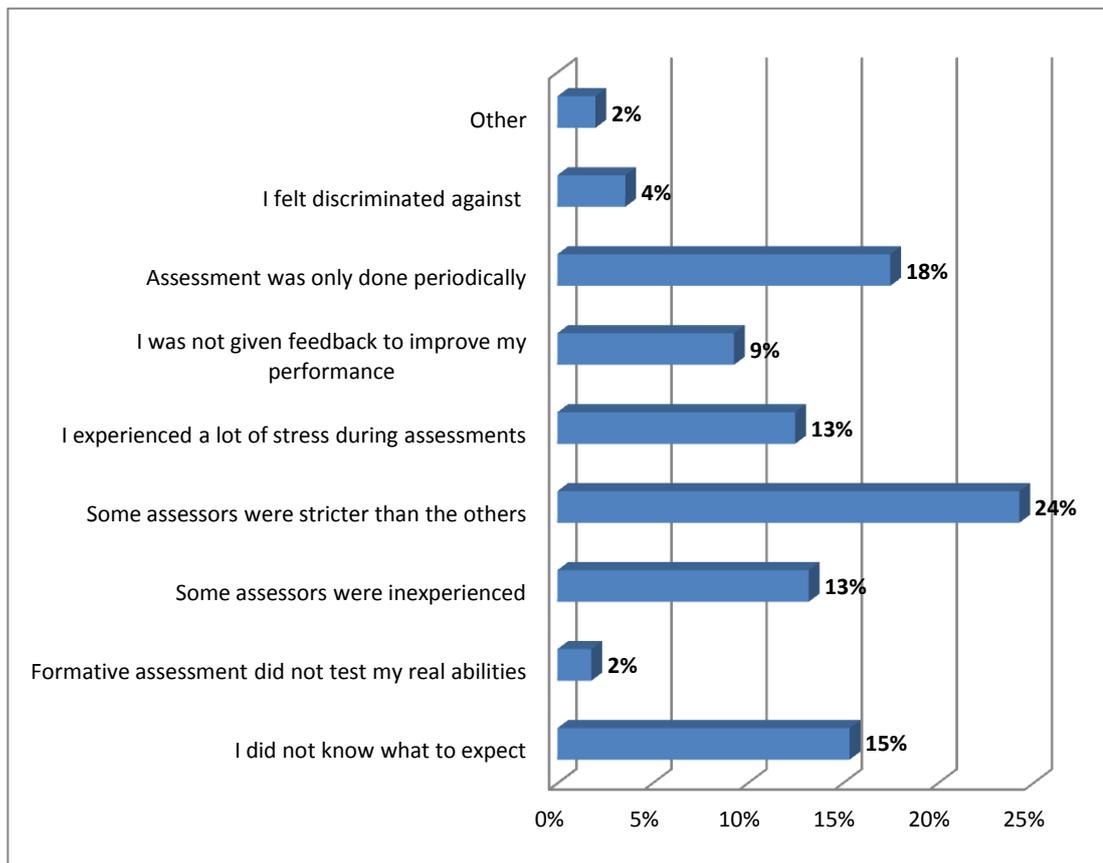


Figure 4.76 Opinions of student nurses on barriers encountered during formative assessments (N=106)

Fifteen percent (n=43) of student nurses indicated the barriers encountered during formative assessments as that they did not know what to expect, 2% (n=5) indicated that formative assessments did not test their real abilities, 13% (n=37) of indicated that some assessors were inexperienced, 24% (n=68) felt that some assessors were stricter than others, 13% (n=35) indicated that they experienced a lot of stress during assessments, 9% (n=26) indicated that they were not given feedback to improve their performances, 18% (n=49) indicated that assessments were done only periodically, 4% (n=9) felt discriminated against and 2% (n=7) stated other barriers. Many, namely 24%

and 18% of the student nurses felt that some assessors were stricter than the others and that assessment was done only periodically.

These findings are consistent with the views of Dolan (2003:139); Duke (1996:409); Mc Carthy and Murphy (2008:311); Rutkowski (2007:37) as cited in section 2.3.7. Waterson et al (2006:61) revealed that student nurses viewed inconsistency in marking by nurse educators as frustrating in that it discourages students and have a negative impact on their performance.

4.3.9.2 Summative assessments

4.3.9.2.1 Frequency of summative assessments

In this sub-section, respondents were to indicate the frequency of conducting summative assessments. Of the total of respondents (N=106), 160 responses were given.

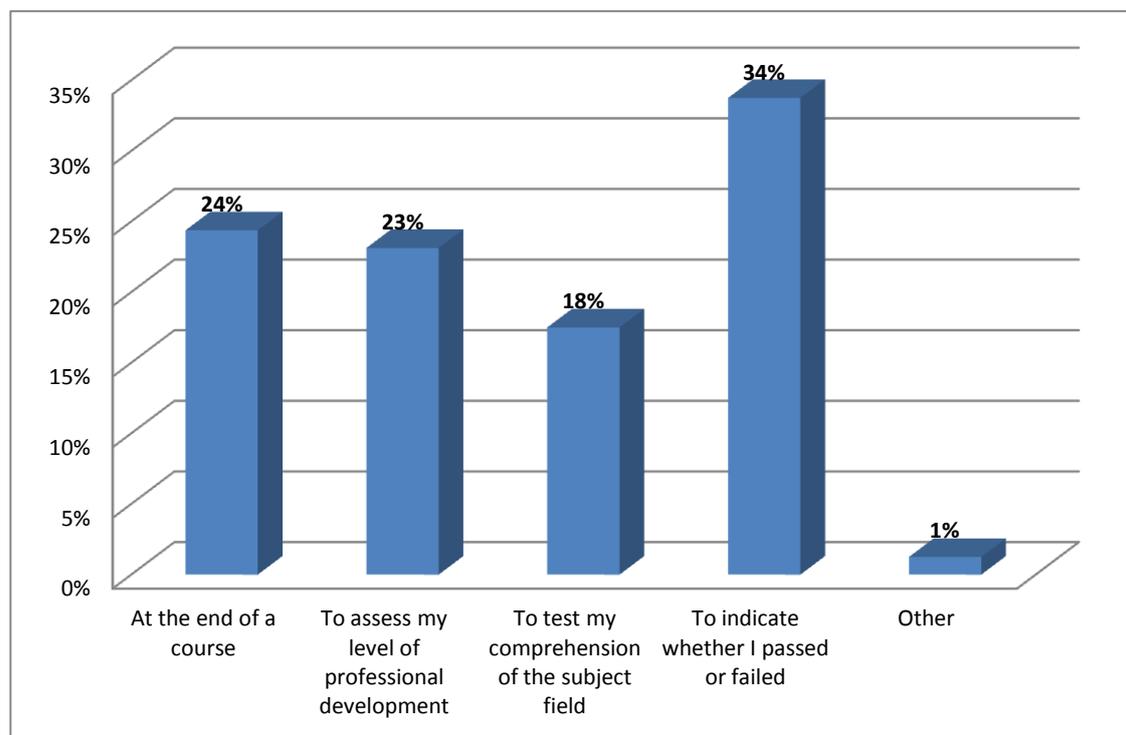


Figure 4.77 Responses of student nurses on frequency of summative assessments (N=106)

Twenty four percent (n=39) of student nurses indicated that summative assessments were done at the end of the course, 23% (n=37) indicated that it was aimed to assess their level of professional development, 18% (n=28) indicated that it was to test their comprehension of the subject field, 34% (n=54) indicated that it indicated whether they have passed or failed and 1% (n=2) of student nurses stated other frequencies. Many, namely 34% of the student nurses are of the opinion that summative assessment are to indicate whether they have passed or failed.

The findings are consistent with the views of Oermann and Gaberson (2006:5) as discussed in section 2.5.5.2.

4.3.9.2.2 Barriers encountered during summative assessments

In this sub-section, respondents were to indicate their opinions on barriers encountered during summative assessments. The data analysis revealed 133 responses for this question.

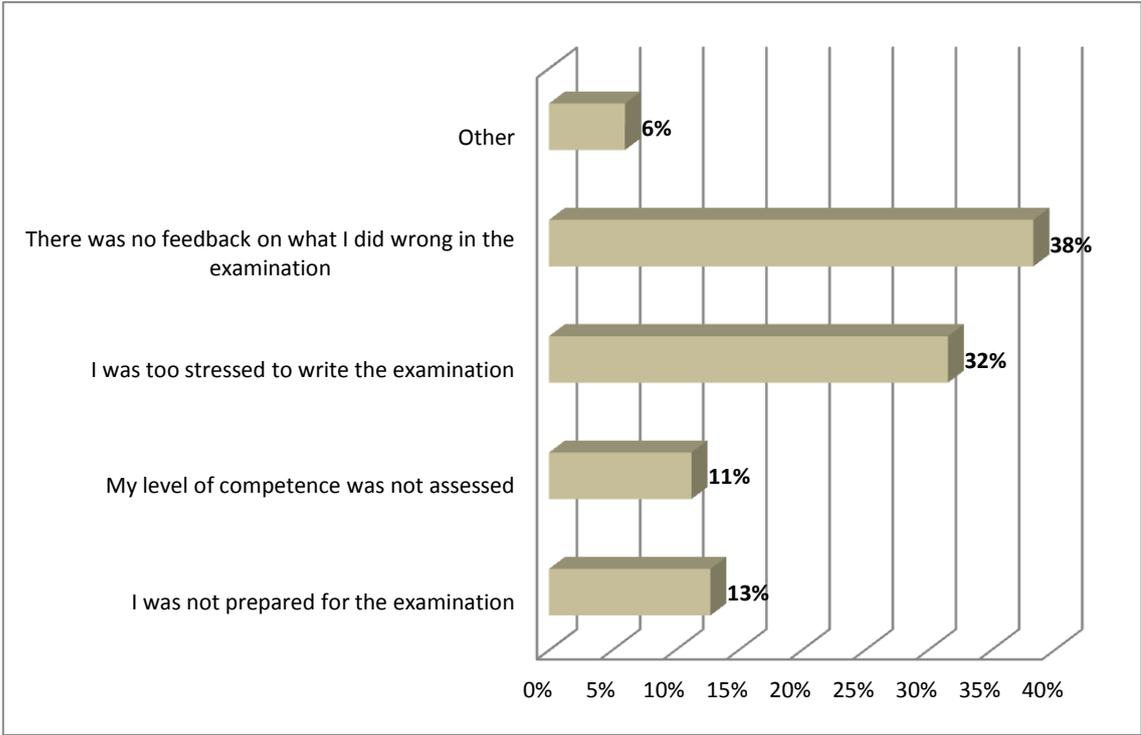


Figure 4.78 Responses of student nurses on barriers encountered during summative assessments (N=106)

Thirteen percent (n=17) of student nurses indicated the barriers encountered during summative assessments as that they were not prepared for the examination, 11% (n=15) indicated that their level of competence was not tested, 32% (n=42) indicated that they were too stressed to write the examination, 38% (n=51) indicated that there was no feedback on what they did wrong in the examination and 6% (n=8) indicated other barriers. Many, namely 38% of the student nurses revealed that not providing feedback after summative assessment as a major barrier. The findings contradict the findings in section 4.3.6.1.12 where the majority, namely 69% of the student nurses indicated that they were given feedback.

4.3.9.2.3 Description of a scenario in which student nurses were able to integrate ALL disciplines to provide comprehensive patient care

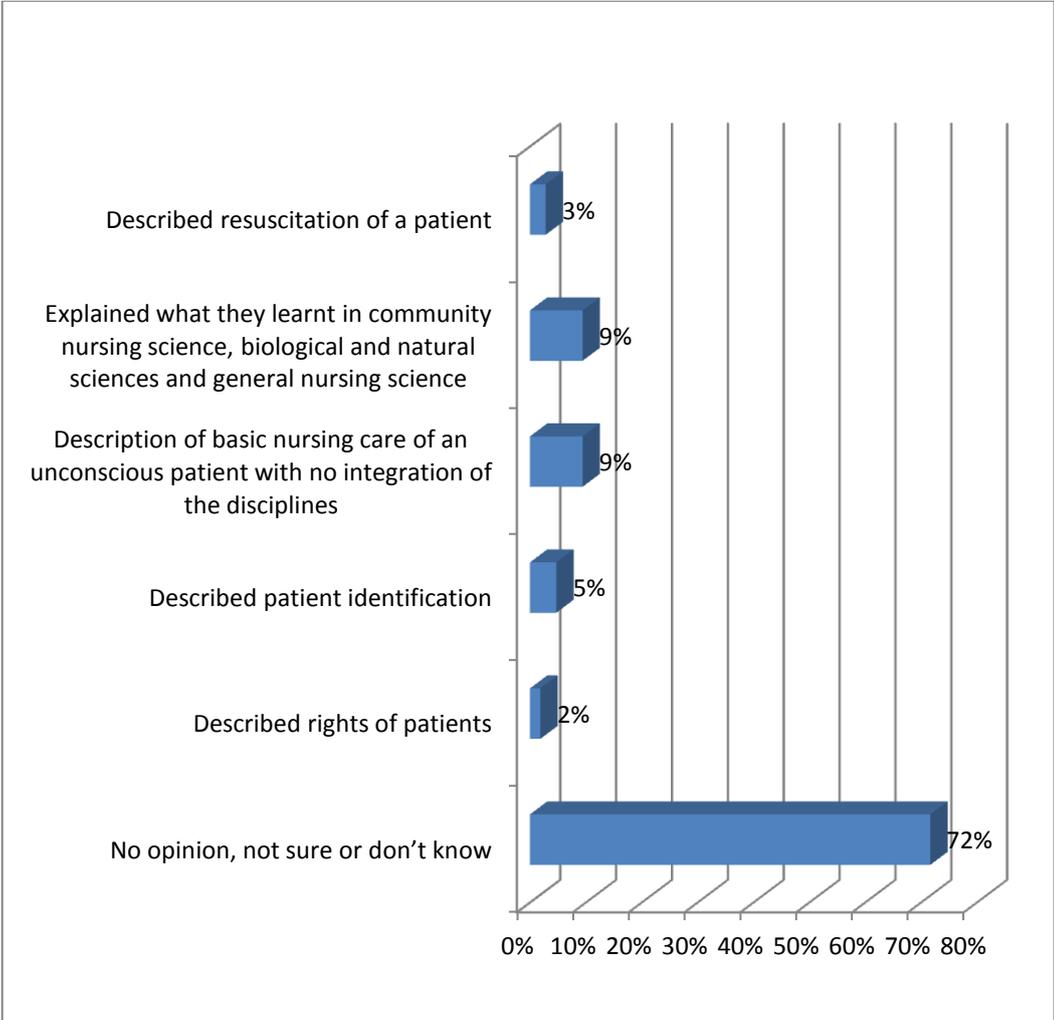


Figure 4.79 Responses of student nurses on the scenario in which they were able to integrate all disciplines (N=106)

This open-ended question allowed the respondents to describe a scenario in which they were able to integrate all disciplines i.e. biological and nursing sciences, pharmacology, social sciences, ethos and professional practice general nursing science, community health science, midwifery and psychiatric nursing science. Seventy two percent (n=76) indicated that they had no opinion/not sure or did not know, 2% (n=2) described the rights of patients, 5% (n=5) described patient identification, 9% (n=10) described basic nursing care of an unconscious patient with no integration of the disciplines, 9% (n=10) explained what they learnt in community nursing science, biological and natural sciences and general nursing science and 3% (n=3) described resuscitation of a patient.

The above findings indicate that although student nurses` responses in other questions might have reflected that they understand the concept of integration of theory and practice, they were not aware of the application of this concept during rendering of comprehensive patient care. The findings are consistent with Waterson et al (2006:60) who revealed that lack of theory-practice integration was a major problem.

4.4 DATA ANALYSIS – NURSE EDUCATORS

In this phase of the data analysis, the results as indicated by the nurse educators are provided.

4.4.1 Section A: Biographic information

This section deals with the biographical information of the nurse educators. It includes the age, gender, first language, basic qualifications, nursing education qualifications, post-basic clinical qualifications, number of years in teaching-learning environment and the level that nurse educators were teaching.

4.4.1.1 Age of nurse educators

In this sub-section, the ages of respondents is indicated.

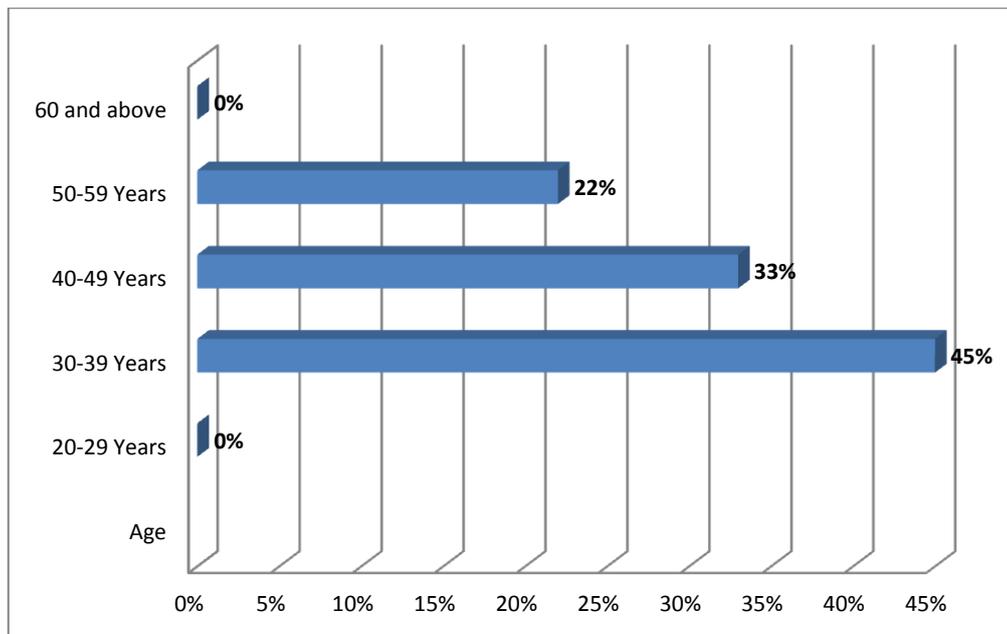


Figure 4.80 Responses on age of nurse educators (N=9)

Forty five percent (n=4) of the nurse educators were between the age of 30-39, 33% (n=3) between 40-49 and 22% (n=2) between 50-59. The findings reveal that many, namely 45% of nurse educators were at the same age as 6% of some student nurses. This phenomenon is viewed as positive since student nurses may be able to relate to nurse educators with ease because there were no vast age differences.

4.4.1.2 Gender of nurse educators

In this sub-section, the gender of the nurse educators is indicated.

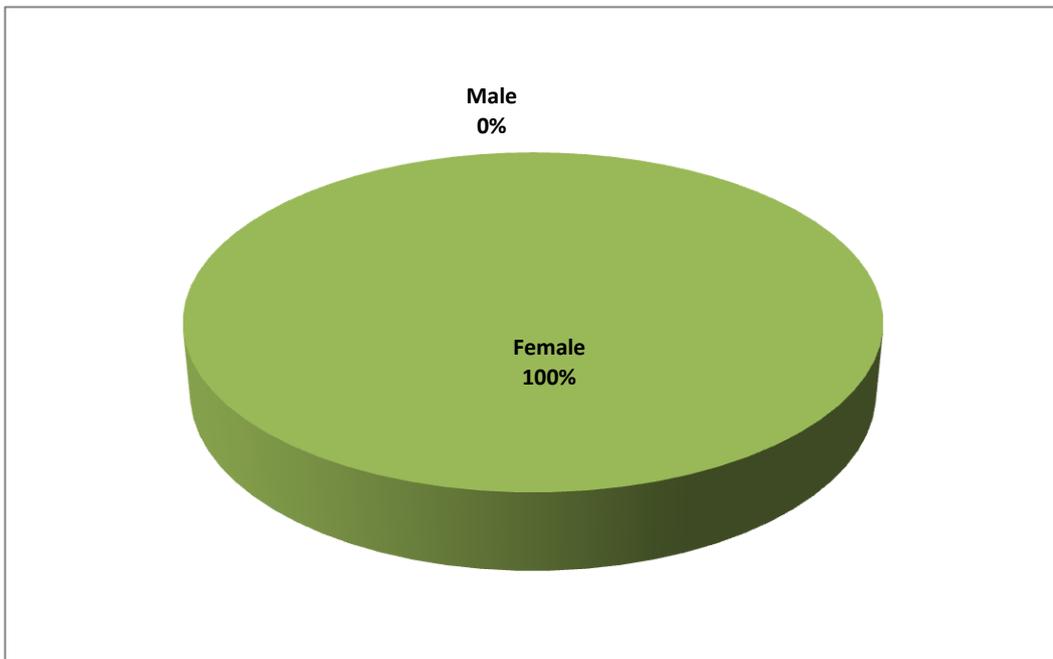


Figure 4.81 Responses on gender of nurse educators (N=9)

All 100% (n=9) of the nurse educators were females. Although Muldoon and Reilly (2003:94) indicate that teaching is much more attractive to both men and women, in this study males were not represented.

4.4.1.3 First language of nurse educators

In this section, the first languages of the respondents were required.

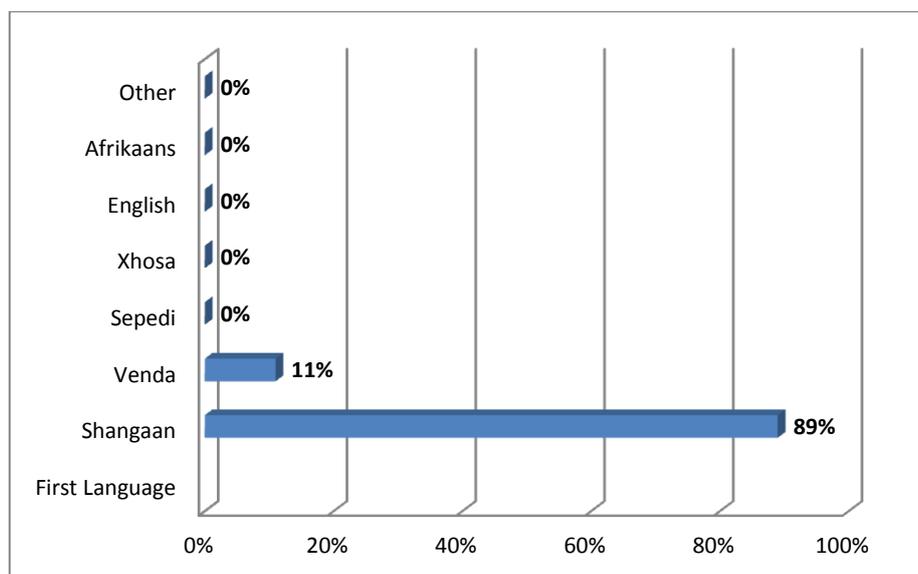


Figure 4.82 Responses on first language of nurse educators (N=9)

The first language of 89% (n=8) of nurse educators was Shangaan and 11% (n=1) Venda. The majority 55% of first language of student nurses was Sepedi, therefore most of the nurse educators were from a different ethnic background than the student nurses that might create challenges due to differences in cultural issues.

According to Starr (2009:478), nurse educators are often challenged by students who did not learn English as a primary language. It is not only language that makes these students stand out-cultural beliefs, values and practices need to be appreciated as well. Language and other cultural influences may affect teaching and the outcomes thereof in students.

Bednarz and Schim (2010:253) state that currently, nontraditional students are replacing traditional students in many nursing programs nationwide. Many non-traditional schools of nursing consist of diversity in cultures, languages, ages groups and gender. Traditional students generally have been young unmarried women entering nursing programs as first-time students soon after completion of their secondary education, however this is changing as older more established students are entering the nursing profession that often challenges the system because nurse educators must be ready to teach diverse students.

4.4.1.4 Basic qualifications of nurse educators

In this sub-section, the respondents had to indicate their basic qualifications.

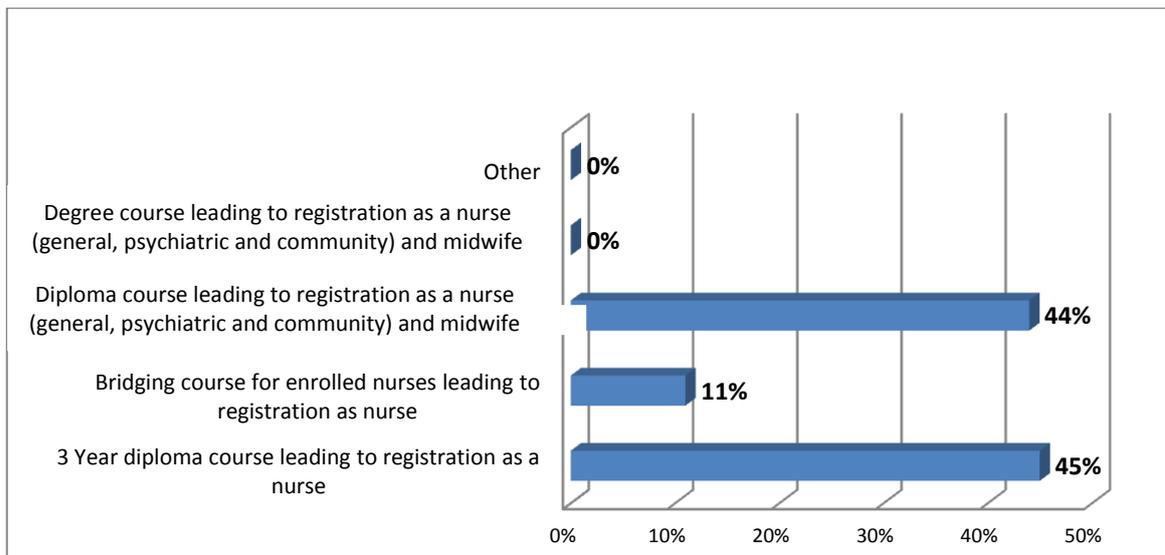


Figure 4.83 Responses of nurse educators on their basic qualifications (N=9)

Forty five percent (n=4) of nurse educators had completed the three-year diploma course leading to registration as nurse, 11% (n=1) of nurses educators had completed the bridging course for enrolled nurses leading to registration as a nurse, 44% (n=4) of nurses educators had done the diploma course leading to registration as a nurse (general, psychiatric and community) and midwife. Many, namely 45% of nurse educators had done the three-year diploma course leading to registration as nurse. It was interesting to note that 44% of the nurse educators had done a diploma course leading to registration as a nurse (general, psychiatric and community) and midwife as it implied that student nurses were also taught by nurse educators who have undergone the same course and could easily associate with them because they understood the challenges of the programme.

4.4.1.5 Qualifications of nurse educators in nursing education

In this sub-section, the respondents had to indicate their qualifications in nursing education.

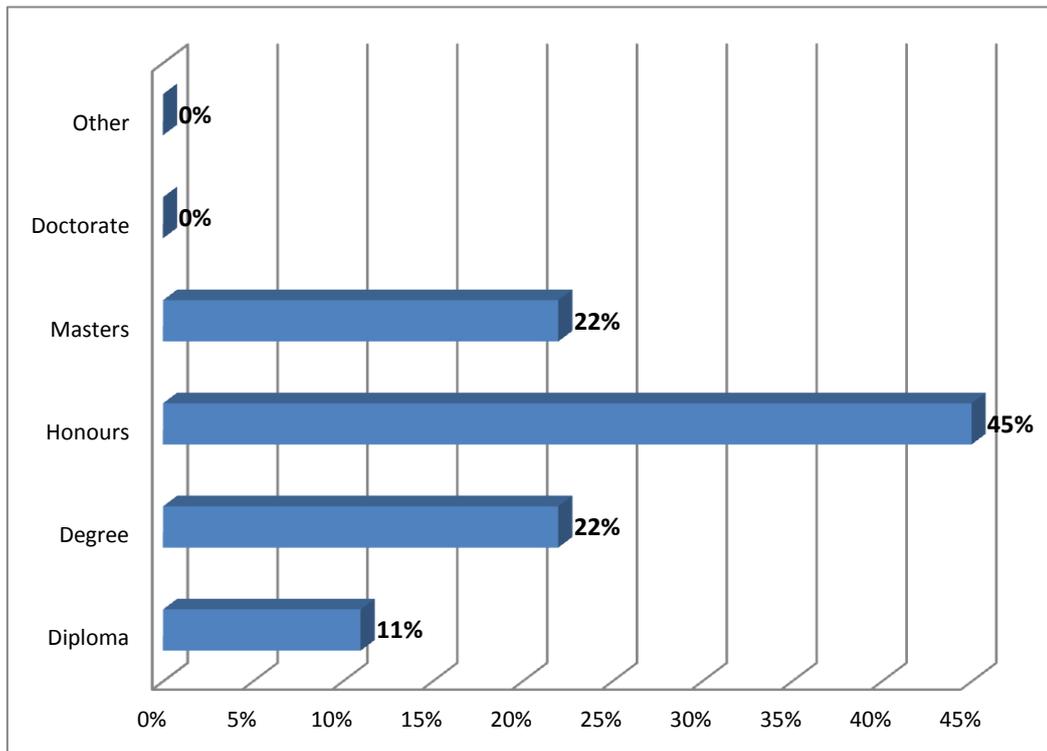


Figure 4.84 Responses on nurse educators on their qualifications in nursing education (N=9)

Eleven percent (n=1) of the nurse educators obtained the diploma in nursing education, 22% (n=2) had a degree qualification, 45% (n=4) had honours qualification and 22% (n=2) had a masters qualification. Many, namely 45%) of nurse educators had an honours degree qualification in nursing education. The qualifications exceeded the minimum requirement as stipulated by SANC (1985) as discussed in section 2.3.7.1. The qualifications indicate continuing professional development.

4.4.1.6 Registration with SANC for a post-basic clinical qualification

In this sub-section, the respondents had to indicate whether they were registered with the SANC for an additional post-basic qualification.

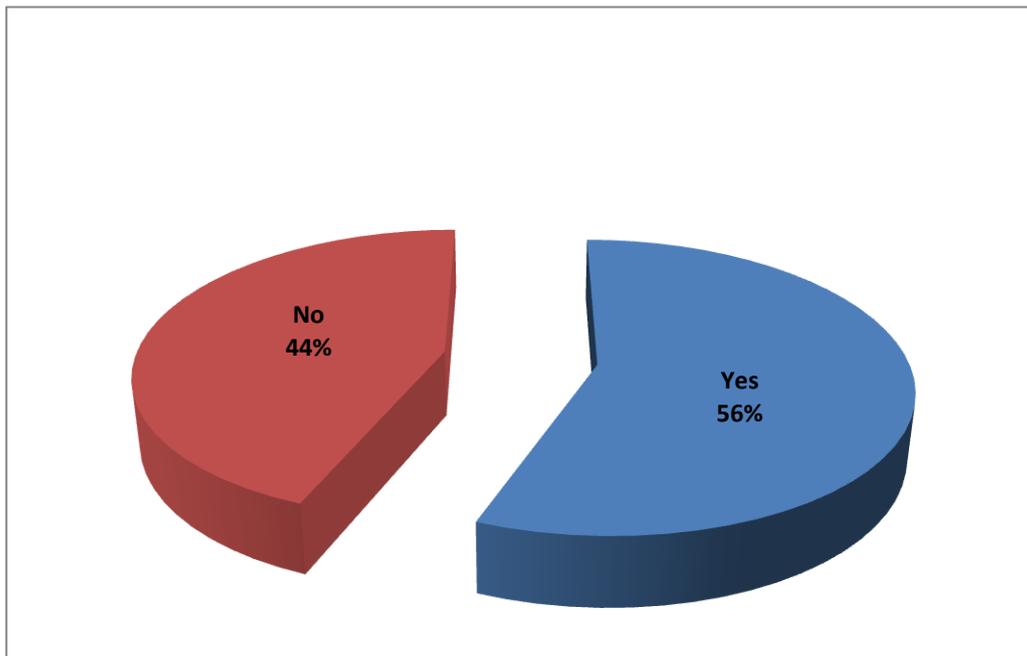


Figure 4.85 Responses of nurse educators on whether they are registered with SANC for a post-basic clinical qualification (N=9)

Fifty six percent (n=5) of the nurse educators indicated that they have registered with SANC for a post-basic clinical qualification whilst 44% (n=4) of nurse educators indicated that they did not have a post-basic clinical qualification. The majority 56% of nurse educators obtained a post-basic clinical qualification. These findings are consistent with SANC`s view that nurse educators should preferable have a post-basic clinical qualification (see section 2.3.7.2). Manias and Aitken (2005:73) state that post-basic qualifications for clinical educators are important as it prepare clinical educators for the role of a clinical teacher.

4.4.1.7 Post-basic clinical qualification

In this section, the nurse educators had to indicate the post-basic clinical qualifications which they obtained.

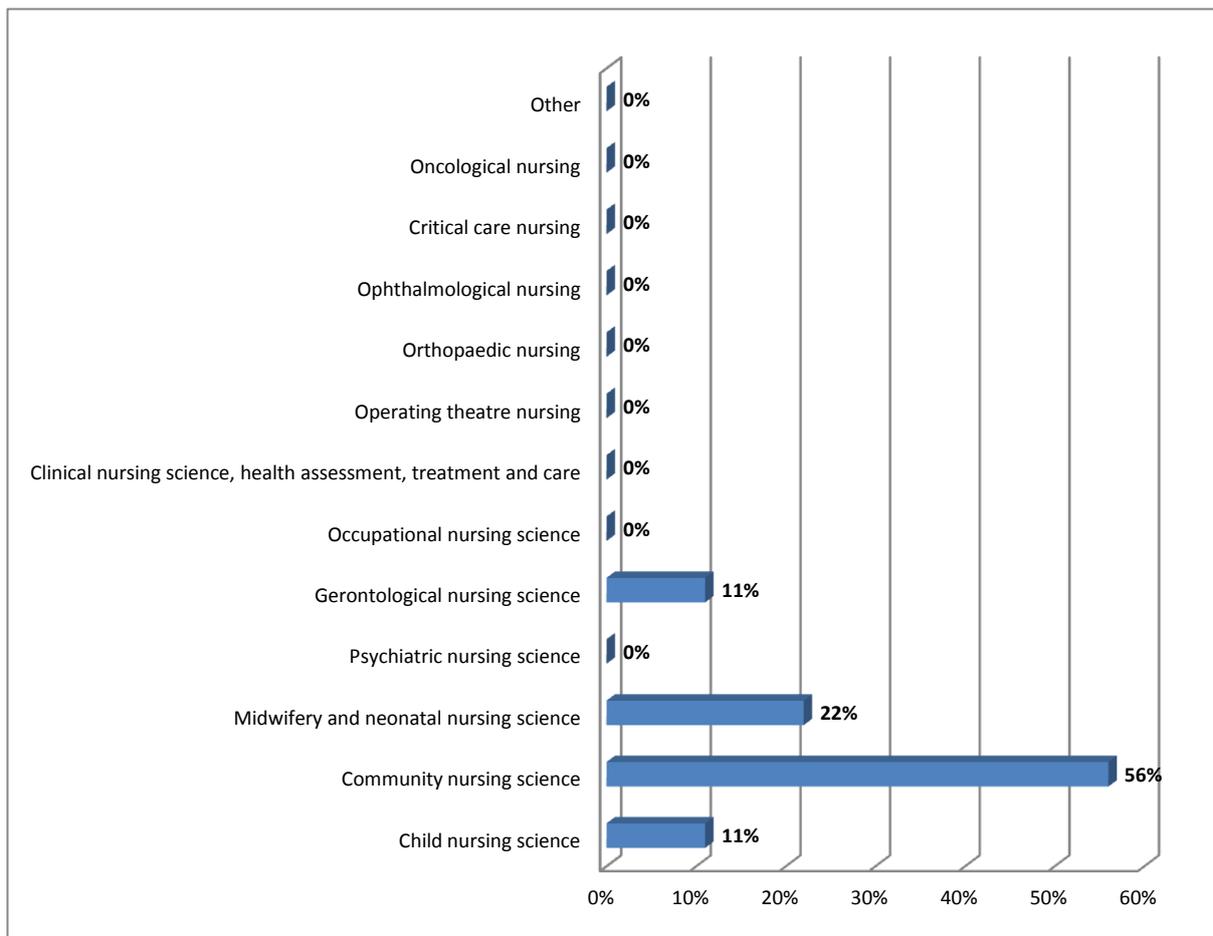


Figure 4.86 Responses of nurse educators on post-basic clinical qualifications (N=9)

Eleven percent (n=1) of the nurse educators was registered with the SANC for a child nursing science qualification, 56% (n=5) for community nursing science, 22% (n=2) for midwifery and neonatal nursing science and 11% (n=1) for gerontological nursing science qualifications. The majority, namely 56% of nurse educators had community nursing science as a clinical specialty.

4.4.1.8 Years of experience as a nurse educator in a teaching-learning environment

In this sub-section, the nurse educators were required to indicate their years of experience in the teaching learning environment.

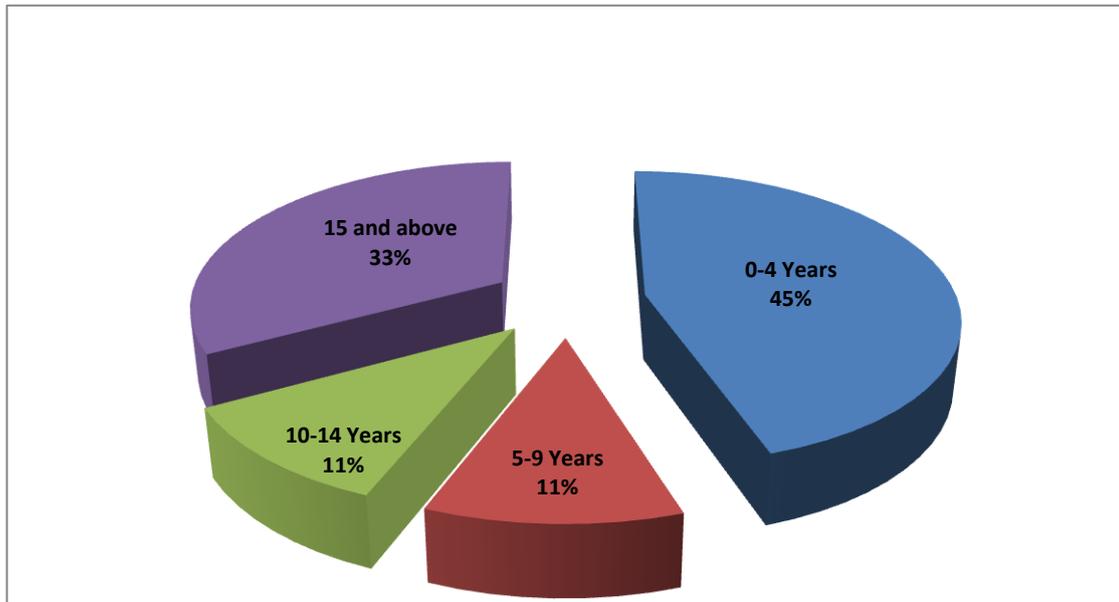


Figure 4.87 Responses of nurse educators on years of experience in a teaching learning environment (N=9)

Forty five percent (n=4) of the nurse educators had experience of between 0-4 years, 11% (n=1) had between 5-9, 11% (n=1) had between 10-14 and 33% (n=3) had 15 years of experience and above. Many, namely (45%) of nurse educators had less than five years experience. The findings imply that the majority, namely 45% of nurse educators who responded might not have the necessary experience as compared to those with more than five years experience. The findings are consistent with Waterson et al (2006:66) who reveals that student nurses raised concerns about the lack of skills and experience by some nurse educators and further indicated that these could be a contributory factor in poor performance by student nurses. Clark (2008:4) adds that experienced nurse educators engage students in active, independent learning methods. They have the potential to promote problem-solving methods in students in the academic and clinical environments. Novice nurse educators are at risk to “burn-out” quickly because they are usually ill-prepared to deal with the overwhelming organisational demands of teaching.

4.4.1.9 Level that nurse educators are teaching

In this sub-section, the nurse educators had to indicate on which level of students they were educating.

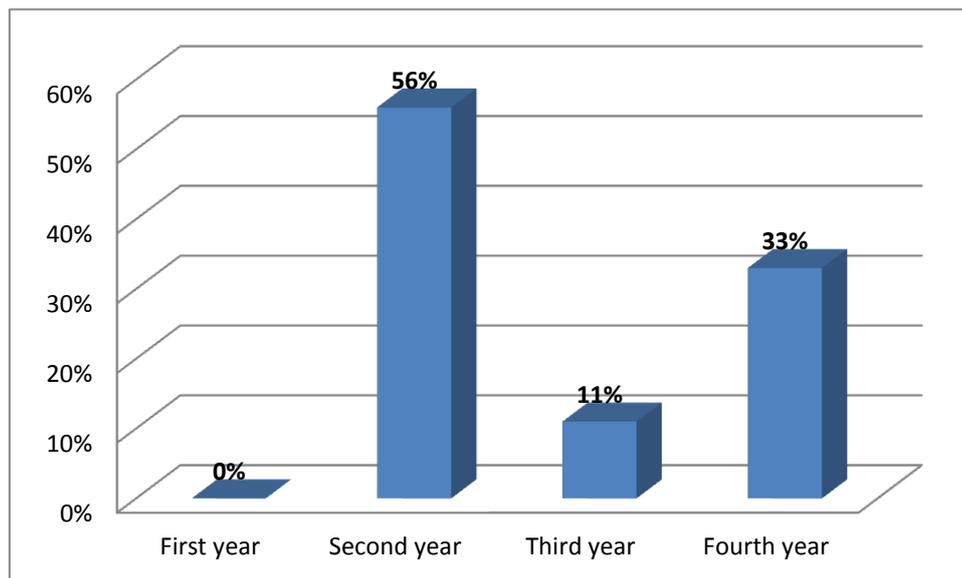


Figure 4.88 Responses of nurse educators on the level that they are teaching (N=9)

Fifty six percent (n=5) of nurse educators were teaching second year student nurses whilst 11% (n=1) were teaching third year student nurses and 33% (n=3) were teaching fourth-year student nurses. The majority 56% of nurse educators were teaching second-year level. The findings reveal that the majority 56% of the nurse educators who responded could not have responded accurately for questions pertaining to psychiatric and midwifery nursing sciences since these subjects commence in the third year level.

4.4.2 Section B: Theory

This section deals with the theoretical component of the four-year comprehensive programme of nursing education.

4.4.2.1 Subject(s) taught by nurse educators

This sub-section indicates the subjects taught by the nurse educators.

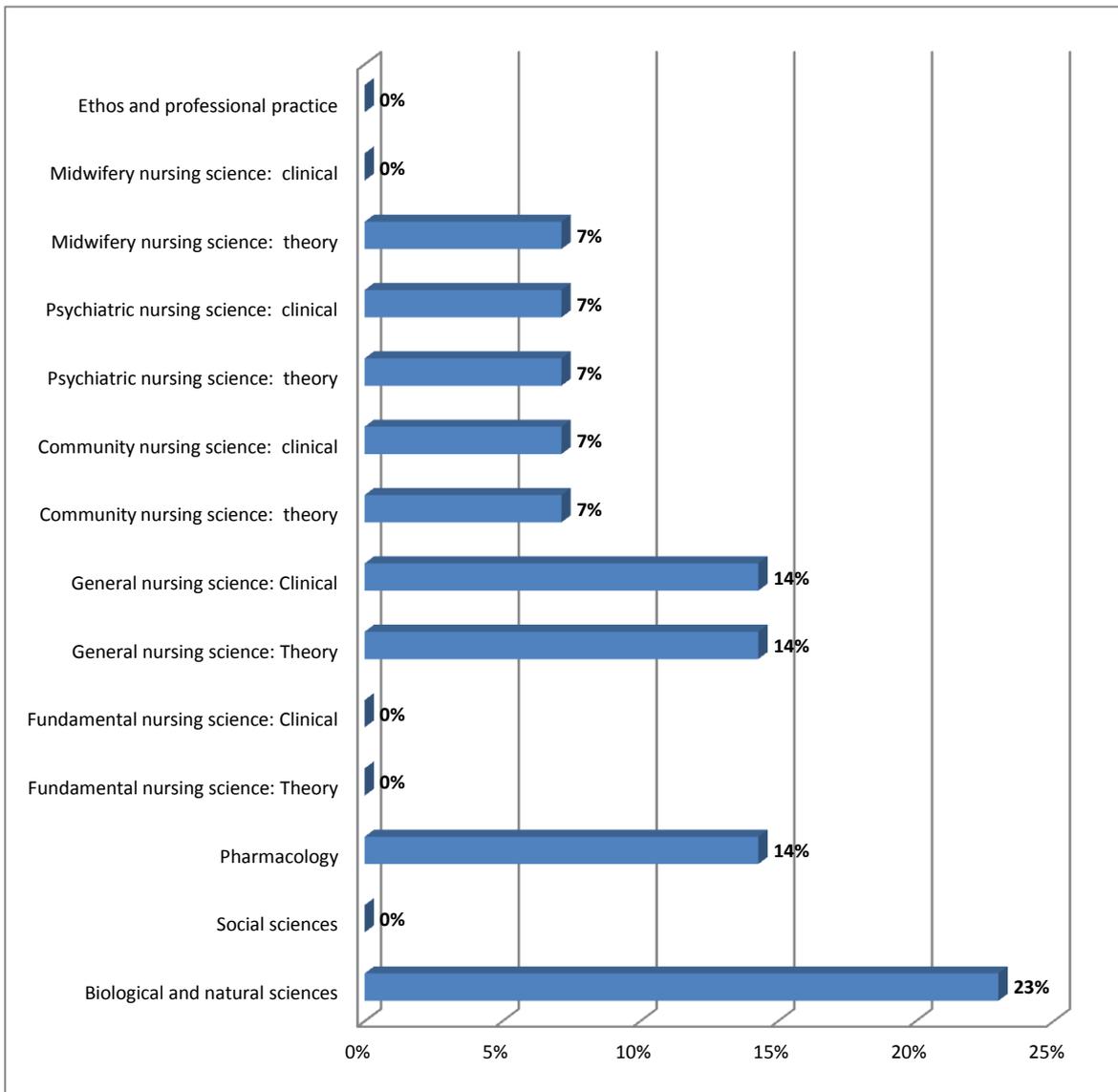


Figure 4.89 Responses of nurse educators on subjects that they are currently teaching (N=9)

Twenty three percent (n=3) of the nurse educators were teaching biological and natural sciences, 14% (n=2) indicated pharmacology, 14% (n=2) indicated general nursing science theory, 14% (n=2) indicated general nursing science clinical, 7% (n=1) indicated community nursing science theory, 7% (n=1) indicated community nursing science clinical, 7% (n=1) indicated psychiatric nursing science theory, 7% (n=1) indicated psychiatric nursing science clinical and 7% (n=1) indicated midwifery nursing science theory. Many, namely 23% of nurse educators were teaching biological and natural sciences which were indicated as the subjects in which most of the students failed.

4.4.2.2 Subject taught in the field of interest of nurse educator

In this sub-section, the nurse educators had to give an indication of their interest in the subject they were teaching during this study.

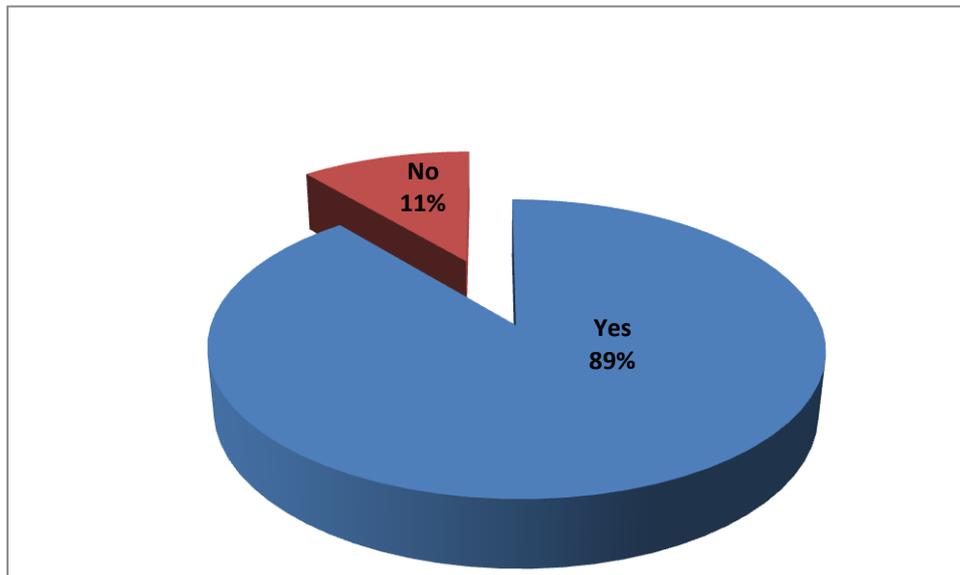


Figure 4.90 Opinions of nurse educators on interest in the subject they are currently teaching (N=9)

Eighty nine percent (n=8) of the nurse educators indicated that they were interested in the subject that they were teaching and 11% (n=1) indicated lack of interest in the subject. The findings revealed that the majority 89% of the nurse educators were interested in the subject that they were teaching.

Being a nurse educator is a big responsibility, since they are responsible for designing, implementing, evaluating and revising academic and continuing education programs for nurses. These include formal academic programs that lead to a degree or certificate, or more informal continuing education programs designed to meet individual learning needs. (Clark 2008:224).

4.4.2.3 Reasons for lack of interest in the subject taught

In this sub-section the nurse educators had to give the reasons for disinterest in the subjects they were teaching at the time of this study.

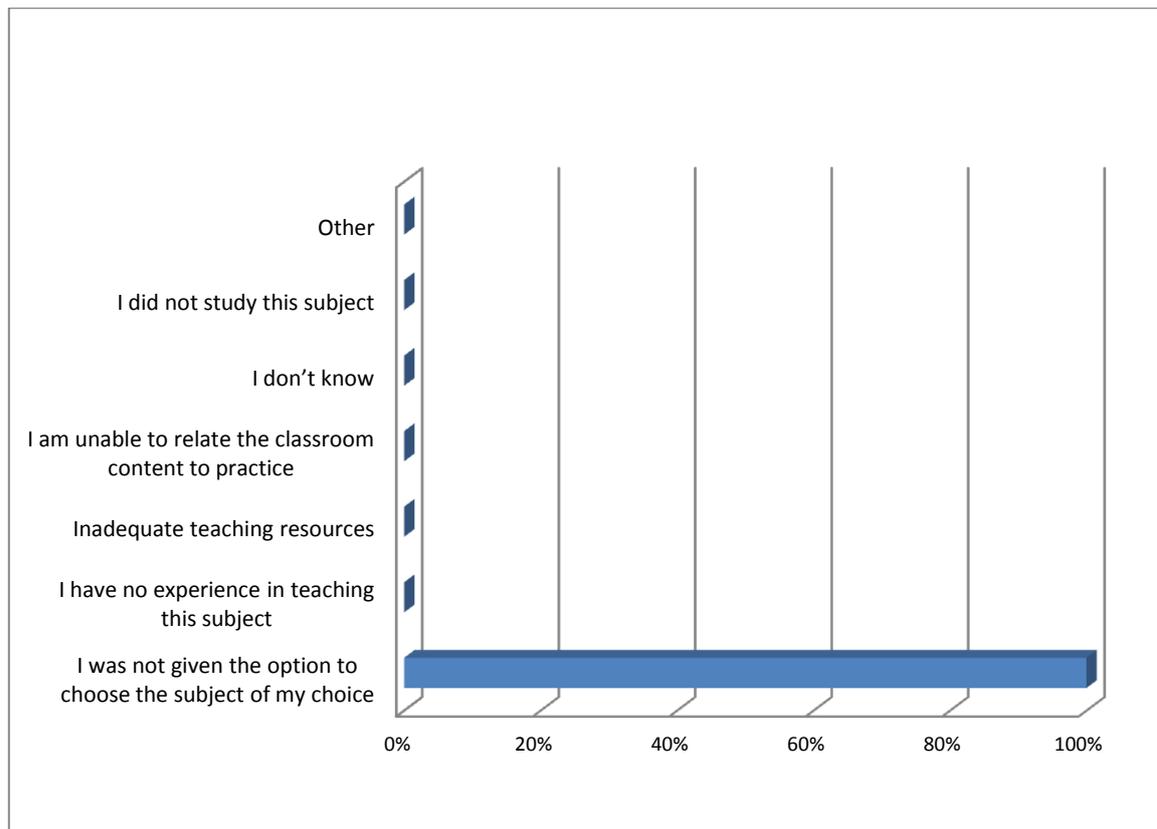


Figure 4.91 Reasons of nurse educators on non-interest regarding subject they are teaching (N=1)

All of the nurse educators (n=1) who indicated that they lacked interest in the subject taught indicated the reason as lack of options to choose the subject of choice. Waterson et al (2006:61) revealed that due to shortage of staff, lack of motivation and rotation system, nurse educators sometimes teach subjects in which they do not have expert knowledge and experience. Clark (2008:114) mentions that faculty development-identifying available resources, emphasising the current uses of computers, providing computer literacy/faculty awareness sessions, focusing on the instructional use of microcomputers, collaboration, and communication are often lacking in schools of nursing which creates a sense of disinterest in nurse educators.

4.4.2.4 Reasons for interest in the subject taught

In this sub-section, the nurse educators were required to indicate the reasons for their interest in the subject they were teaching at the time of this study. Of the total of respondents (N=8), 21 responses were given.

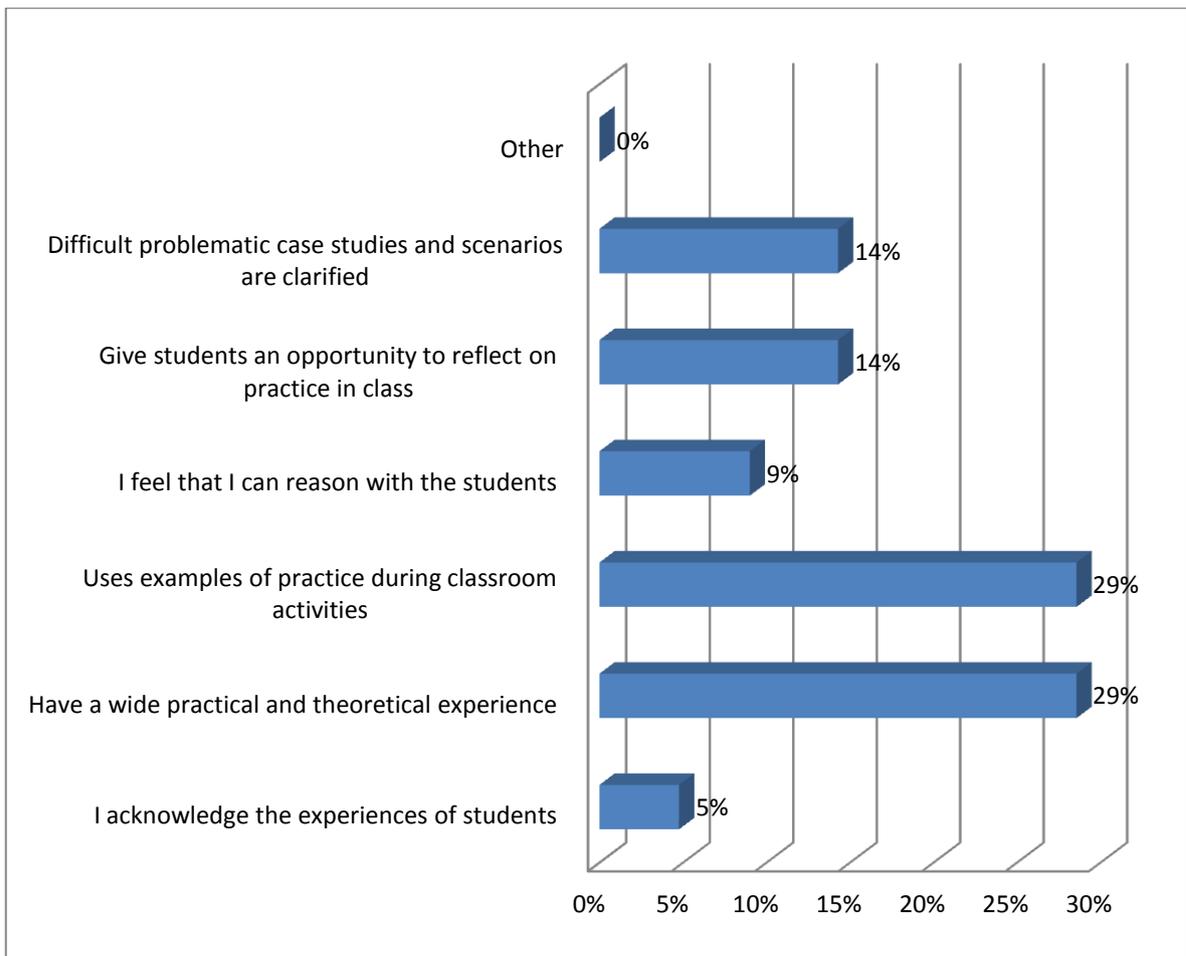


Figure 4.92 Reasons of nurse educators on interest regarding subject they are teaching (N=8)

Five percent (n=1) of nurse educators who indicated interest in the subject that they are teaching indicated the reasons for interest as acknowledgement of the experience of students, 29% (n=6) indicated that they had wide practical and theoretical experience, 29% (n=6) indicated that they use examples of practice during classroom activities, 9% (n=2) indicated that they could reason with the students, 14% (n=3) indicated that they provided students with opportunities to reflect on practice in class and 14% (n=3) indicated that difficult problematic case studies and scenarios are clarified. Many, namely 29%)of nurse educators indicated that they become interested in a subject if they can use examples of practice during classroom activities and that they have wide practical and theoretical experience. These findings are consistent with section 4.3.3.1.2 where student nurses indicated that they developed interest in a subject if they are able to apply theory in practice.

4.4.2.5 Availability of orientation to the nurse educator for the first time

In this sub-section the respondents were asked to indicate whether they were orientated when they were appointed at the college.

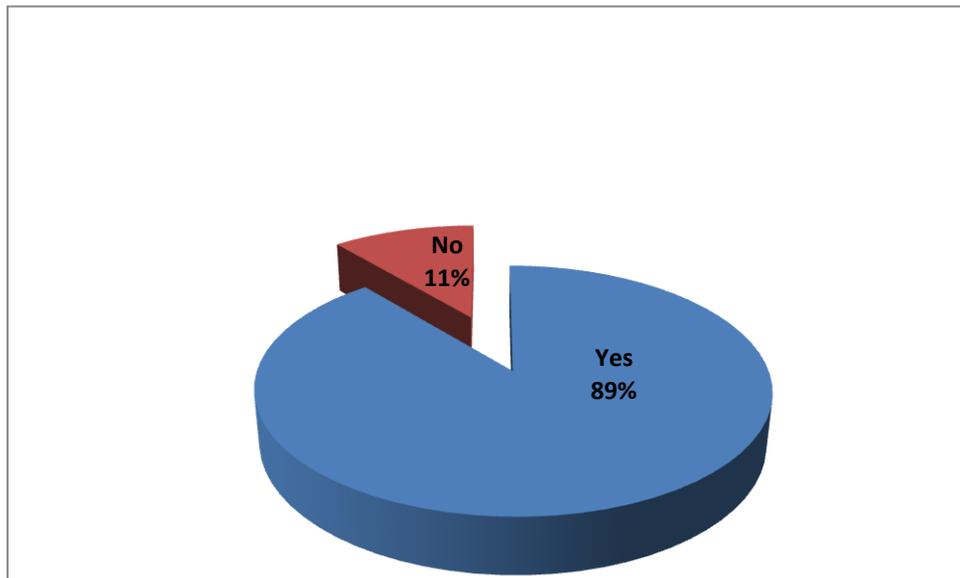


Figure 4.93 Responses of nurse educator on whether they were orientated for the first time (N=9)

Eighty nine percent (n=8) of nurse educators indicated that they were orientated for the first time when they became nurse educators whilst 11% (n=1) indicated that they were not orientated. The majority 89% of nurse educators were orientated when they became nurse educators. The findings are consistent with Waterson et al's view (2006:61) who indicate that effective support by subject specialists and subject heads help nurse educators to plan effectively, offer administrative support and contribute to teacher development.

Those in faculty roles are expected to anticipate the increasing complexity of the health care system and to prepare graduates who can think, make decisions in uncertainty, take risks, facilitate change, and communicate effectively. These same faculty members are also expected to conduct research, advance the discipline, and provide service to the profession and their academic institutions. The multidimensional nature of the nurse educator role, with competing expectations related to teaching, scholarship, service, maintaining clinical competence and continued professional growth is difficult to balance, especially for new faculty members, many of whom were not prepared as

nurse educators. Experienced teachers, with practical knowledge of the faculty role, are an important resource for new teachers. However, given projected retirements and resignations of two-thirds of the current faculty over the next 20 years this significant resource will be lost (Baxter 2010:2; National League for Nursing 2006:3).

4.4.2.6 Aspects included in the orientation

In this sub-section, respondents were asked to indicate those aspects that were included in the orientation they received when they entered the college.

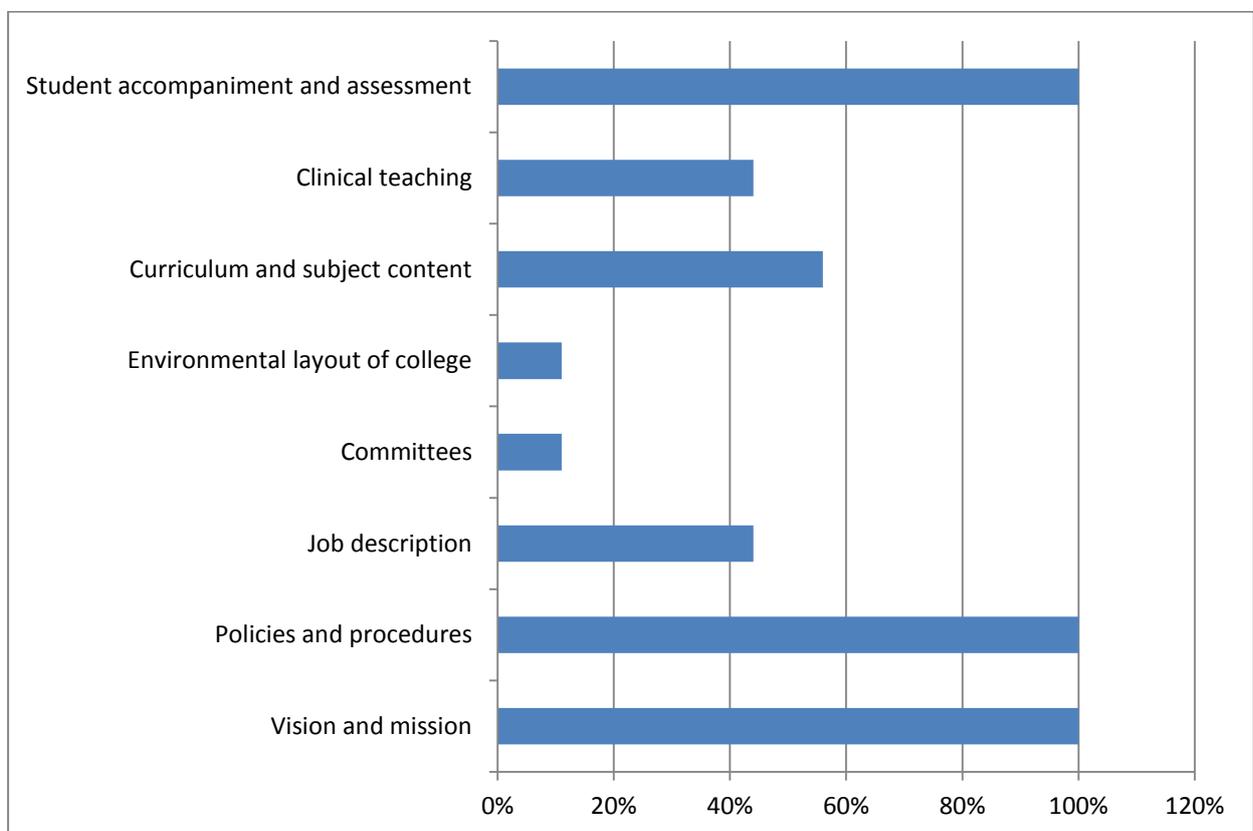


Figure 4.94 Responses of nurse educators on aspects included in the orientation (N=9)

This open-ended question allowed the respondents to list the aspects on which they were orientated. All (100%) of the nurse educators indicated that they were orientated on the mission and vision of the College, 44% (n=4) indicated policies and procedures, 13% (n=5) indicated job description, 11% (n=1) indicated committees, 11% (n=1) indicated environmental layout of the college, 44% (n=4) indicated curriculum and

subject content, 100% (n=9) indicated clinical teaching and student accompaniment and assessments. All (N=9) of nurse educators were orientated on the mission and vision of the College, clinical teaching, accompaniment and assessments of students.

In order to recruit and retain qualified nurse educators, the National League for Nursing (2006:2) advocates the use of mentoring as a primary strategy to establish healthful work environments and facilitate the ongoing career development of nurse faculty. Mentoring is relevant across the entire career continuum of an educator, and encompasses orientation to the faculty role; socialisation to the academic community; development of teaching, research, and service skills; and facilitation of the growth of future leaders in nursing and nursing education. Effective mentoring relationships reflect a variety of models, thereby enabling all members of the academic nursing community to establish and maintain healthful work environments, and expecting each to fulfil this role.

4.4.2.7 Availability of an opportunity to observe a nurse educator present a lesson for the first time

In this sub-section, respondents were asked to indicate whether they were given an opportunity to observe another nurse educator presenting a lesson for the first time.

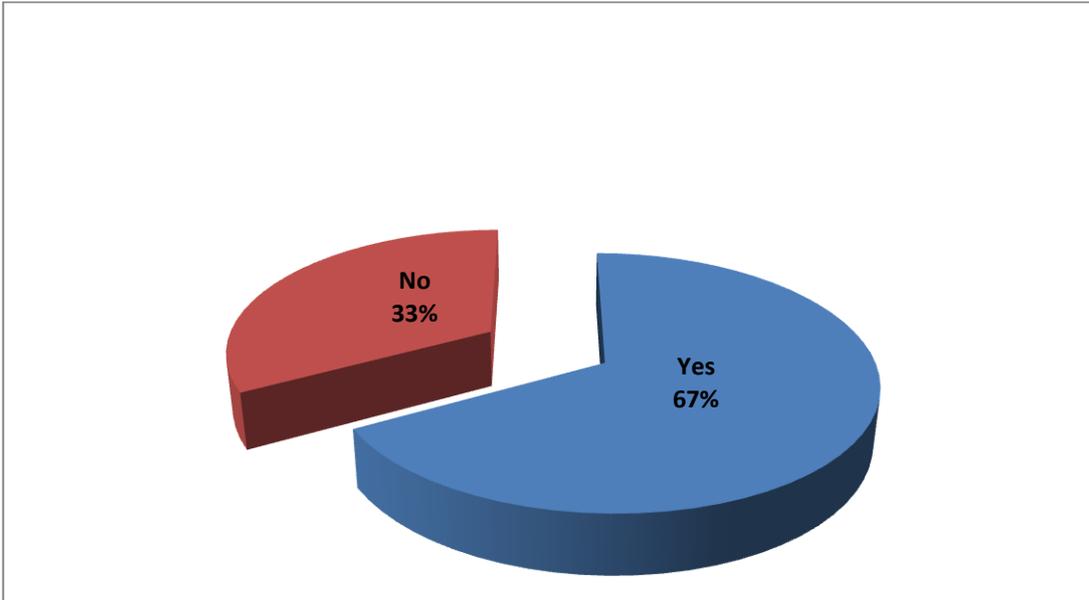


Figure 4.95 Responses of nurse educators on whether they were given an opportunity to observe another nurse educator present a lesson for the first time (N=9)

Sixty seven percent (n=6) of the nurse educators indicated that they were given an opportunity to observe a nurse educator present a lesson when they joined the college for the first time whilst 33% (n=3) were not given the opportunity. The majority 67% of the nurse educators were given an opportunity to observe another nurse educator present a lesson.

According to the National League of Nursing (2006:3), peer mentoring is an essential component of the introduction of the new faculty member to the nursing school. The new faculty members themselves often pool their information and expertise and support each other. Co-mentoring by more experienced faculty members is characterised by reciprocity and involves listening and being listened to, teaching as well as learning, and offering and obtaining information and support through recurrent dialogue. Both of these models; peer mentoring and co-mentoring are characterised by shared support and caring, which are considered important for engendering community, preserving scholarship, and cultivating teaching practices.

4.4.2.8 Person(s) observed presenting a lesson

In this sub-section, respondents were asked to indicate the person(s) whom they observed presenting a lesson.

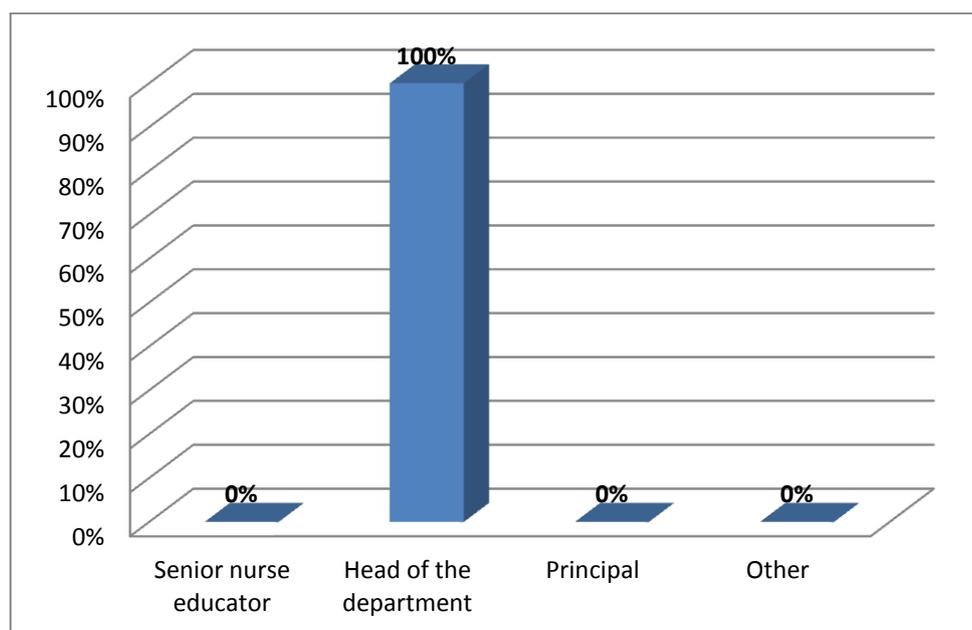


Figure 4.96 Responses of nurse educators on person(s) observed presenting the lesson (N=9)

All 100% (n=9) of the nurse educators observed the Head of the department present the lesson for the first time. The findings are consistent with the view of Waterson et al (2006:61) who is of the view that subject experts should play an important role in support of less skilled and experienced nurse educators.

4.4.2.9 Availability of supervision before nurse educator presented a lesson for the first time

In this sub-section, respondents were asked to indicate whether they were supervised presenting a lesson for the first time.

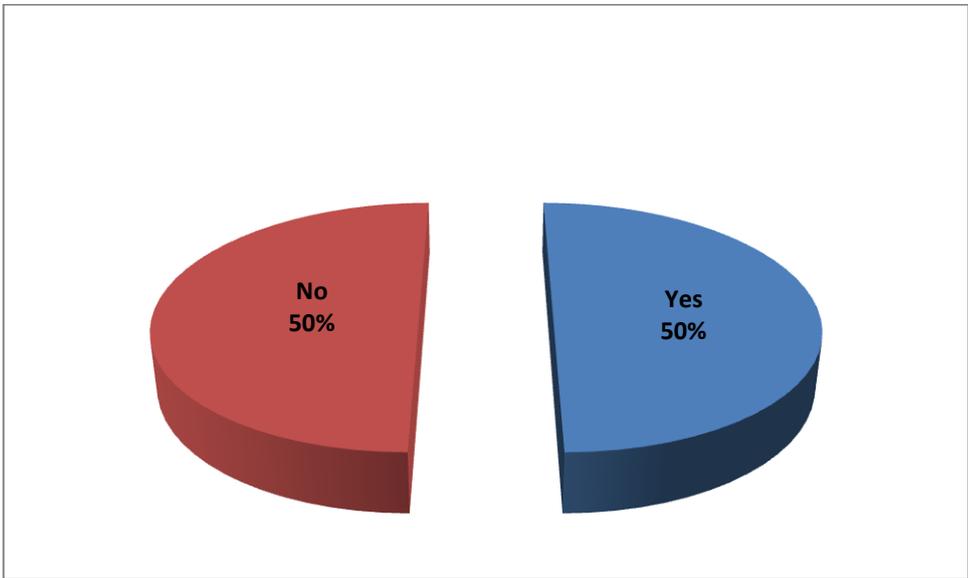


Figure 4.97 Responses of nurse educators on whether they were supervised presenting a lesson for the first time (N=8)

Fifty percent (n=4) of the nurse educators indicated that they were supervised presenting a lesson a lesson for the first time whilst 50% (n=4) of the nurse educators indicated that they were not supervised.

Dennison (2010:341) is of the opinion that peer mentoring and supervision is a solution to the many challenges that nursing education is faced with today, including increasing class sizes, rising competency requirements, decreasing number of faculty, tightening budgets, and shrinking clinical placement opportunities.

4.4.2.10 Person(s) who supervised nurse educator before presenting a lesson for the first time

In this sub-section, respondents were asked to indicate the person(s) who supervised them when they presented a lesson for the first time.

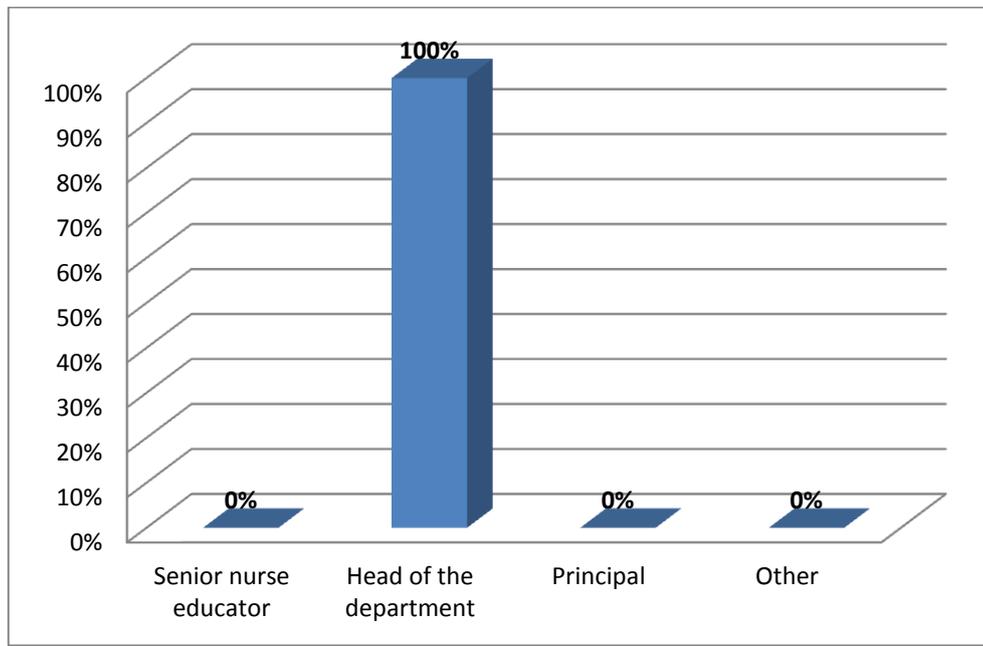


Figure 4.98 Responses of nurse educators on person(s) who supervised new nurse educators before they presented a lesson for the first time (n=4)

One hundred percent (n=4) of the nurse educators who indicated that they were supervised presenting a lesson for the first time indicated that they were supervised by the head of the department. The findings are consistent with section 4.4.2.8.

4.4.2.11 Reasons provided for not having been supervised before presenting lesson for the first time

In this sub-section, respondents who were not supervised were asked to indicate reasons as provided to them.

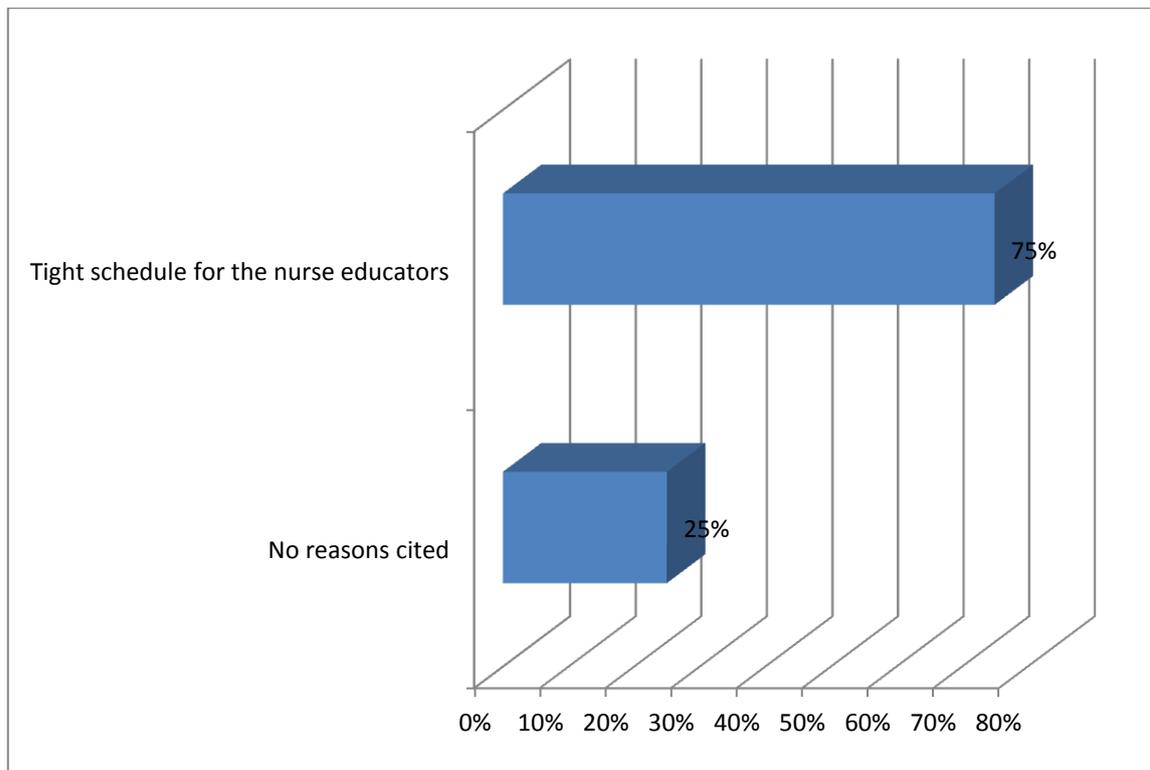


Figure 4.99 Responses of nurse educators on reasons for not been supervised on lesson presentation (n=4)

This open-ended question allowed nurse educators to indicate the reasons for not having been supervised when they presented the lesson for the first time. Twenty five percent (n=1) of nurse educators indicated that no reasons were cited and 75% (n=3) indicated that nurse educators were having a tight schedule. The findings are consistent with section 4.3.3.2.10 where student nurses cited reasons for nurse educators' non-availability revealed to them as workload.

4.4.2.12 Provision of theoretical outcomes to student nurses for the relevant discipline involved in

In this sub-section, respondents were asked to indicate whether they provided student nurses with theoretical outcomes.

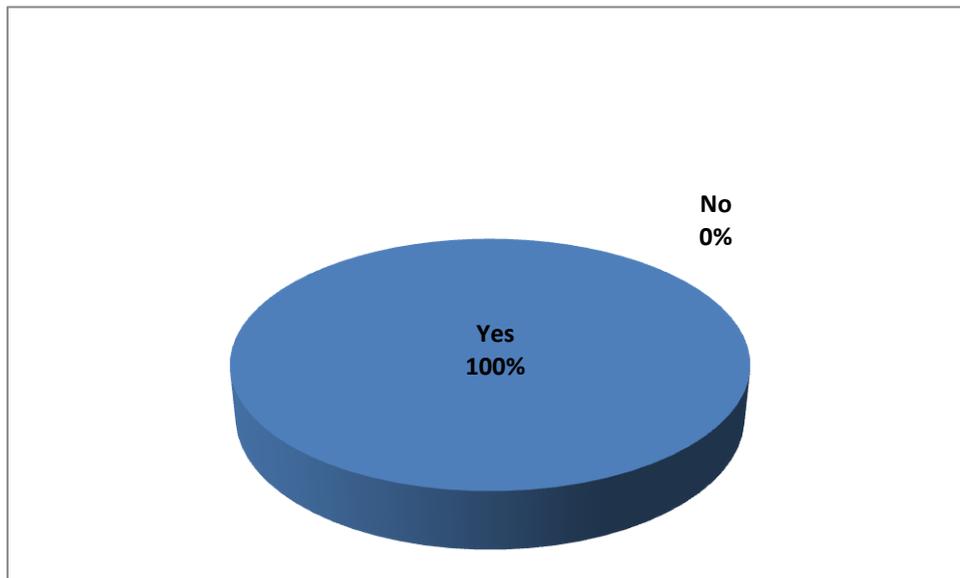


Figure 4.100 Responses of nurse educators on whether they provide theoretical outcomes to student nurses for the relevant disciplines they are involved in (N=9)

All 100% (n=9) of the nurse educators indicated that they provided theoretical outcomes to student nurses for the relevant disciplines that they were involved in. The findings are consistent with the responses of the student nurses as reflected in section 4.3.4.2.1.

4.4.2.13 Teaching strategies used during theoretical instruction

In this sub-section, respondents were asked to indicate the teaching strategies used during theoretical instruction. Of the total responses (N=9), 45 responses were given.

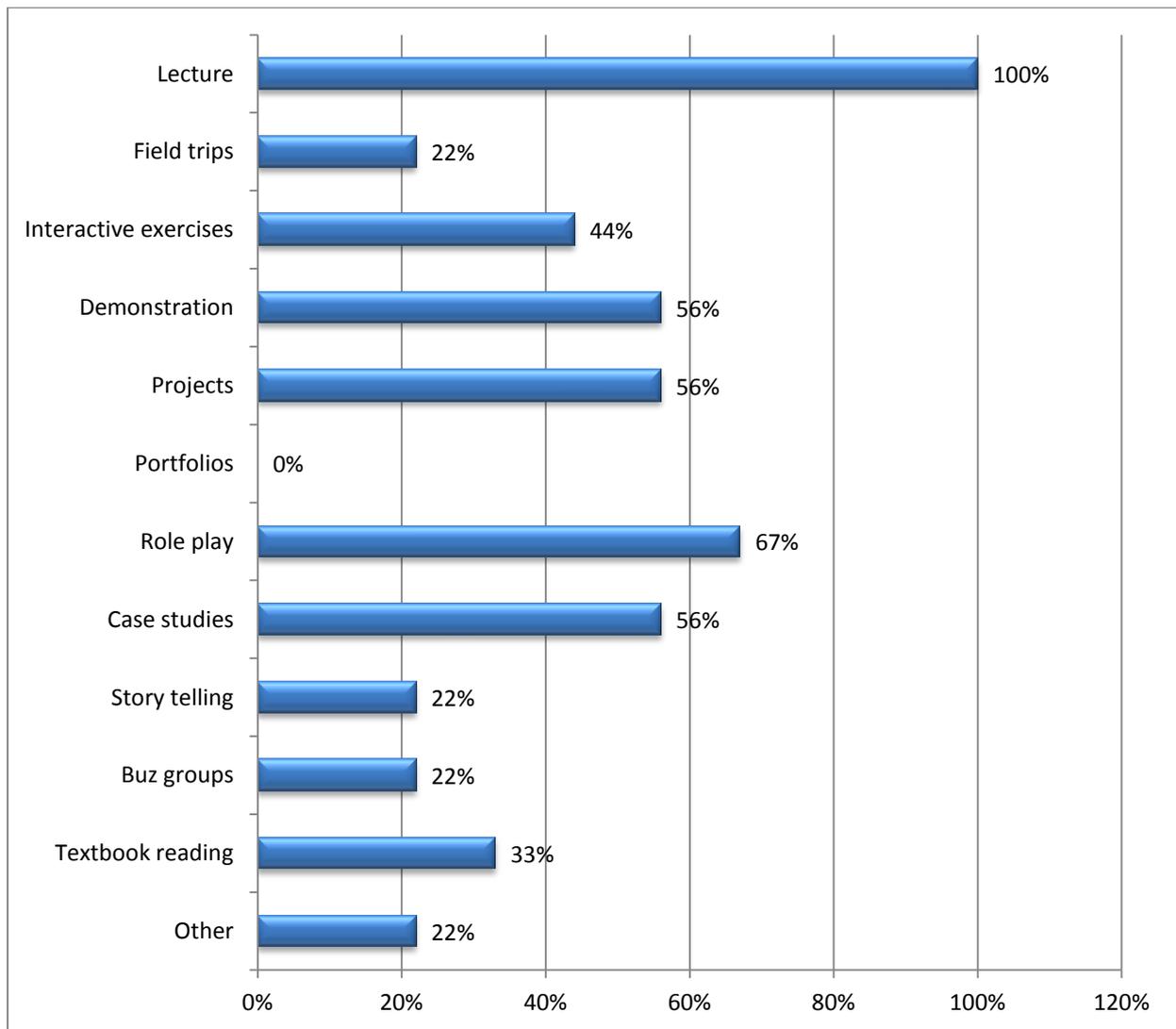


Figure 4.101 Responses of nurse educators on teaching strategies used during theoretical instruction (N=9)

Hundred percent (n=9) of the nurse educators indicated the teaching strategies they use in theory as lectures, 22% (n=2) indicated field trips, 44% (n=4) indicated interactive exercises, 56% (n=5) indicated demonstrations, 56% (n=5) projects, 67% (n=6) indicated role plays, 56% (n=5) indicated case studies, 22% (n=2) indicated story telling, 22% (n=2) indicated buzz groups, 33% (n=3) indicated textbook reading and 22% (n=2) stated other teaching strategies. The findings revealed that although 100% of the nurse educators still use the lecture method as the preferred strategy during theory they also use other teaching strategies which encourages utilisation of concrete experiences, reflection, active experimentation and abstract conceptualisation as discussed in section 2.2.5.1 to 2.2.5.4.

In a study conducted by Sinclair and Ferguson (2009:7) using mixed method research, it was found that the combination of lecture and simulation increased students' self-confidence for nursing practice. Students also reported higher levels of satisfaction, effectiveness and consistency with their learning style when exposed to the combination of lecture and simulation than the control group, who were exposed to lecture as the only method of teaching and learning.

4.4.2.14 Amount in percentage that the nurse educator uses in presentation of theory using lecture method

In this sub-section, respondents were asked to indicate the amount of time that they spend presenting theory through the lecture method.

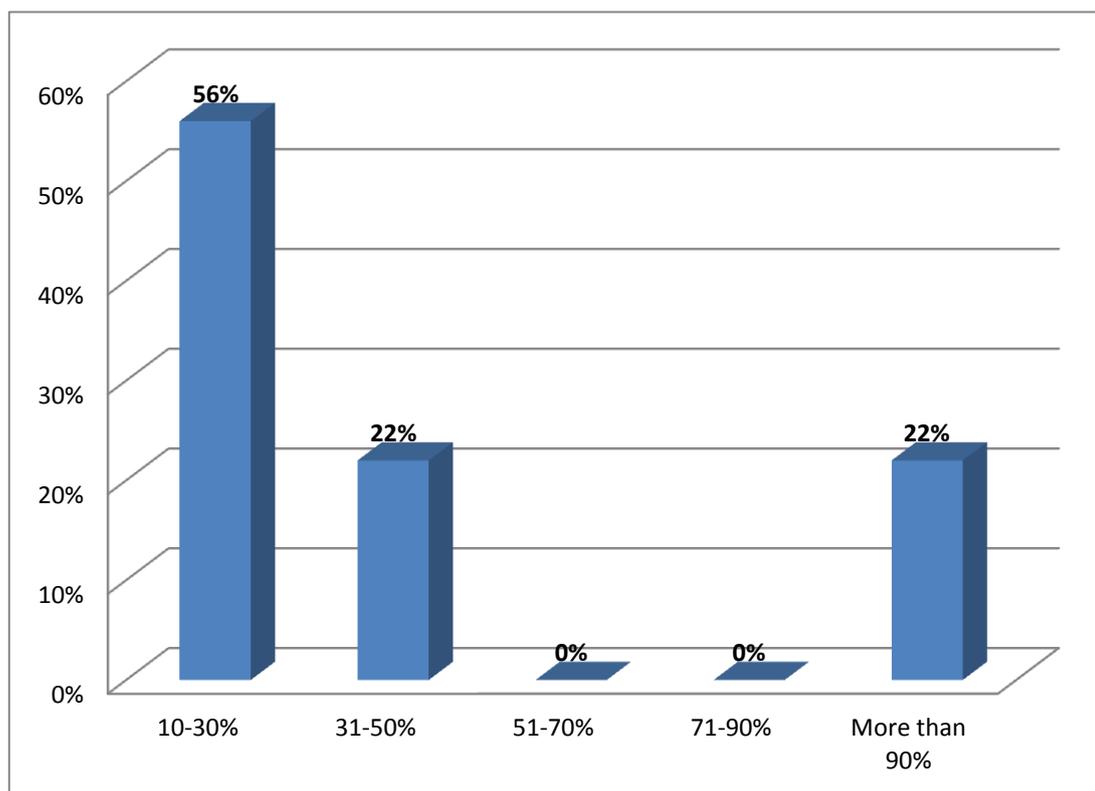


Figure 4.102 Responses of nurse educators on the amount in percentage that they use in presentation of theory using lecture method (N=9)

Fifty six percent (n=5) of the nurse educators indicated the proportion of lesson presented through the lecture method as 10-30%, 22% (n=2) indicated between 31-50% and 22% (n=2) indicated more than 90%. The majority 56% used 10-30%

presenting lesson through the lecture method. Although the findings are consistent with the responses of student nurses in section 4.3.5.1 5, it is not consistent with the findings of nurse educators in section 4.4.2.13 and student nurses in section 4.3.5.1.4 where majority (100%) of nurse educators and many (27%) student nurses respectively indicated lecture method as the preferred teaching strategy.

4.4.2.15 Nurse educators' opinions on how they provide for student nurses' different learning styles

In this sub-section, respondents' opinions were elicited on how they provided for student nurses' different learning styles.

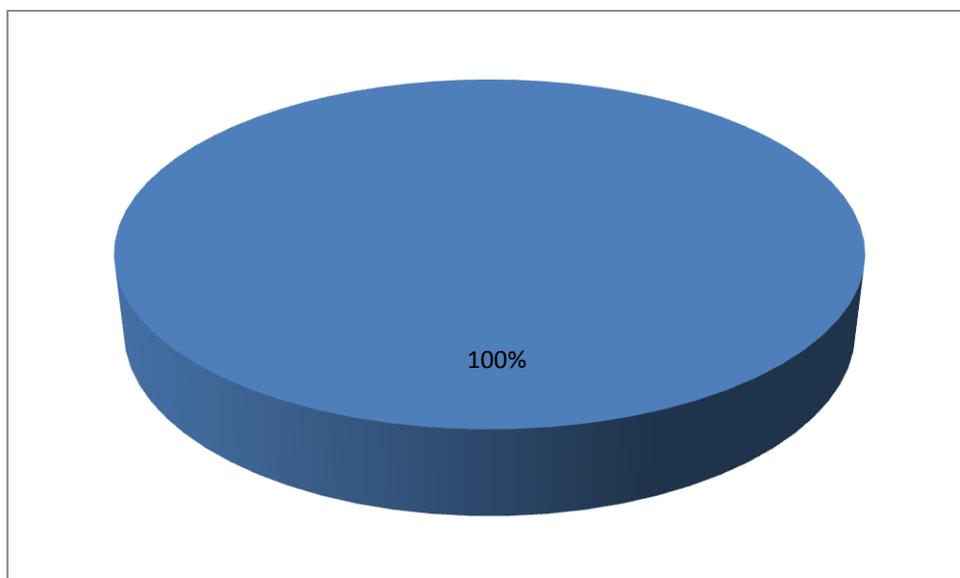


Figure 4.103 Responses of nurse educators on how they provide for student nurses' different learning styles (N=9)

This open-ended question allowed nurse educators to explain how they provide for the students' different learning styles. All 100% (n=9) indicated that they incorporate different teaching strategies in one lesson plan that covers different learning styles.

In a study by Cavanagh, Hogin and Ramgopal (1995:177) using Kolb's Learning Styles Inventory it was found that students having a predominantly concrete learning style were 53.7%, while 46.3% were predominantly reflective. This finding is in keeping with those of Laschinger and Boss (1984:375), who suggest that they are supportive of Kolb's theoretical tenet that concrete learners tend to choose people-oriented

professions. Chi-squared tests were used to determine if the respondent's learning styles varied with either age, sex or having been in employment prior to becoming a nursing student; no statistically significant associations were found. The findings have reinforced the need for using a variety of delivery styles with students, with an emphasis on participation and experiential learning. This need for variety is essential given the distribution of learning styles found with the students. Nurse educators are urged to re-examine perceptions and assumptions about student learning needs.

4.4.2.16 Ability to discuss aspects with student nurses during theoretical instruction

In this sub-section, respondents were asked to indicate whether they were able to discuss the listed aspects with student nurses during theoretical instruction.

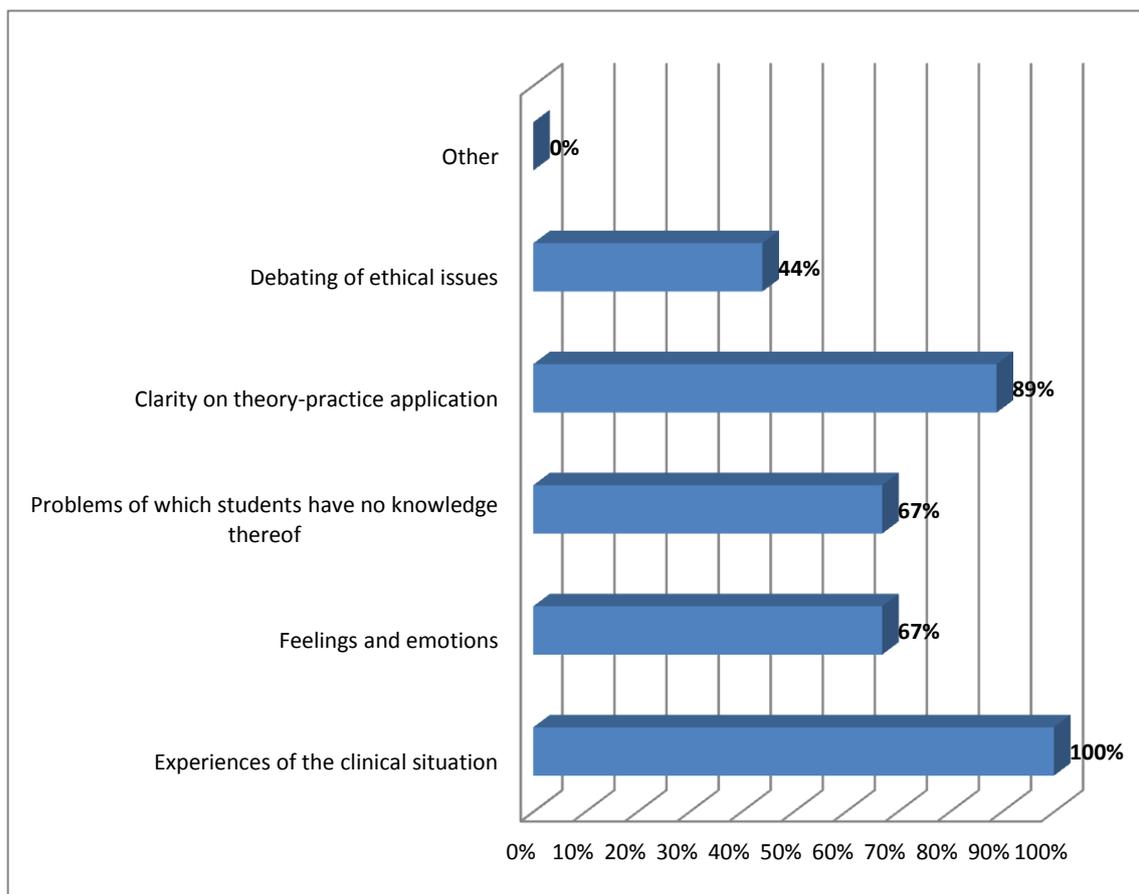


Figure 4.104 Responses of nurse educators on the ability to discuss certain aspects with student nurses during theoretical instruction (N=9)

All 100% (n=9) of nurse educators indicated that they are able to discuss the experiences of the clinical situation with student nurses, 67% (n=6) indicated feelings and emotions, 67% (n=6) indicated problems which students have no knowledge thereof, 89% (n=8) indicated clarity on theory-practice application, 44% (n=4) indicated debates on ethical issues. The majority, namely 100% and 89% of the nurse educators were able to discuss clinical experiences with student nurses and clarity on theory-practice application. These findings are consistent with the findings in section 4.3.4.1.2 and 4.3.5.1.2 wherein many, namely 27% of student nurses and the majority 71% indicated that nurse educators were able to discuss their experiences of clinical situation with them.

Borucki and Krouse (2005) indicate that in their study students reported wanting to be actively involved in the classroom; their preference for hands-on work and their need for relevant information, details, and examples; their need for visual cues; and their need for teacher organisation, details and step-by-step instructions. The implications for nursing educators as a result of this study include the need to make multiple methods of learning available to students to meet their diverse learning styles. Nurse educators can better engage students in the learning process and foster essential critical thinking skills if they understand their learning needs.

4.4.2.17 Opinions of nurse educators on how they ensure that student nurses bring the clinical experiences into the classroom situation

In this sub-section, respondents' opinions were elicited on how they ensured that student nurses bring the clinical experiences into the classroom environment. The respondents could have given more than one opinion.

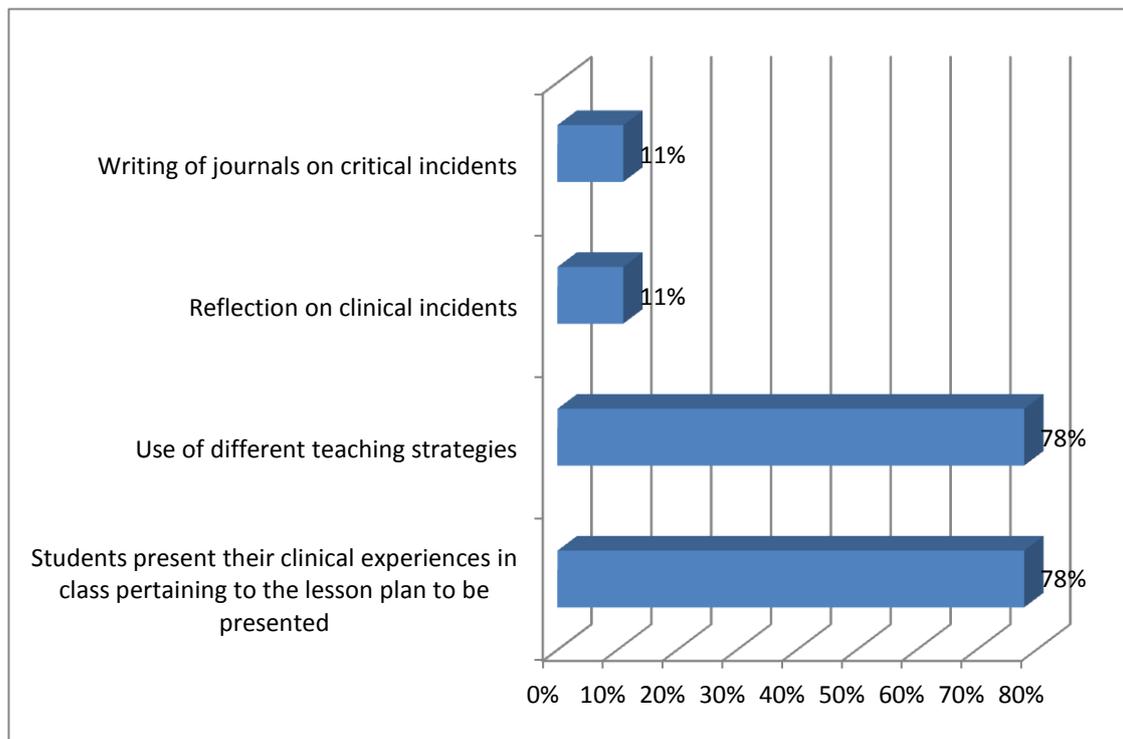


Figure 4.105 Responses of nurse educators on how they ensure that student nurses bring the clinical experiences into the classroom situation (N=9)

This open-ended question allowed nurse educators to explain how they ensure that student nurses are able to bring the clinical experiences into the classroom situation. Seventy eight percent (n=7) of the nurse educators indicated that they allow students to present their clinical experiences in class pertaining to the lesson plan to be presented. Seventy eight percent (n=7) indicated that they use different teaching strategies, 11% (n=1) indicated that they allow student nurses to reflect on clinical incidents and 11% (n=1) indicated that they encourage student nurses to write journals on critical incidents. The majority, namely 78% of the nurse educators indicated that they allow students to present their clinical experiences in class pertaining to the lesson plan to be presented and that they use different teaching strategies to ensure that student nurses are able to bring the clinical experiences into the classroom situation.

Mohide and Matthew-Maich (2007:37) emphasise critical thinking in academic and professional practice courses, with a view to improving the quality of a student’s thinking “by skillfully taking charge of the structures inherent in thinking and imposing intellectual standards upon them.”

The authors state that it is within the context of critical thinking that students learn the fundamentals of health sciences research and develop a beginning understanding of evidence-based practice. Professional practice courses provide excellent clinical opportunities for students to use their theoretical knowledge in the application of evidence based principles and processes, under the guidance and supervision of clinical teachers and nurse educators (Halarie 2010:1; Ousey & Gallagher 2007:199). One of the implicit benefits of this educational approach is the reciprocal learning from which all parties benefit, as each gains understanding of the others' specific competencies and individual approaches (Mohide & Matthew-Maich 2007:36).

4.4.2.18 Structure of block system

In this sub-section, respondents were asked to indicate the structure of a block system.

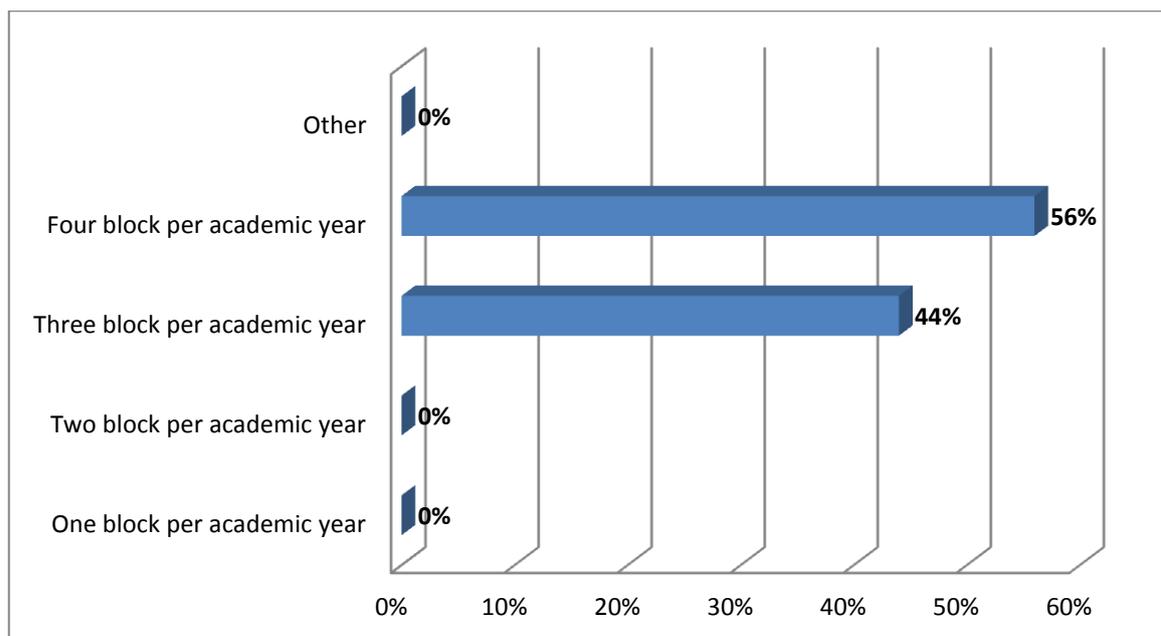


Figure 4.106 Responses of nurse educators on the structure of the block system (N=9)

Forty four percent (n=4) of the nurse educators indicated the structure of the block system as three blocks per academic year and 56% (n=5) indicated four block per academic year. The majority 56% of nurse educators indicated the structure of the block system as four blocks per academic year.

4.4.2.19 Length of each block

In this sub-section, respondents were asked to indicate the length of each block.

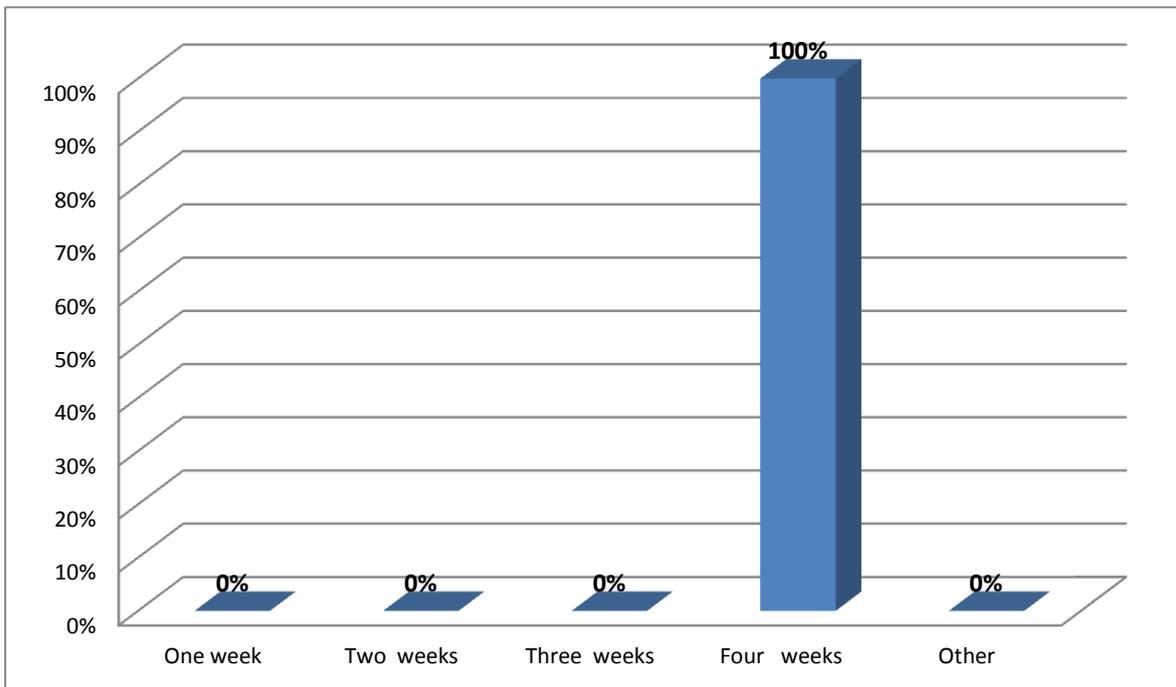


Figure 4.107 Responses of nurse educators on the length of each block (N=9)

All 100% (n=9) of the nurse educators indicated the length of each block as four weeks.

4.4.2.20 Periods allocated to the subject during block that nurse educator is teaching

In this sub-section, respondents were asked to indicate the number of periods that are allocated to a particular subject during the block period.

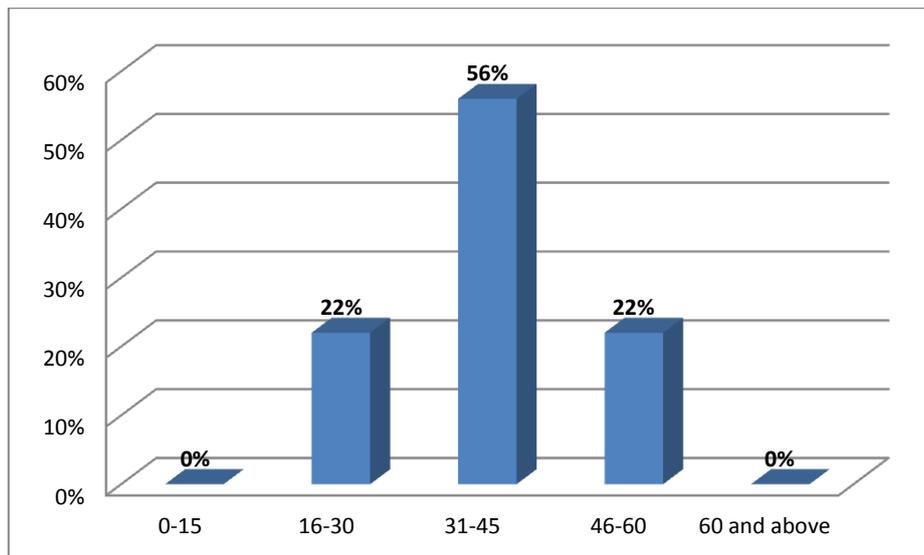


Figure 4.108 Responses of nurse educators on periods allocated to a subject during block (N=9)

Twenty two percent (n=2) of the nurse educators indicated periods allocated per block as between 16-30, 56% (n=5) indicated between 31-45 and 22% (n=2) indicated between 46-60 periods. The findings revealed that the majority, namely 56% of nurse educators were teaching between 31-45 periods per block.

4.4.2.21 Availability of sufficient resources for theory presentation

In this sub-section, the respondents were required to indicate if there are sufficient resources for the presentation of theoretical aspects of the programme.

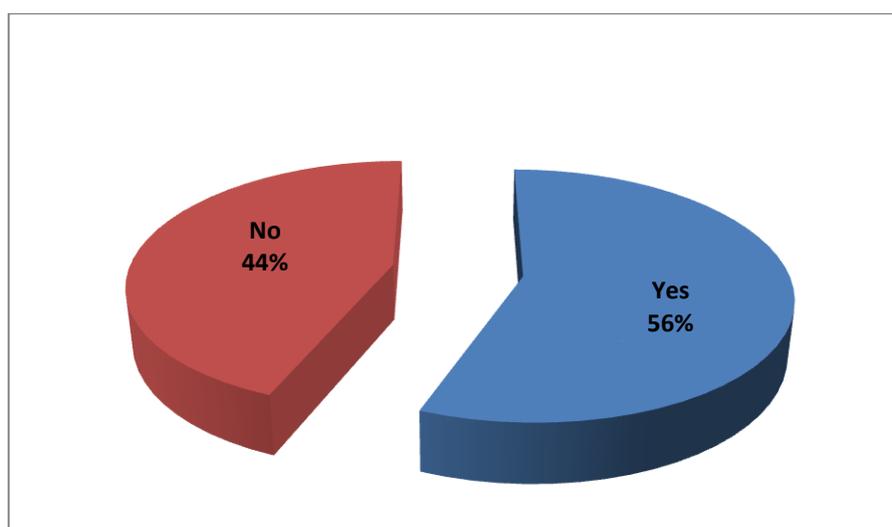


Figure 4.109 Responses of nurse educators on whether there are sufficient resources for theory presentation (N=9)

Fifty six (n=5) of nurse educators indicated that there were sufficient resources for theory presentation whilst 44% (n=4) of nurse educators indicated that there were not sufficient resources. The majority, namely 56% of the nurse educators indicated that there were sufficient resources for theory presentation.

4.4.2.22 Indication of which material resources are not available

In this sub-section, the respondents had to indicate which material resources were not available in the nursing college. More than one response could be given.

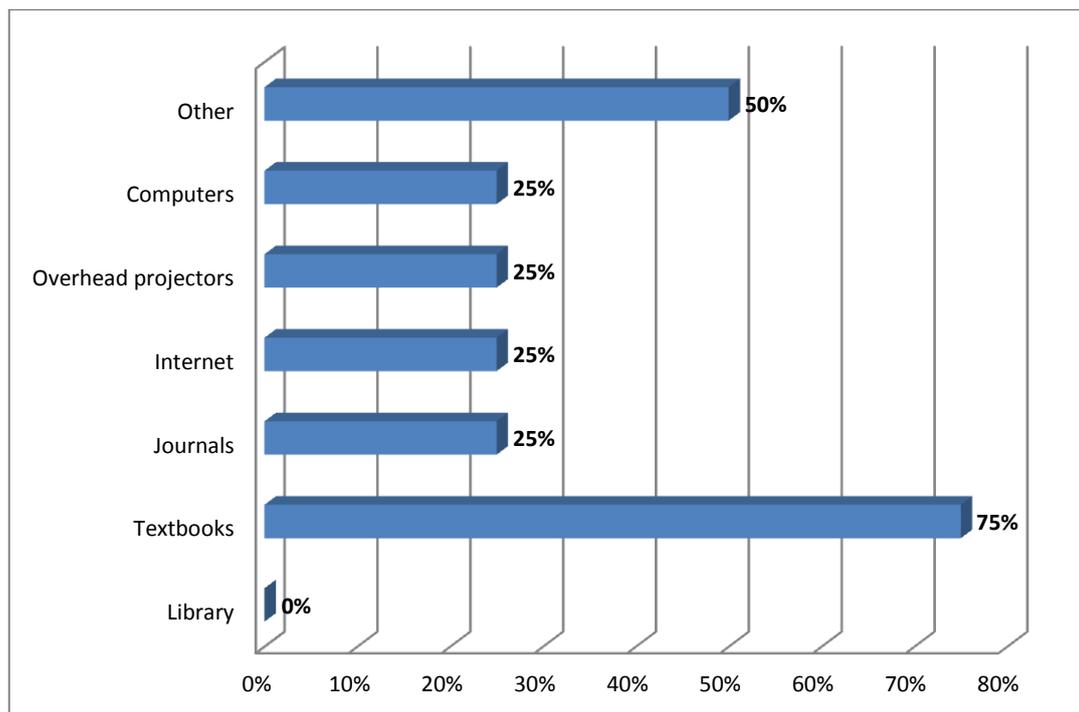


Figure 4.110 Responses of nurse educators on which material resources were not available (N=4)

Seventy five percent (n=3) of the nurse educators indicated materials that were not available as textbooks, 25% (n=1) indicated journals, 25% (n=1) indicated internet, 25% (n=1) indicated overhead projectors, 25% (n=1) indicated computers and 50% (n=2) indicated other resources. The majority, namely 75% of the nurse educators indicated that textbooks were not sufficient. Textbooks are important as they enhance skills for abstract conceptualisation (see section 2.2.5.3).

4.4.2.23 Indication of which human resources available

This sub-section addresses the human resources including nurse educators, librarians and counsellors available.

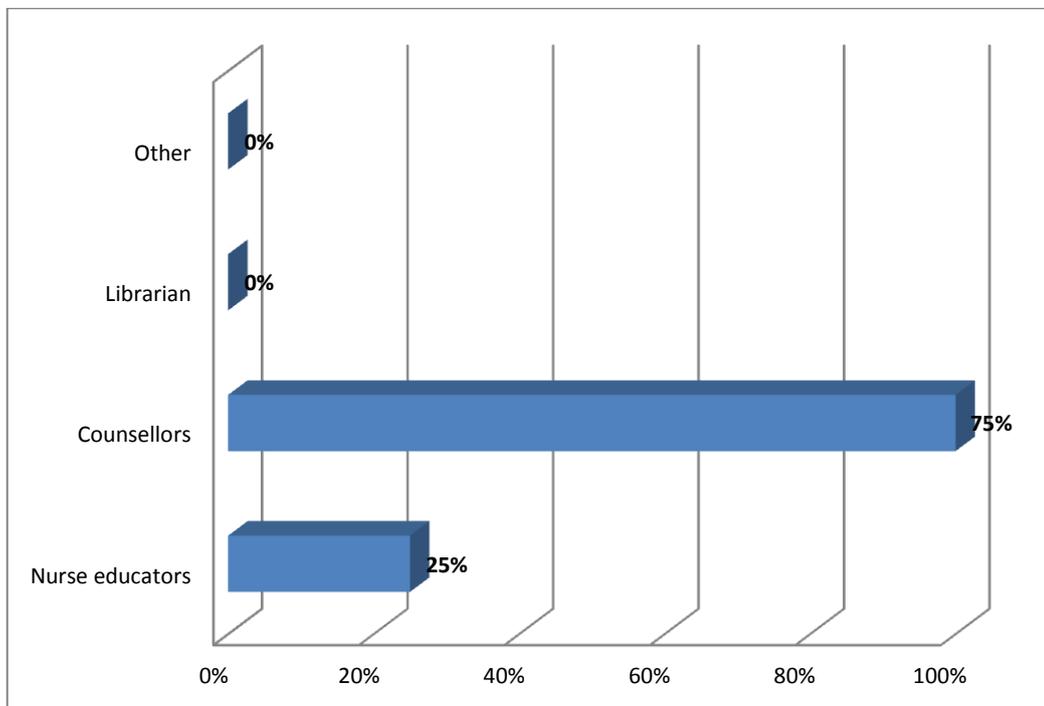


Figure 4.111 Responses of nurse educators on which human resources were not available (n=4)

Twenty five percent (n=1) of the nurse educators indicated human resources that were not available as nurse educators and 75% (n=3) indicated counselors as insufficient. The majority, namely 75% of the nurse educators indicated that counselors for student nurses were not sufficient.

4.4.3 Section C: Practica

The focus of this section is on the practice component of the four-year comprehensive programme in nursing.

4.4.3.1 Availability of the simulation laboratory in the nursing college

This sub-section addresses the availability of a simulation laboratory at the nursing college under study.

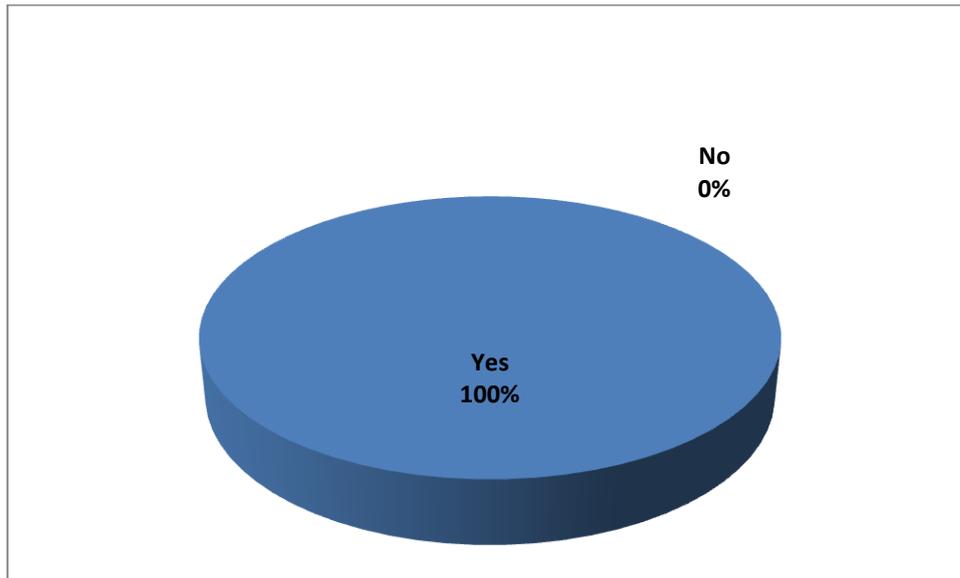


Figure 4.112 Responses of nurse educators on whether the simulation laboratory is available in the nursing college (N=9)

All 100% (n=9) the nurse educators indicated that the simulation laboratory was available in the nursing college. The findings are consistent with the majority, namely 97%, 93% and 82% of second, third and fourth-year student nurses respectively who indicated that simulation laboratory was available (see section 4.3.6.1.2).

4.4.3.2 Location of the simulation laboratory

In this sub-section, the respondents were asked where the simulation laboratory was situated.

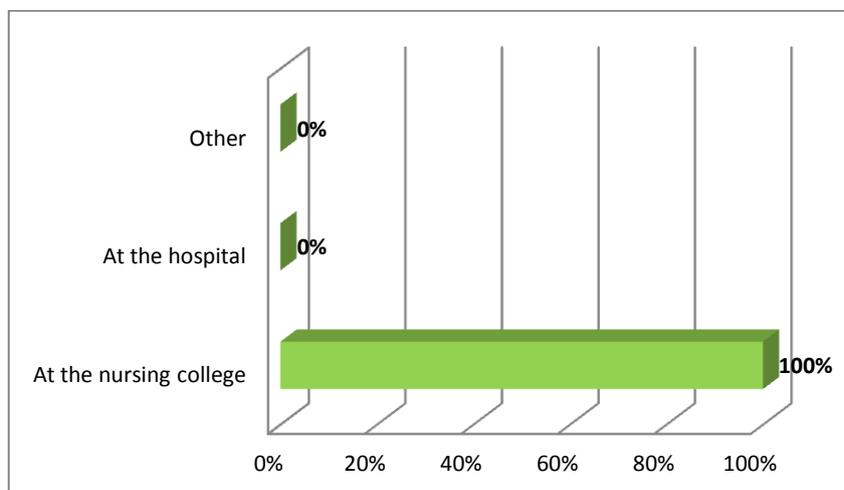


Figure 4.113 Responses of the nurse educators on the location of the simulation laboratory (N=9)

All 100% (n=9) of the nurse educators indicated that the simulation laboratory is situated at the nursing college. The findings are consistent with the majority, namely 78%, 93% and 94% of second, third and fourth-year student nurses respectively who indicated that simulation laboratory is situated at the nursing college (see section 4.3.6.1.3).

The development of a simulation laboratory in a nursing college is a challenge. It needs strategic and financial planning. According to Gantt (2010), the central focus of strategic planning is to develop congruence between the organisation's activities and the demands of the surrounding environment, while its primary aim is to bring the institution or nursing department into balance with the overall health services environment and to maintain that balance over time.

In a school of nursing, strategic planning is an imperative predicated on anticipated changes in the health care environment. It is also the case the environment external to the simulation laboratory drives strategic planning initiatives for this area to a large extent. The patient safety movement, the demand for increased nursing school enrollment and graduation rates, and an economic environment that threatens an organisation's ability to sustain a state-of-the-art lab are just a few of the factors that must be recognised and captured in planning.

4.4.3.3 Availability of access to the simulation laboratory by student nurses

In this sub-section, the respondents were required to indicate their availability of providing access to the laboratory for the student nurses.

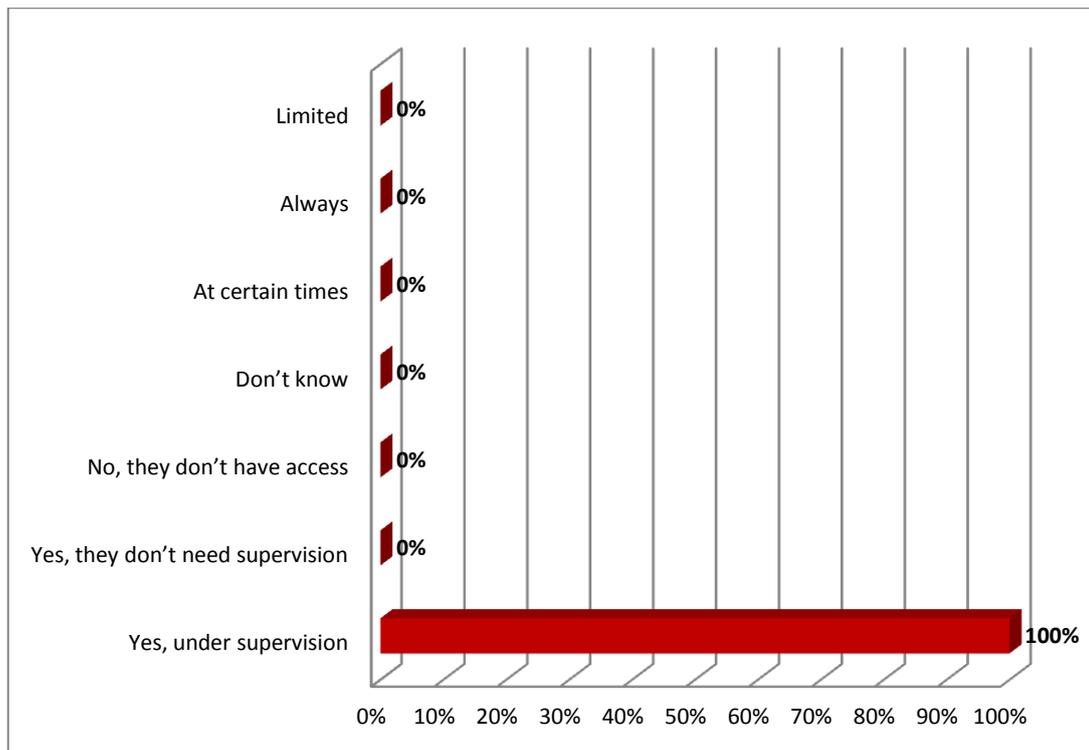


Figure 4.114 Responses of nurse educators on the availability of access to the simulation laboratory (N=9)

All 100% (n=9) of the nurse educators indicated that student nurses have access to the simulation laboratory under supervision. The findings are consistent with section 4.3.6.1.4 wherein the majority, namely 72% and 57% of second and third-year student nurses and many, namely 45% of the fourth-year student nurses indicated that they have access to the simulation laboratory under supervision.

In a study conducted by Kurtz, Lemley and Alverson (2010:38), it was found that laboratory simulations foster clinical competence in nursing students. A study conducted by Jeffries, Rew, and Cramer (2002:14) compared traditional teaching methods to interactive, student-centered strategies to teach students basic nursing skills in a simulation laboratory. The authors concluded that there were no differences in cognition or skill performance ability between the groups, but students in the interactive groups were more satisfied with their learning. The authors suggested that increased satisfaction leads to greater student participation in learning, thereby improving academic and clinical performance.

4.4.3.4 Person(s) who accompany student nurses to the simulation laboratory

In this sub-section, the respondents had to indicate who accompanies the student nurses to the simulation laboratory.

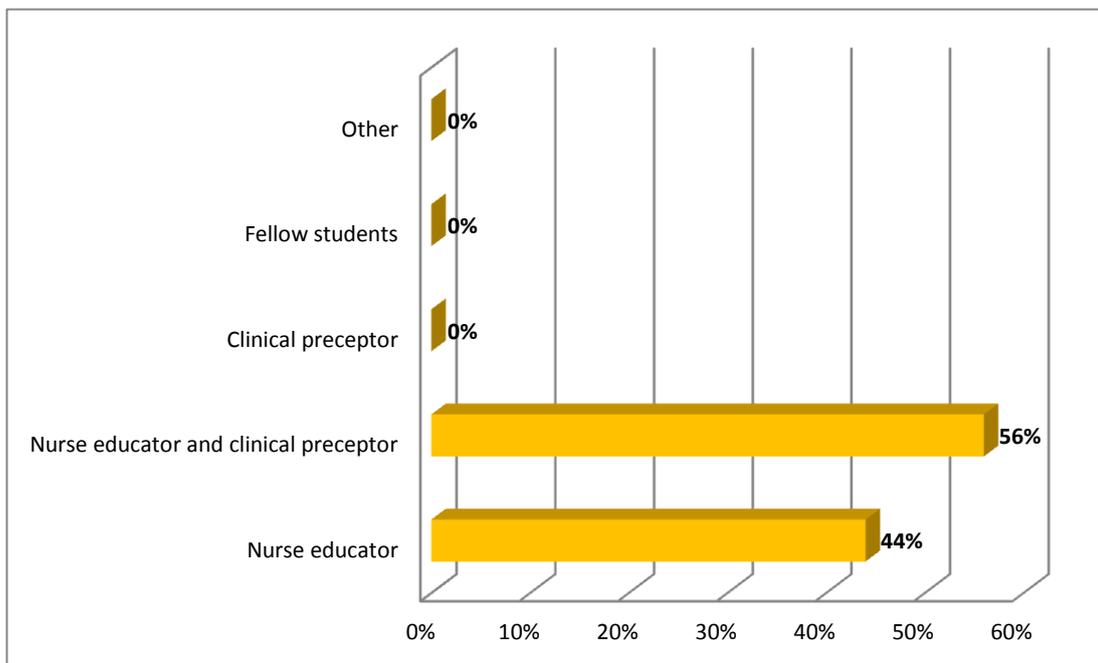


Figure 4.115 Responses of nurse educators on person(s) who accompany student nurses to the simulation laboratory (N=9)

Forty four percent (n=4) of the nurse educators indicated that the nurse educators were responsible for accompaniment of student nurses in the simulation laboratory and 56% (n=5) indicated nurse educators and clinical preceptors. The majority (56%) indicated nurse educators and clinical preceptors as persons who accompany student nurses to the simulation laboratory. The findings are not consistent with section 4.3.6.1.5 wherein the majority, namely 73% and 63% of third and fourth-year student nurses indicated nurse educators as persons accompanying them to the simulation laboratory. Many, namely 31% of the second-year students indicated that they accompanied by both nurse educators and clinical preceptor.

4.4.3.5 Frequency of attendance of the simulation laboratory by student nurses

In this sub-section, the frequency of attendance to the simulation laboratory by nurses was investigated.

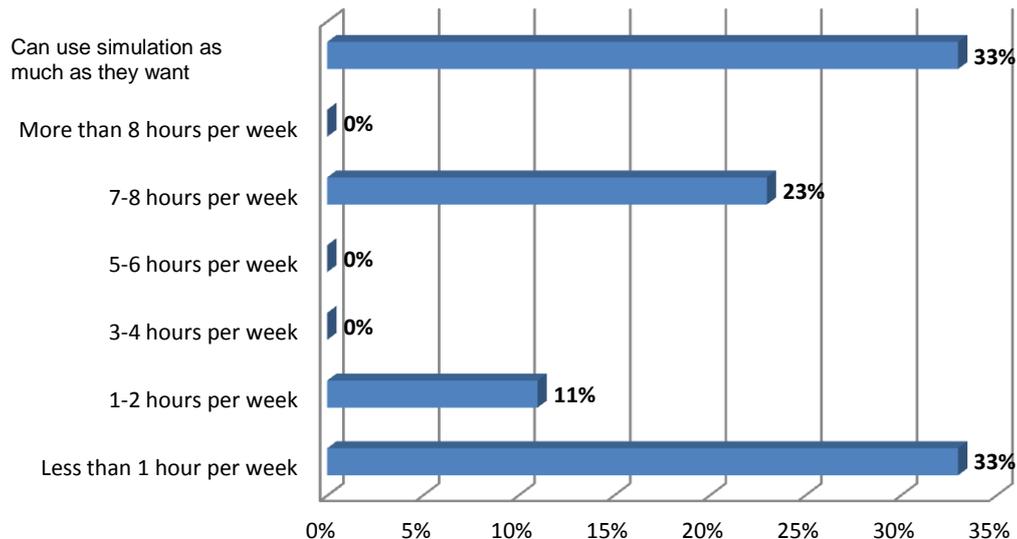


Figure 4.116 Responses of nurse educators on frequency of attendance of the simulation laboratory by student nurses (N=9)

Thirty-three percent (n=3) of the nurse educators indicated frequency of attendance of the simulation laboratory as less than one hour per week, 11% (n=1) indicated one to two hours per week, 23% (n=2) indicated seven to eight hours per week and 33% (n=3) indicated that they can use the simulation laboratory as much as they want. Many, namely (33%) of the nurse educators indicated that the students can attend the simulation laboratory less than one hour per week or as much as they want. The findings are consistent with the responses of student nurses in section 4.3.6.1.6 wherein the majority, namely 52%, 88% and 57% of second, third and fourth-year student nurses respectively indicated that they use the simulation laboratory less than one hour per week but inconsistent with the fact that student nurses can use the simulation laboratory as much as they want. Only (10%), (3%) of second, third and fourth-year student nurses indicated that they can use the simulation laboratory as much as they want.

Rauen (2004:46) views simulated experiences in the laboratory as an essential component of the nursing practice experience and says that the minimum requirements is that nurses should spend at least four hours per week in the safe environment where no harm can be done to a real patient. The author states that “requiring the nurses to assemble the equipment while caring for a simulated patient in a safe and controlled environment was a great learning experience because by using simulation, nurses are able to think through their actions and the events without jeopardising care of an actual patient”. In the study conducted by Rauen (2004:51) it was found that nurses indicated that they liked being able to "pause action" and seek assistance or clarification from their peers or the instructors at any point. They also stated that they were more eager to learn because in a simulated environment they avoided "looking dumb," a situation that reduced their intimidation. The sessions were originally scheduled to take 4 hours but invariably ran longer because the nurses requested to try or see a few more things.

4.4.3.6 Availability of opportunities to practice the relevant skills by student nurses during simulation sessions

In this sub-section, the respondents were required whether or not students were given opportunities to practice skills during simulation sessions in the nursing laboratory.

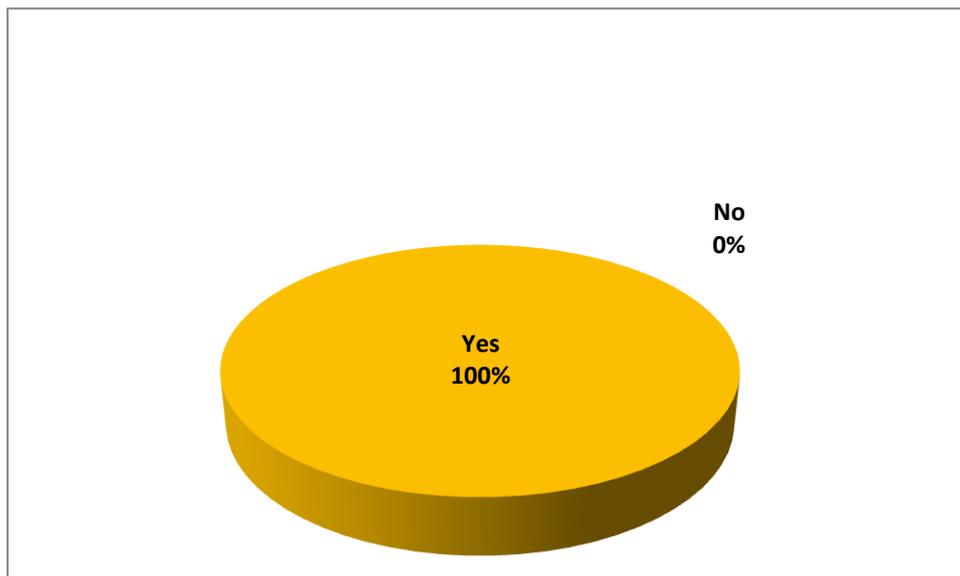


Figure 4.117 Responses of nurse educators on whether there are opportunities given to student nurses to practice skills during simulation sessions (N=9)

All 100% (n=9) of the nurse educators indicated that student nurses were given opportunities to practice skills as compared to the majority, namely 81%, 70% and 68% of second, third and fourth-year student nurses respectively (see section 4.3.6.1.9).

In a study conducted by Kiegaldie and White (2006) it was found that the active use of and practicing of procedures on simulated virtual “patients” provided students the opportunity to manage complex clinical situations which they may not otherwise experience in their clinical practice”. The researchers found that this enabled students to interact with colleagues and leading nurse practitioners who were not formally associated with the curriculum, via online discussion groups. Learning contributed to the students becoming familiar with the workplace environment, developing of clinical problem-solving abilities including an understanding of assessment concepts and the significance of assessment findings, developing diagnostic interpretation skills, gaining confidence in decision making, identifying appropriate therapeutic interventions and participating in collaborative learning.

4.4.3.7 Availability of instrument or written procedure to follow by student nurses during simulation sessions

In this sub-section, the respondents had to indicate whether there was an instrument or written procedure to follow during the simulation sessions.

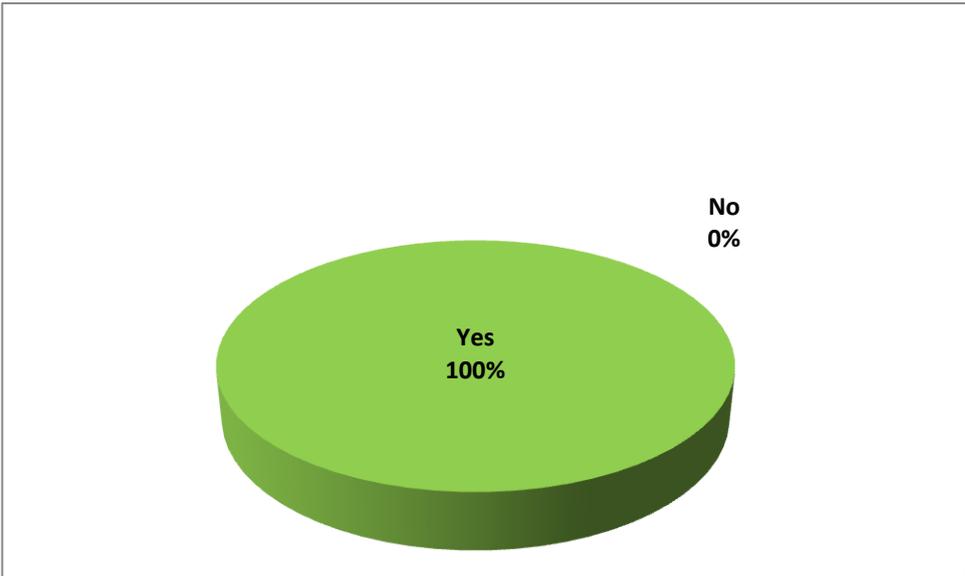


Figure 4.118 Responses of nurse educators on whether there is an instrument or written procedure to follow by student nurses during simulation sessions (N=9)

All the respondents (100%; N=9) indicated that the student nurses were given instruments or written procedures to follow during the simulation activities in the laboratory as compared to the majority, namely 81%, 73% and 63% of the second, third and fourth-year student nurses respectively (see section 4.3.6.1.10).

Day (2007:504) states that she has two serious concerns about the use of simulated experiences. First, unless carefully constructed guidelines exist in specific contexts, the introduction of technology into the teaching/learning relationship nurses can lose the real meaning of the experience. Second, teaching and nursing are relational practices in which meaning is created in the interactions that take place between and among participants. This understanding of meaning points to the importance of the participants and what is at stake for them in each situation.

4.4.3.8 *Demonstration of skills before giving the student nurses opportunity to practice the skill*

In this sub-section, the nurse educators were asked to indicate whether the skills were demonstrated prior to practicing the skill by the student nurses.

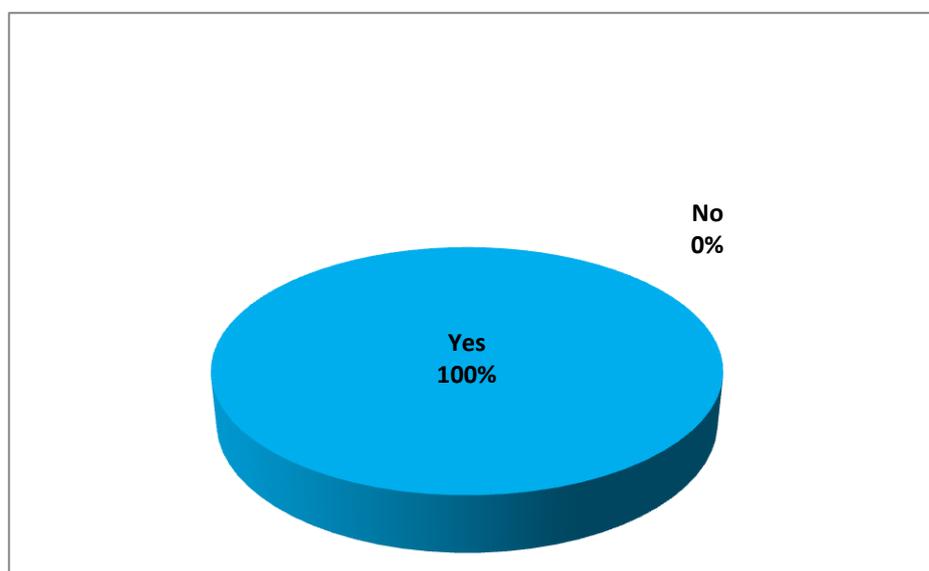


Figure 4.119 Responses of nurse educators on whether skills are demonstrated before student nurses can practice (N=9)

All the nurse educators (100%; N=9) indicated that skills were demonstrated to student nurses before they can practice as compared to the majority, namely 94% 83% and 80% of second, third and fourth-year student nurses respectively (see section 4.3.6.1.11).

Hale and Ahlschlager (2011:16) are of opinion that student nurses be given a full set of guidelines on procedures before they enter the simulation laboratory and only when the skill has been demonstrated can student be given the opportunity to practice the skill.

4.4.3.9 Availability of feedback to student nurses on their performance after the simulation session

In this sub-section the respondents were asked whether the nurse educators provided feedback after the performance of simulated activities by the students.

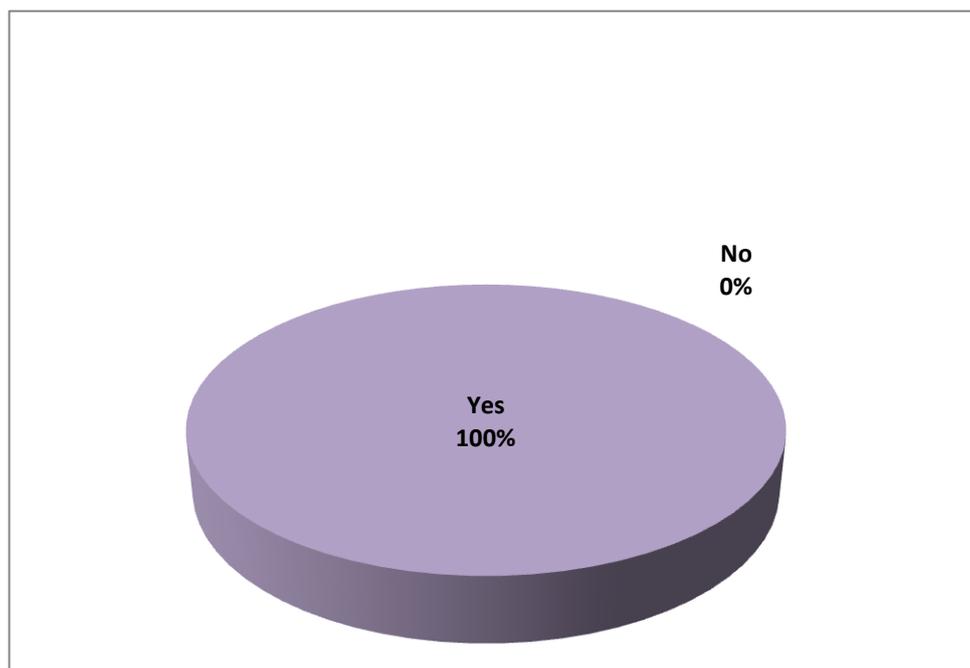


Figure 4.120 Responses of nurse educators on whether student nurses are provided with feedback on their performance after simulation session (N=9)

All 100% (n=9) of the nurse educators indicated that student nurses were provided with feedback on their performance after simulation session as compared to the majority, namely 75%, 67% of the second, third and fourth-year student nurses respectively.

In the simulation laboratory, nursing students have the opportunity to work with patients who might be experiencing chest pain, head injury or need an intravenous drip. Many of the manikins today are patients who can talk, breath, excrete, have a heart beat and act out a number of real life situations amongst others the patient might die. This simulated opportunity provides immediate feedback to the student (Chung 2011; Kunz 2009:4).

4.4.3.10 Opinions of nurse educators on whether simulation contributed to the application of skills in the clinical practice

In this sub-section deals with the question to the nurse educators whether simulation contributed to the application of skills in the clinical practice.

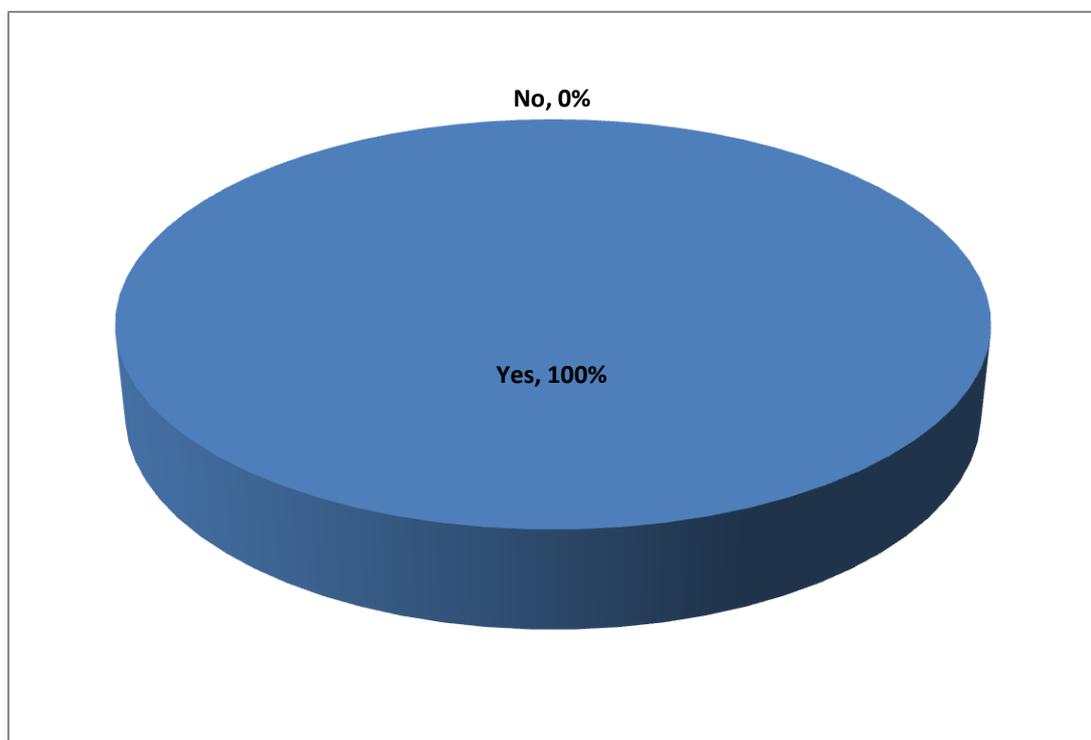


Figure 4.121 Opinions of nurse educators on whether simulation contributed to the application of skills in the clinical practice (N=9)

All the nurse educators (100%; N=9) indicated that simulation contributed to the application of skills in the clinical practice as compared to the majority, namely 83%, 50% and 80% of the second, third and fourth-year student nurses respectively (see section 4.3.6.1.15).

Decker, Sportsman Billings and Puetz (2008:74) state that although simulation provides educators with new educational opportunities, the potential use of simulation in competency testing cannot be achieved until educators and researchers acquire the knowledge and skills needed to use this education strategy, develop realistic case scenarios, and design and validate standardised and reliable testing methods. Numerous pressures exist for clinical settings to document the competencies of their employees. Simulation could be used in the practice environment to promote and validate the clinical judgment and competency of nurses (Jose & Stoner 2010:89; Kubat, Jaso & Stoner 2007).

4.4.3.11 Opinions of nurse educators on whether there are any differences in terms of procedural ways of doing the skill between the simulated skills and the actual clinical procedures in the wards

In this sub-section the respondents were asked whether there were any differences in terms of procedural ways of doing the skill between the simulated skills and the actual clinical procedures in the wards

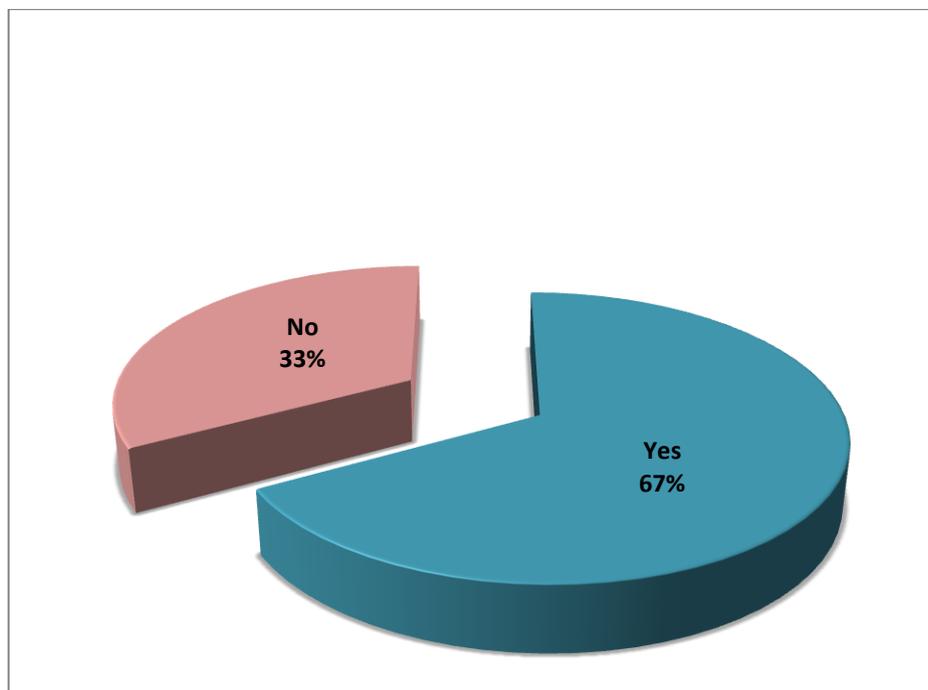


Figure 4.122 Opinions of nurse educators on whether there are any differences in terms of procedural ways of doing the skill between the simulated skills and the actual clinical procedures in the wards (N=9)

Sixty seven percent (n=6) of nurse educators indicated that there were differences in terms of procedural ways of doing the skill between the simulated skills and the actual clinical procedures in the wards whilst 33% (n=3) indicated that there were no differences. The findings are not consistent with many 48% of student nurses who indicated that there were differences as compared to the majority 52% who indicated that there were no differences (see section 4.3.5.2.6).

Li (2007:3) states that there are limitations to simulated experiences as communication skills with real patients the forming of relationships with patients and the “human touch” are often lost.

4.4.3.12 Differences between the simulated skills and the actual clinical procedures in the wards in terms of procedural ways of doing the skill

Table 4.9 Responses of nurse educators on the differences in terms of procedural ways of doing the skill between simulated skills and the actual clinical procedures in the wards

Differences in terms of procedural ways of doing the skill between simulated skills and the actual clinical procedures in the wards	Frequency	Percentages
Lack of practice, procedures are not followed due to lack of resources.(1	33%
Equipments used for simulation in the College are no longer used in the clinical area.	1	34%
Affective domain cannot be measured during simulation	1	33%
Total	N=3	100%

Table 4.3 reflects the responses of nurse educators on the differences in terms of procedural ways of doing the skill between the simulated skills and the actual clinical procedures in the wards. Thirty three percent (n=3) indicated lack of practice, procedures are not followed due to lack of resources, 33% (n=3) indicated that equipments used for simulation in the college are no longer used in the clinical area and 33% (n=3) indicated that affective domain cannot be measured during simulation These findings are consistent with the responses of student nurses as discussed in section 4.3.5.2.7.

4.4.3.13 Indication of whether student nurses have to pass a proficiency test before placement in the clinical setting

This sub-section deals with the question whether student nurses passed a proficiency test prior to their placement in the clinical setting.

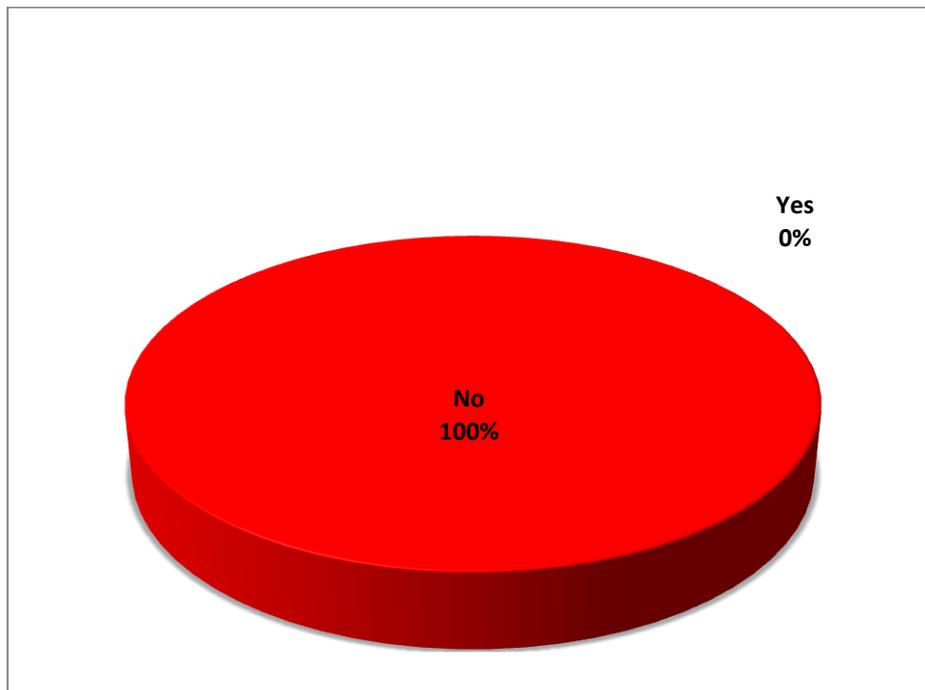


Figure 4.123 Responses of nurse educators on whether student nurses have to pass proficiency test before clinical placement (N=9)

All the nurse educators (100%; N=9) indicated that student nurses had to pass the proficiency test prior to clinical placement. The findings were consistent with majority, namely 75% of student nurses as reflected in section 4.3.3.2.1.

4.4.3.14 Indication of whether student nurses are orientated to the clinical practice prior to placement in the wards

In this subsection, the respondents had to indicate whether the students were orientated prior to their placement in clinical practice.

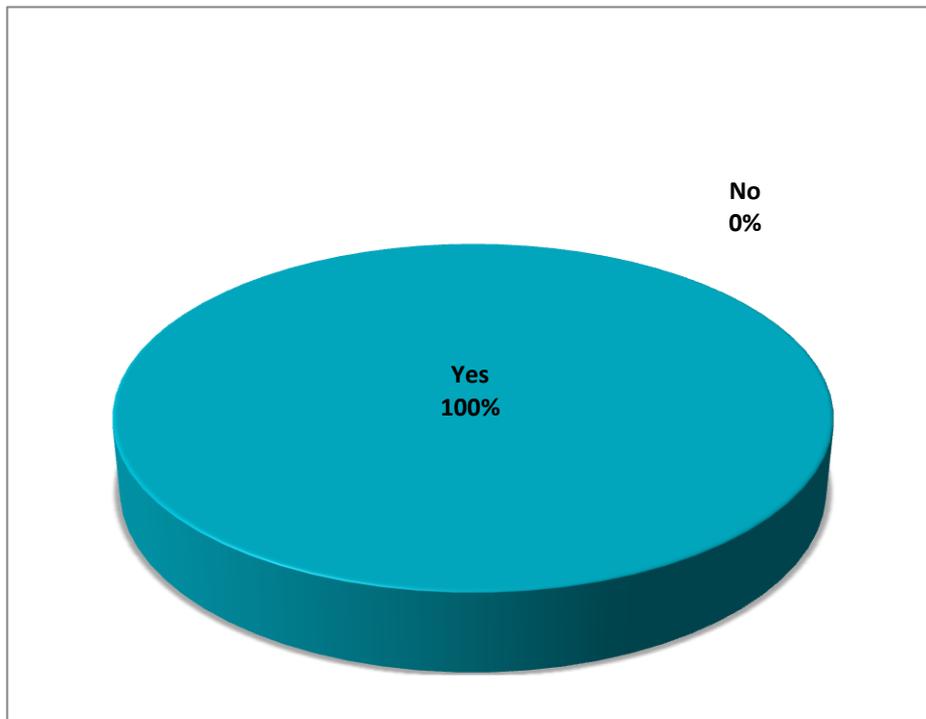


Figure 4.124 Responses of nurse educators on whether student nurses are orientated to the clinical practice prior to placement in the wards (N=9)

All the nurse educators (100%; N=9) indicated that student nurses were orientated to the clinical practice prior to placement in the wards as compared to the majority, namely 83% of the student nurses (see section 4.3.3.2.3).

Lewis (2010) is of opinion that clinical orientation is one of the most important aspects of a nursing student's education. Clinical orientation begins as soon as a nursing student fulfills a nursing program's prerequisite courses. During clinical orientation, nursing students work in a healthcare facility that will allow them to expand their knowledge as future nurses and provide experiences for professional growth. Most importantly, it is here that nursing students learn how to deliver quality care to patients with the help of fellow nursing students, clinical instructors, nursing staff and other healthcare providers.

4.4.3.15 Person(s) responsible for the orientation

In this sub-section, the respondents had to indicate who the person or persons were for the orientation of the student nurses. More than one response could be given to this question.

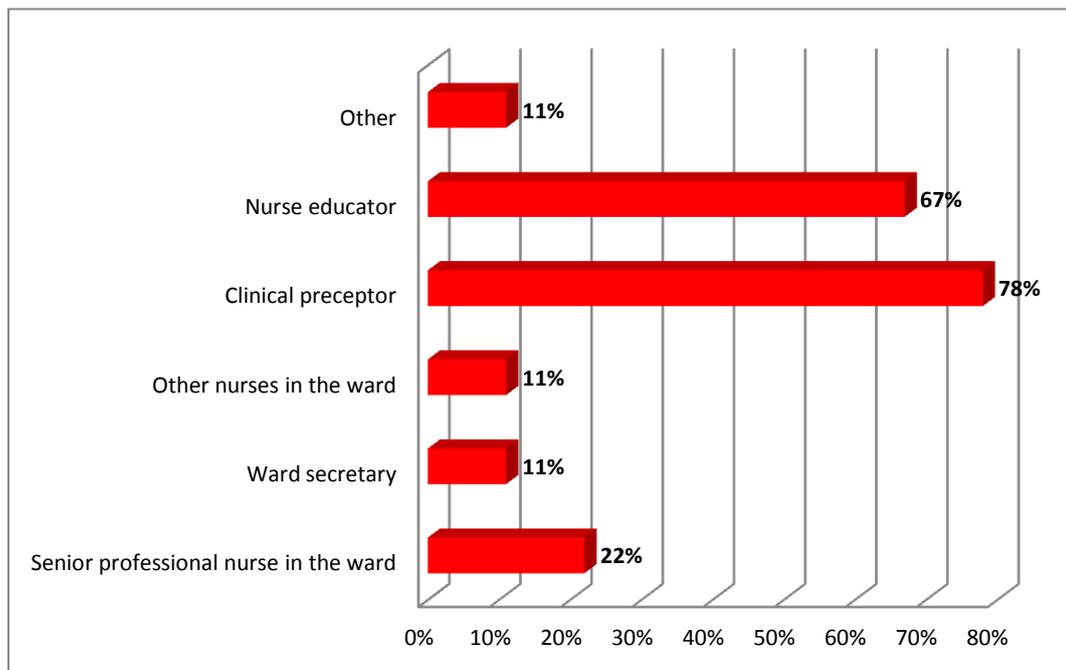


Figure 4.125 Responses of nurse educators on person(s) responsible for orientation (N=9)

Twenty two percent (n=2) of the nurse educators indicated the senior professional nurse in the wards as persons responsible for orientation, 11% (n=1) indicated the ward secretary, 11% (n=1) indicated other nurses in the ward, 78% (n=7) indicated the clinical preceptor, 67% (n=6) indicated nurse educators and 11% (n=1) indicated other individuals. The majority, namely 78% and 67% of nurse educators indicated that clinical preceptors and nurse educators respectively were responsible for orientation. The responses of student nurses differ significantly from the responses of the nurse educators as many, namely 48% of student nurses indicated that the orientation was done by the senior professional nurse in the unit, 29% indicated nurse educators and 10% clinical preceptors as persons responsible for orientation as reflected in section 4.3.3.2.4.

4.4.3.16 Aspects included in the orientation

In this sub-section, respondents were required to indicate what content the orientation package contained. More than one response could be given to this question.

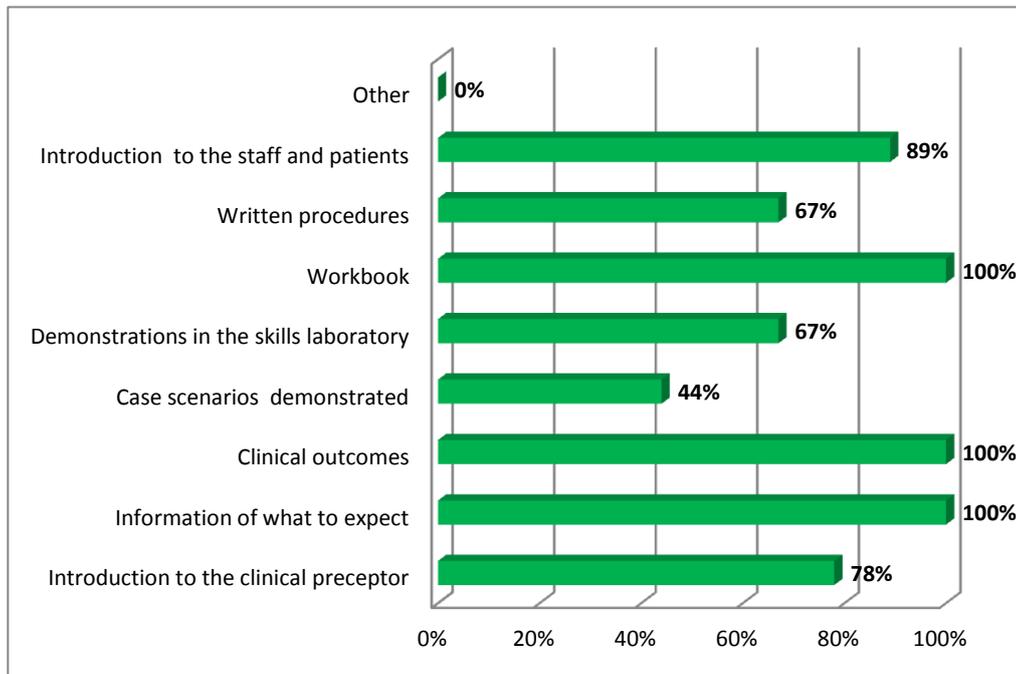


Figure 4.126 Responses of nurse educators on aspects included in the orientation (N=9)

Seventy eight percent (n=7) of nurse educators indicated introduction to the clinical preceptor as aspects included in the orientation, 100% (n=9) indicated information on what to expect, 100% (n=9) indicated information on clinical outcomes, 44% (n=4) indicated that case scenarios are demonstrated, 67% (n=6) indicated demonstrations in the skills laboratory, 100% (n=9) information on workbooks, 67% (n=6) indicated written procedures and 89% (n=8) indicated introduction to the staff and patients. The majority, namely 100% of nurse educators indicated information on what to expect, information on clinical outcomes, and information on workbooks. The findings are consistent with the responses of the student nurses as reflected in section 4.3.3.2.5.

4.4.3.17 Indication on whether student nurses are provided with clinical outcomes for the relevant discipline

In this sub-section, the respondents were asked to indicate whether student nurses were provided clinical outcomes for the relevant discipline in which they were placed.

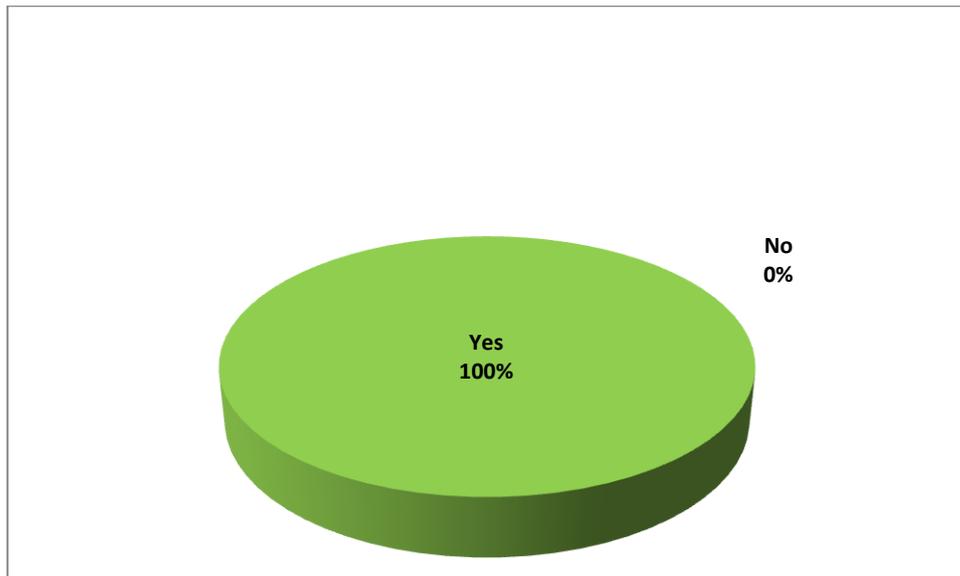


Figure 4.127 Responses of the nurse educators on whether student nurses are provided with the clinical outcomes for the relevant discipline (N=9)

One hundred percent (n=9) of the nurse educators indicated that student nurses were provided with the clinical outcomes for the relevant discipline. The findings are consistent with the responses student nurses as reflected in section 4.3.4.2.1. Tornøe (2007:99) reveals that supervisors in the clinical area find it difficult to supervise student nurses who are unaware of the expected learning outcomes.

4.4.3.18 *Indication of whether the guidelines in the clinical setting are of what is expected of the level of students*

In this sub-section, the respondents were asked if the guidelines for the clinical setting were set to inform students of what was expected of them.

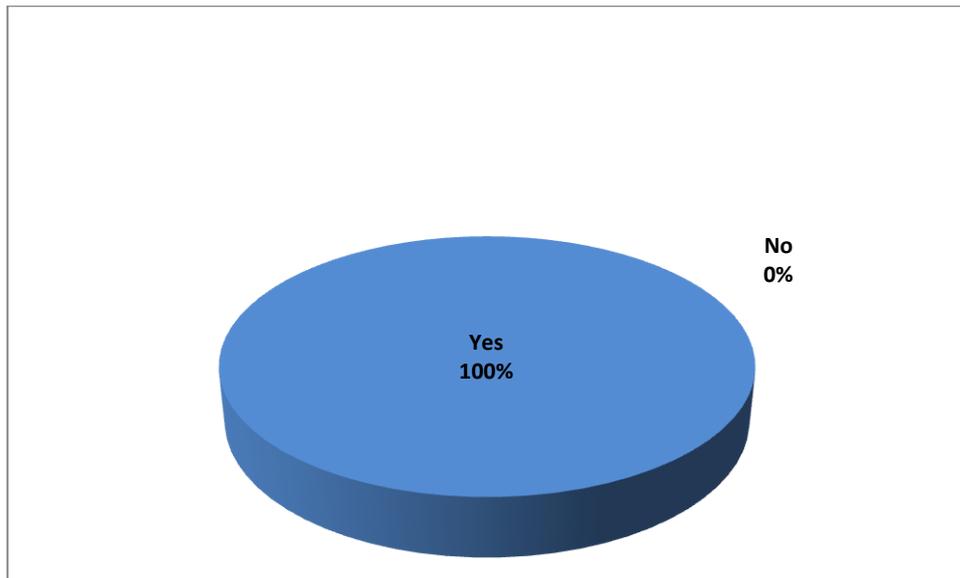


Figure 4.128 Responses of nurse educators on whether the guidelines in the clinical setting are of what is expected of student nurses (N=9)

All the nurses educators (100%; N=9) indicated that the guidelines in the clinical setting were of what was expected from student nurses. The findings are consistent with the majority, namely 87% of student nurses as reflected in section 4.3.4.2.2.

Burns, Beuchesne, Ryan-Krause and Sawin (2006:172) state that familiarity with their characteristics of adult learners is critical. Many students come to the clinical setting with a wealth of experiences whereas others may come with expectations. Regardless of the students' background, they are active adult learners who need direction and goal setting. Meeting with their expectations are not always easy and therefore more detailed role expectations as well as pressures upon role performance is important.

4.4.3.19 Availability of a list of planned activities given to student nurses on their arrival in the clinical setting

In this section, the respondents were asked if there was a list provided to the student which indicated planned activities which they can expect since the day of their arrival in the ward.

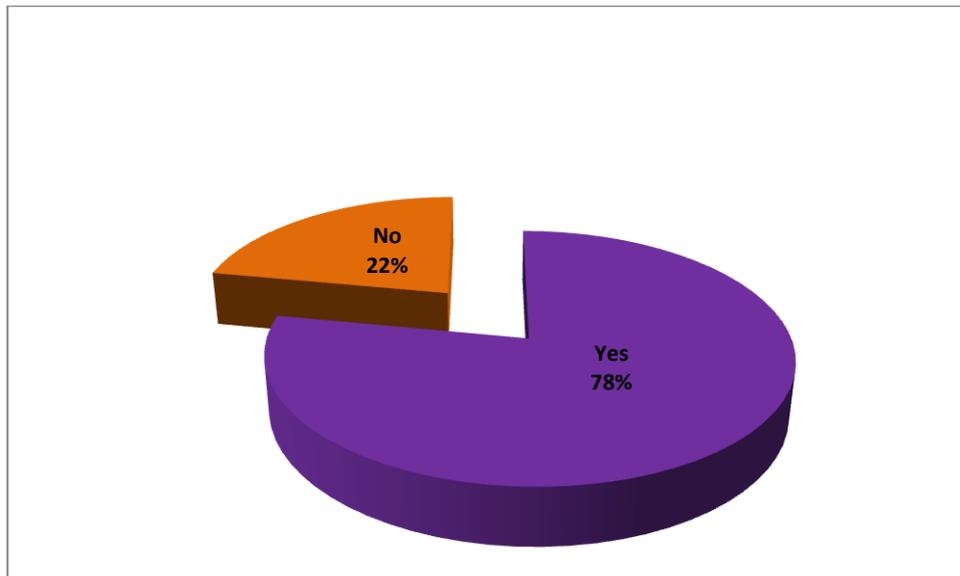


Figure 4.129 Responses of nurse educators on whether there is a planned list of activities for student nurses on arrival in the clinical setting (N=9)

Seventy eight percent (n=7) of the nurse educators indicated that a planned list of activities was available for student nurses on arrival in the clinical setting whilst 22% (n=2) of nurse educators indicated that the planned list was not available. These findings are consistent with the majority, namely 58% of student nurses who indicated that a planned list of activities was available. (see section 4.3.4.2.3).

Preparation and planning has been noted by several authors to be key components to a successful experience for all students (Burns et al 2006:172; Fay, Feldt, Greenberry, Vezina, Flaherty, Ryan & Fulmer 2001:71; Smith & Irby 1997:32; Usatine, Nguyen, Randall & Irby 1997:766). The goal is to provide settings and experiences in which learning can occur with minimal disruption. It is important to discuss the goals with the students in the beginning of the activities.

4.4.3.20 List of planned activities for students to learn

In this subsection, the list of planned activities was provided from which the respondents had to choose. More than one response could be given to this question.

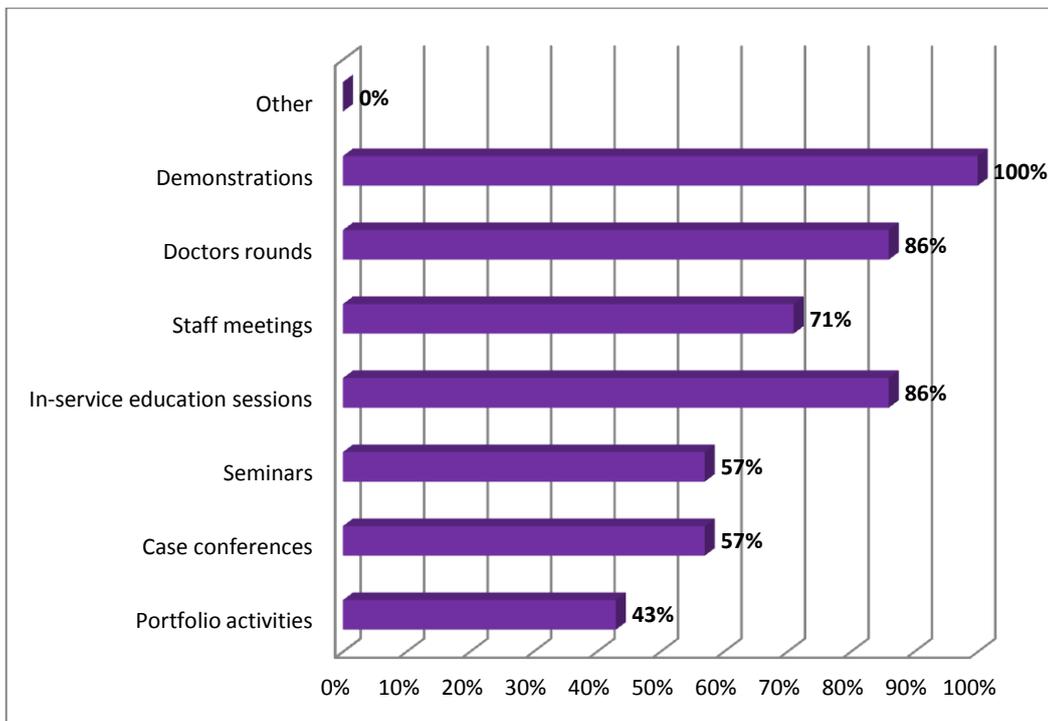


Figure 4.130 Responses of nurse educators on the list of planned activities (n=7)

Forty three percent (n=3) of the nurse educators indicated the planned list of activities included portfolio activities, 57% (n=4) indicated case conferences, 57% (n=4) indicated seminars, 86% (n=6) indicated in-service education sessions, 71% (n=5) indicated staff meetings, 86% (n=6) indicated Doctors rounds and 100% (n=7) indicated demonstrations. The majority (100%) and (86%) indicated demonstration followed by doctors rounds and in-service education sessions. The findings are consistent with the responses of the student nurses wherein 28%, 27% and 19% of student nurses indicated demonstration followed by Doctors rounds and in-service education sessions respectively (see section 4.3.4.2.4).

4.4.3.21 Indication of whether students are supervised during their clinical practice

In this sub-section, respondents were asked to indicate whether student nurses were supervised when allocated in the clinical area.

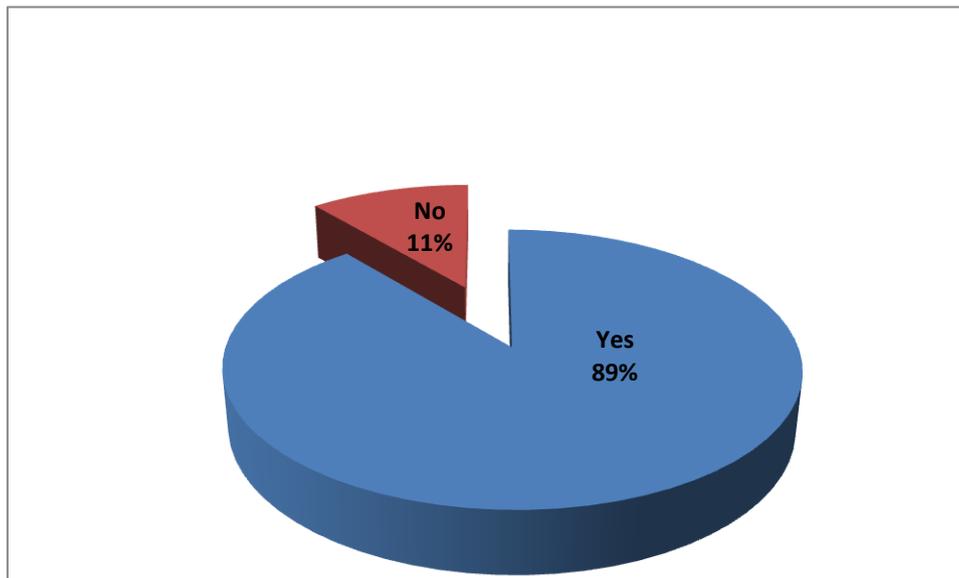


Figure 4.131 Responses of nurse educators on whether student nurses are supervised during clinical practice (N=9)

Eighty nine percent (n=8) of nurse educators indicated that student nurses were supervised during clinical practice whilst 11% (n=1) of the nurse educators indicated that student nurses were not supervised. The findings are consistent with the responses of student nurses wherein the majority, namely 90% indicated that they were supervised. (see section 4.3.4.2.5).

Carlson et al (2003:30) point out that in their study they found that the clinical learning environment creates many opportunities for student learning and the development of critical competencies in the nursing profession but the guidance and support by nursing personnel in the clinical learning environment was inadequate. The aim of this study was to reflect the importance of effective accompaniment by tutors/mentors, personnel in the clinical environment and any other person involved in the education of the first year nursing student, to prepare and enable him/her to become a knowledgeable, safe, competent nursing practitioner.

4.4.3.22 Person(s) responsible for supervision (clinical accompaniment)

In this sub-section, the respondents had to indicate who the person or persons were that undertook the clinical accompaniment. More than one response could be given to this question.

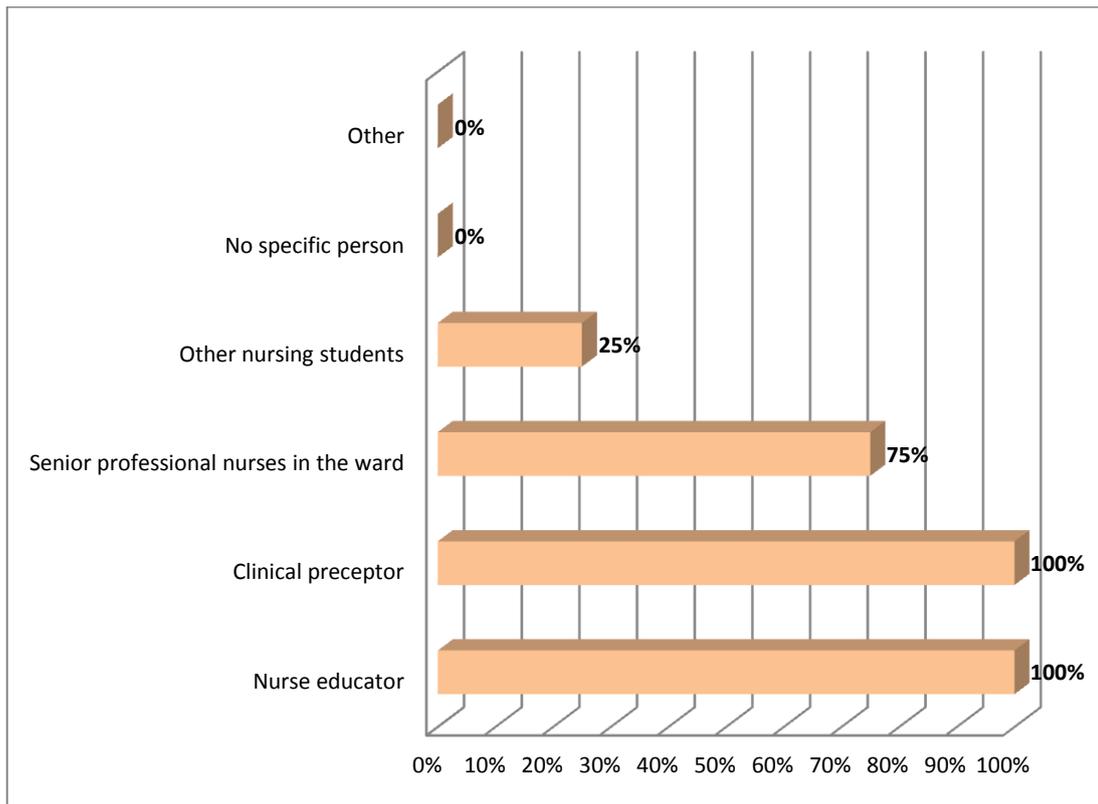


Figure 4.132 Responses of nurse educators on person(s) responsible for supervision (clinical accompaniment) (n=8)

One hundred percent (n=8) of the nurse educators indicated the nurse educator as person responsible for clinical accompaniment, 100% (n=8) indicated the clinical preceptor, 75% (n=6) indicated senior professional nurses in the ward and 25% (n=2) indicated other nursing students. Majority (100%) of nurse educators indicated nurse educator and clinical preceptor as persons responsible for clinical accompaniment of students. The findings are not consistent with many, namely 45% of student nurses who indicated senior professional nurses in the ward followed by 26% of student nurses who indicated clinical preceptor and 25% who indicated nurse educator as persons responsible for supervision. (see section 4.3.4.2.6).

4.4.3.23 Frequency of student nurses' supervision (clinical accompaniment) in the clinical setting

This sub-section deals with the supervision of students in the clinical practice. The nurse educators had to indicate the frequency of supervision. The respondents could select more than one response to this question.

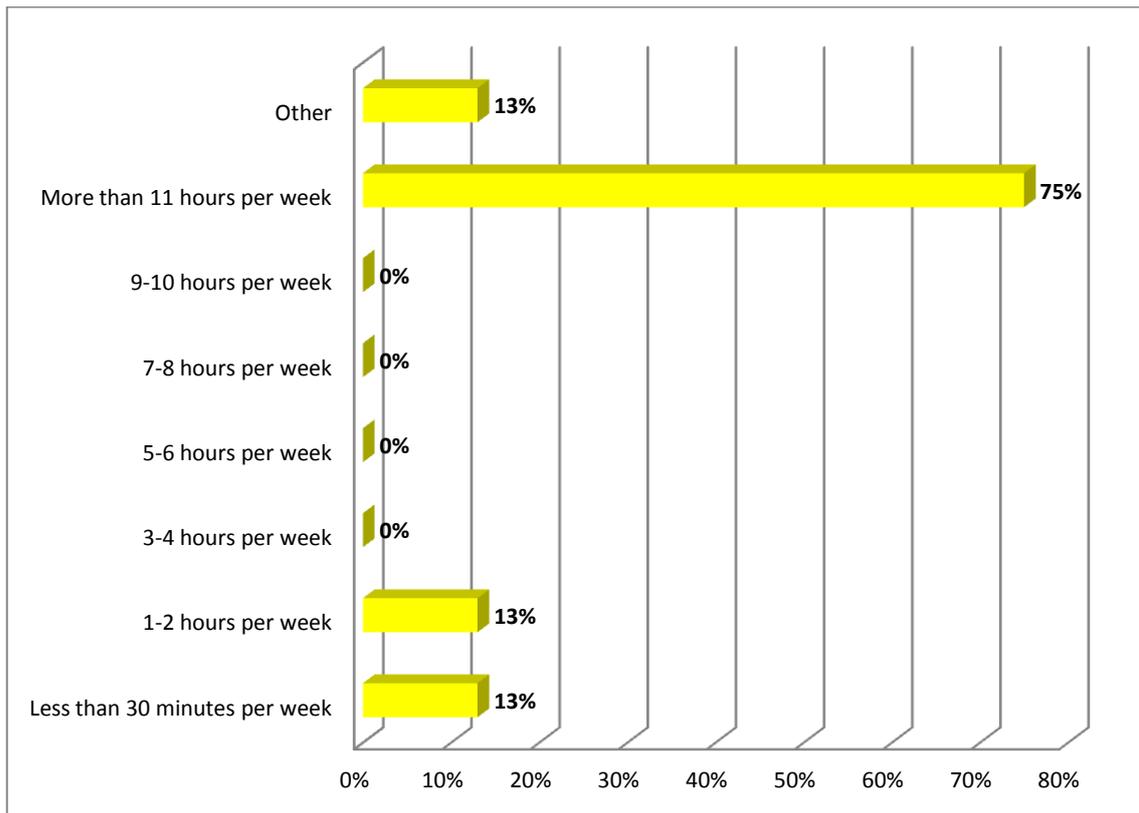


Figure 4.133 Responses of nurse educators on frequency of student nurses' supervision (clinical accompaniment) in the clinical setting (n=8)

Thirteen percent (n=1) of nurse educators indicated the frequency of student nurses' as less than 30 minutes per week, 13% (n=1) indicated one to two hours per week, 75% (n=6) indicated more than 11 hours per week and 13% (n=1) indicated other frequencies. The majority (75%) of nurse educators indicated that they supervise student nurses more than 11 hours per week. The findings differ from many, namely 26% of student nurses who indicated the frequency of supervision as between nine to ten hours per week (see section 4.3.4.2.7).

4.4.3.24 Teaching strategies used by accompanist during clinical accompaniment

This sub-section deals with the teaching strategies used by the accompanist. The respondents could select more than one response.

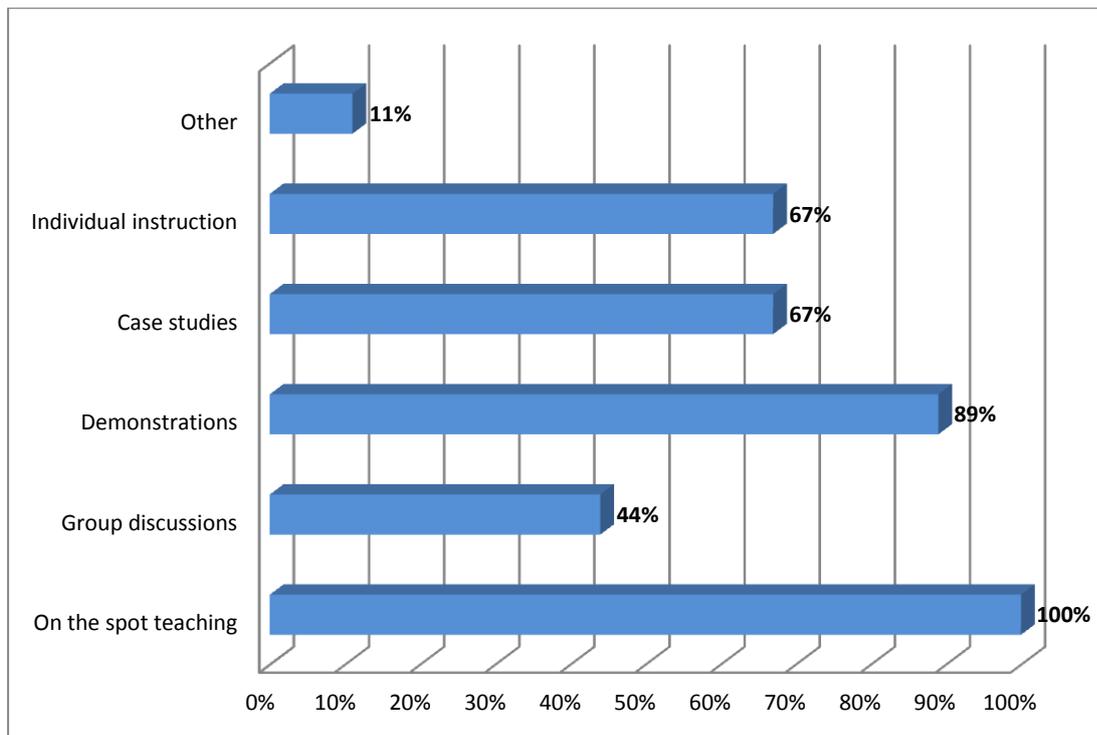


Figure 4.134 Responses of nurse educators on teaching strategies used by the accompanist during clinical accompaniment (N=9)

All the nurse educators (100%; N=9) indicated on-the-spot teaching as the strategy most used by the clinical accompanist. In addition, 44% (n=4) indicated group discussions, 89% (n=8) indicated demonstrations, 67% (n=6) indicated case studies, 67% (n=6) indicated individual instruction and 11% (n=1) indicated other strategies. The majority 100% of nurse educators indicated on the spot teaching followed by 89% who indicated demonstration whereas 55% of student nurses indicated demonstration.

The findings are consistent with the study by Mochaki (2001:119) wherein it was revealed that teachable moment were mostly used by registered nurses in the wards. The author further revealed that in spite of the utilised teachable moments, student nurses was not given the opportunity to reflect on their practice (Mochaki 2001:119).

4.4.3.25 Encouragement of student nurses to provide the theoretical information e.g. anatomy, physiology during clinical accompaniment

This sub-section deals with how the students are encouraged to provide theoretical knowledge while they are placed in the clinical practice.

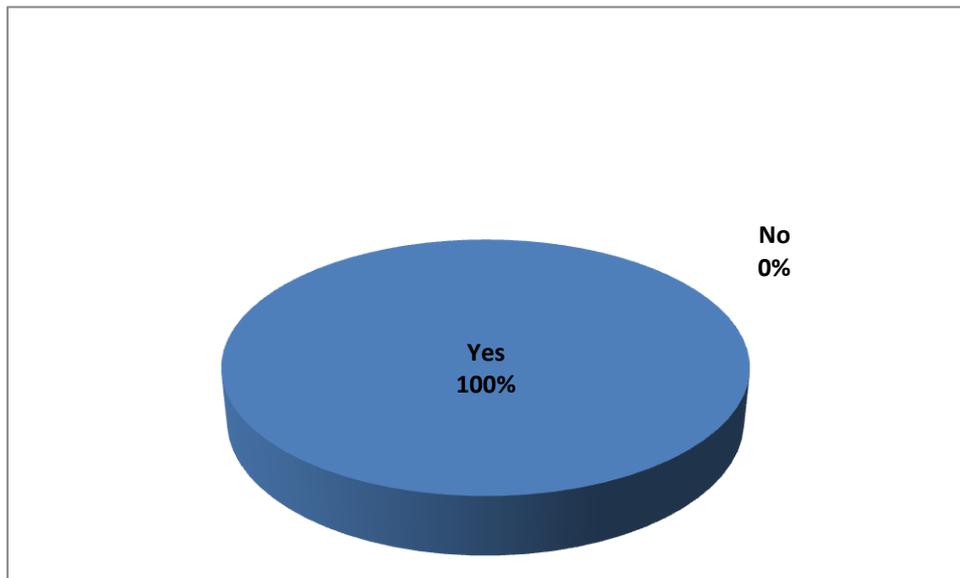


Figure 4.135 Responses of nurse educators on whether they encourage student nurses to provide theoretical information during clinical accompaniment (N=9)

All the nurse educators (100%; N=9) indicated that student nurses were encouraged to provide theoretical information during clinical accompaniment. The findings are consistent with 70% of student nurses (see section 4.3.5.2.1).

Burns et al (2006:176) provides suggestions of teaching strategies that could be used with much success in the clinical practice which could contribute to encourage the student to see the whole patient. These include, amongst others, case presentations (McGee & Irby 1997:s34), direct questioning (Smith & Irby 1997: 33), the “Think-aloud method” (Lee & Ryan-Wenger 1997:102) and coaching (McGee & Irby 1997:1997:s33).

4.4.3.26 Views on whether clinical accompaniment benefited the students

In this sub-section the nurse educators were asked to indicate whether they thought that clinical placement benefitted the students.

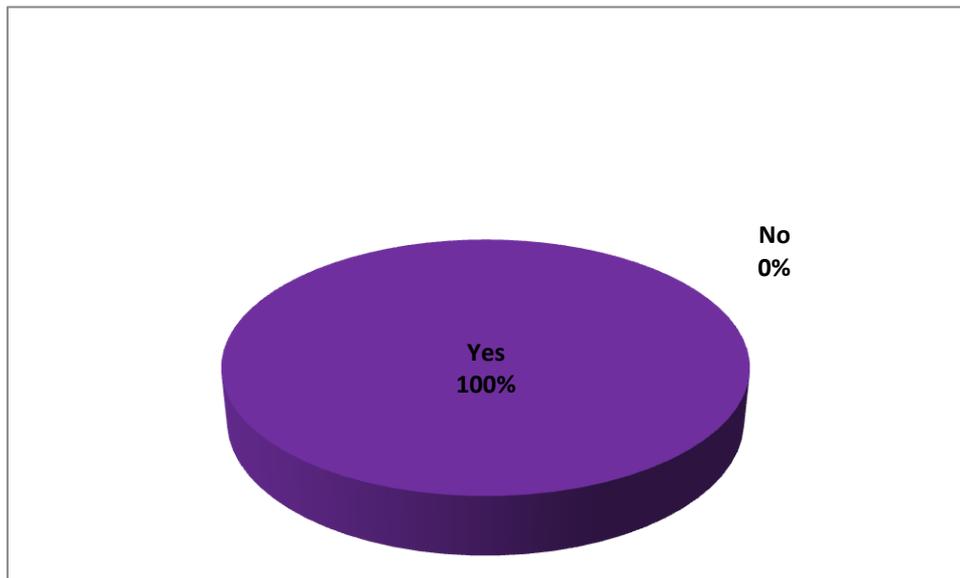


Figure 4.136 Views of nurse educators on whether clinical accompaniment benefited the student nurses (N=9)

All the nurse educators (100%; N=9) indicated that clinical accompaniment benefited the student nurses. The findings are consistent with the majority, namely 91% of student nurses (see section 4.3.5.2.4).

4.4.3.27 Indication by nurse educators on how student nurses benefited from clinical accompaniment

In this sub-section, the respondents were asked how the student nurses benefitted from clinical placement. The respondents could provide more than one response to this question.

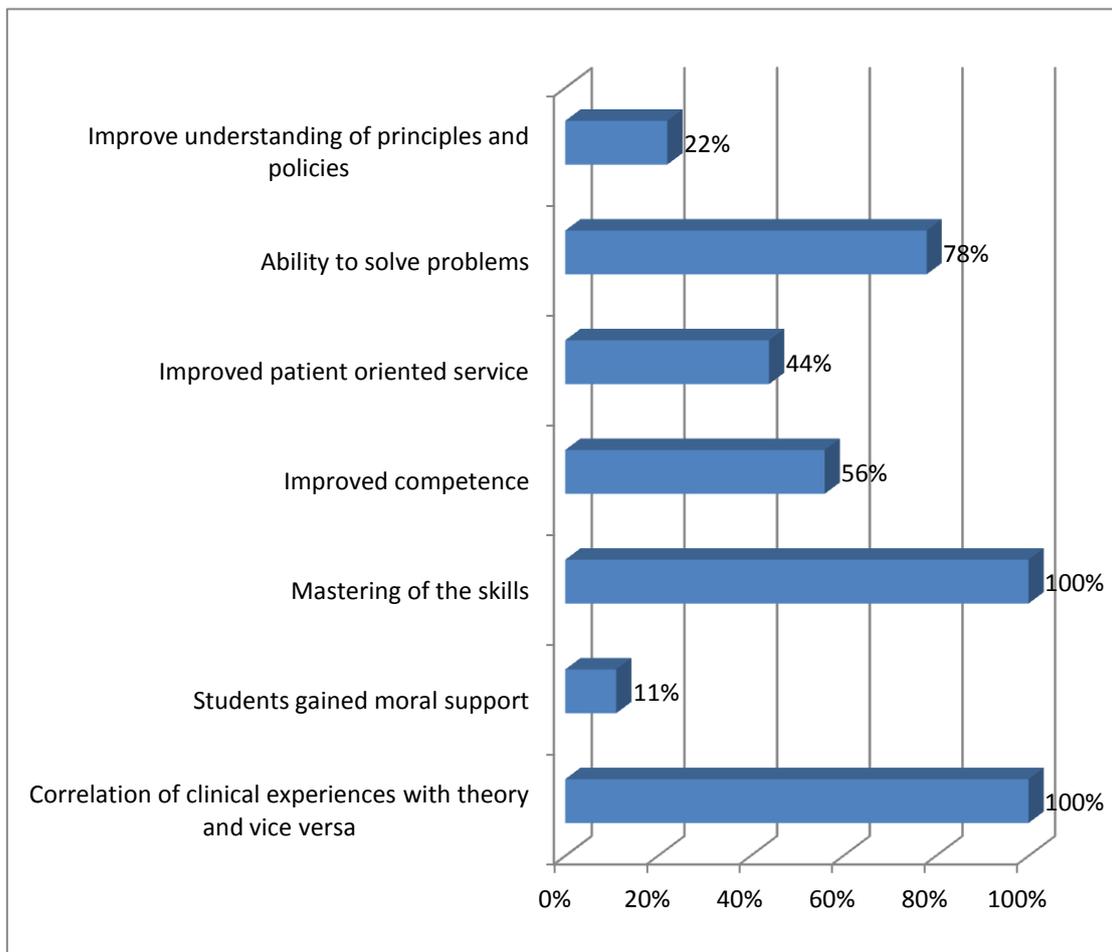


Figure 4.137 Responses of nurse educators on how student nurses benefited from clinical accompaniment (N=9)

This open-ended question allowed nurse educators to indicate how student nurses benefited from the clinical accompaniment. All the nurse educators (100; N=9), indicated that clinical accompaniment helped student nurse with correlation of clinical experiences with theory and vice versa, 11% (n=1) indicated that students gained moral support, 100% (n=9) indicated that it helped student nurses to master the skills, 56% (n=5) indicated that it helped Improve competence of student nurses, 44% (n=4) indicated that it improved patient oriented service, 78% (n=7) indicated that it assisted in ability to solve problems and 22% (n=2) indicated that it improved understanding of principles and policies. The majority, namely 100% of nurse educators indicated that clinical accompaniment helped student nurse with correlation of clinical experiences with theory and vice versa and helped student nurses to master the skills whereas many, namely 17% of student nurses indicated the benefits of clinical accompaniment as ability to integrate theory and practice and reflection on experiences (see section 4.3.4.2.8).

4.4.3.28 Indication on whether nurse educators discuss with student nurses about the problems that student nurses encounter in the clinical area

In this sub-section, the respondents had to respond whether they discussed the problems that student nurses experienced during clinical placement.

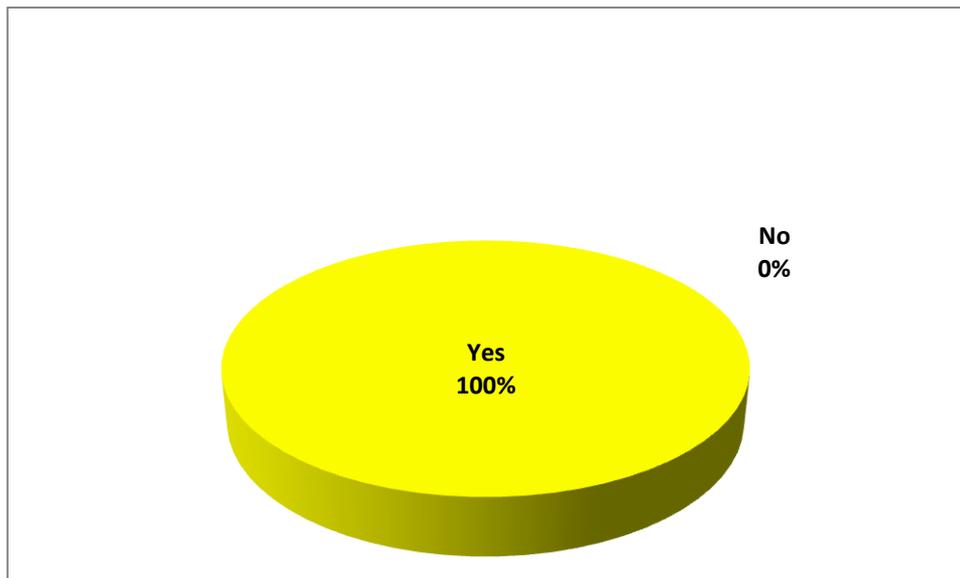


Figure 4.138 Responses of nurse educators on whether they discuss the problems which student nurses encounter in the clinical area (N=9)

All the nurse educators (100%; N=9), indicated that they were available to discuss the problems encountered by student nurses in the clinical area. The findings are consistent with the majority, namely 59% of the student nurses (see section 4.3.3.2.9).

Burns et al (2006:180) state that evaluation of the teaching day should occur routinely. The authors suggest a “End of the Day Newspaper Review” technique. Thinking briefly about who was seen, what got done, how the students felt about particular things happening in the ward and where the students were going next.

4.4.3.29 Problems reported to nurse educators by student nurses

In this sub-section, the respondents were to list the problems which the students reported to them. More than one response could be given to this question.

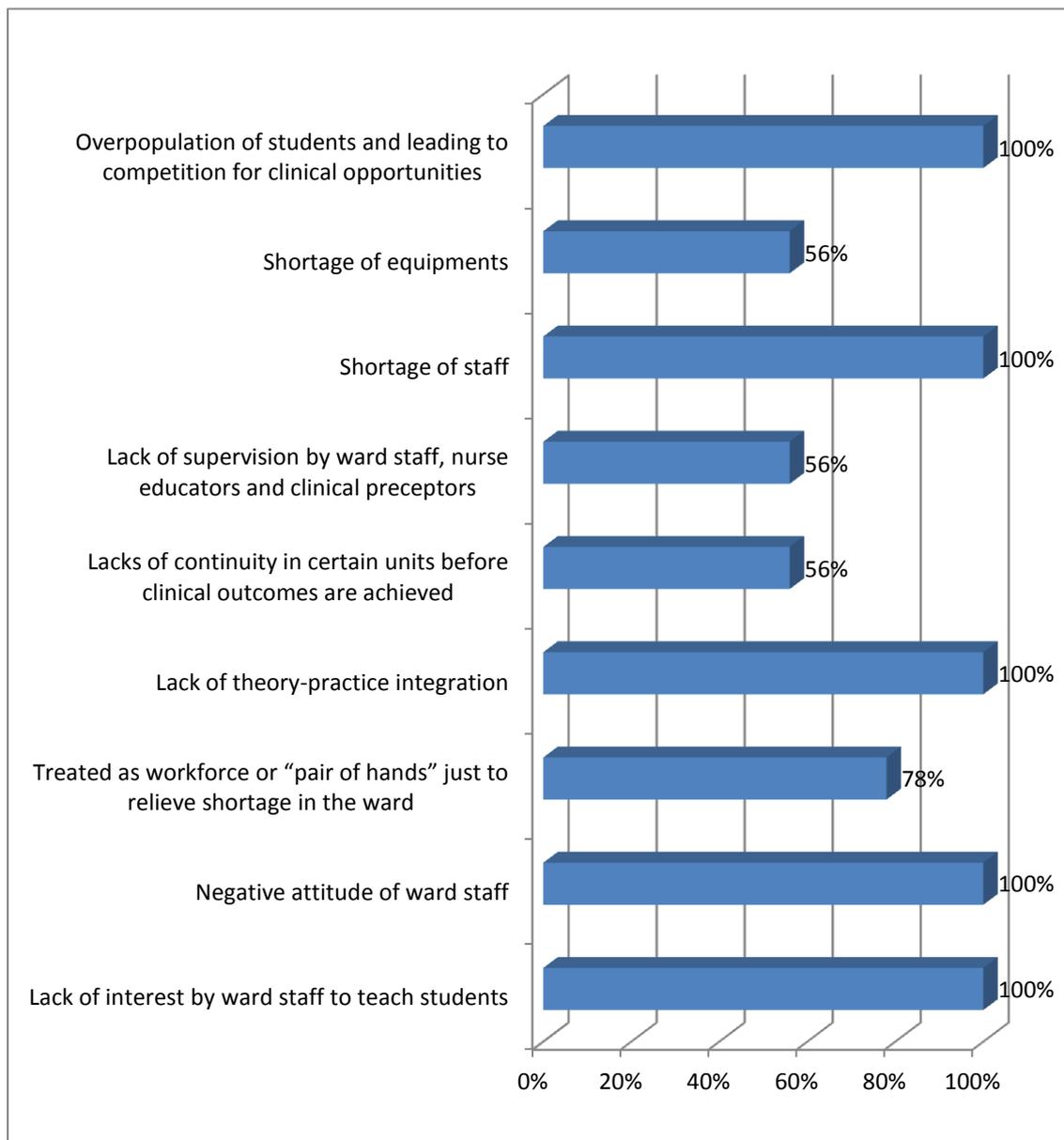


Figure 4.139 Responses of nurse educators on problems reported by student nurses (N=9)

This open-ended question allowed nurse educators to state the problems reported to them by student nurses. All nurse educators (100%; N=9) indicated that the problems reported to them by students as lack of interest by ward staff to teach students, 100% (n=9) implicated the negative attitude of ward staff, and 78% (n=7) indicated that student nurses were treated as workforce or "pair of hands" just to relieve shortage in

the ward. In addition, 100% (n=9) of the nurse educators indicated that there was lack of theory-practice integration, 56% (n=5) indicated that there was lack of continuity in certain units before clinical outcomes were achieved, 56% (n=5) indicated that there was lack of supervision by ward staff, nurse educators and clinical preceptors, 100% (n=9) indicated shortage of staff, 56% (n=5) indicated shortage of equipments and 100% (n=9) indicated overpopulation of students leading to competition for clinical opportunities. The majority, namely 100% of nurse educators indicated the problems reported to them by student nurses as lack of interest by ward staff to teach students, negative attitude of ward staff, lack of theory-practice integration, shortage of staff and overpopulation of student nurses.

These findings are consistent with the views of Carson and Carnwell (2007:225; Castledinne (2002) cited in Pellant (2006:338); wherein student nurses indicated concerns that they encounter in the clinical area as poor role models, inadequate or irregular supervision, unrealistic theory when applied in practice, poor working environment and that they are used as “pair of hands”.

4.4.3.31 Opinions of nurse educators on the reasons why student nurses fail practice

This sub-section deals with the opinions of nurse educators as to the reasons why students fail the clinical practice. The respondents could select more than one response to this question.

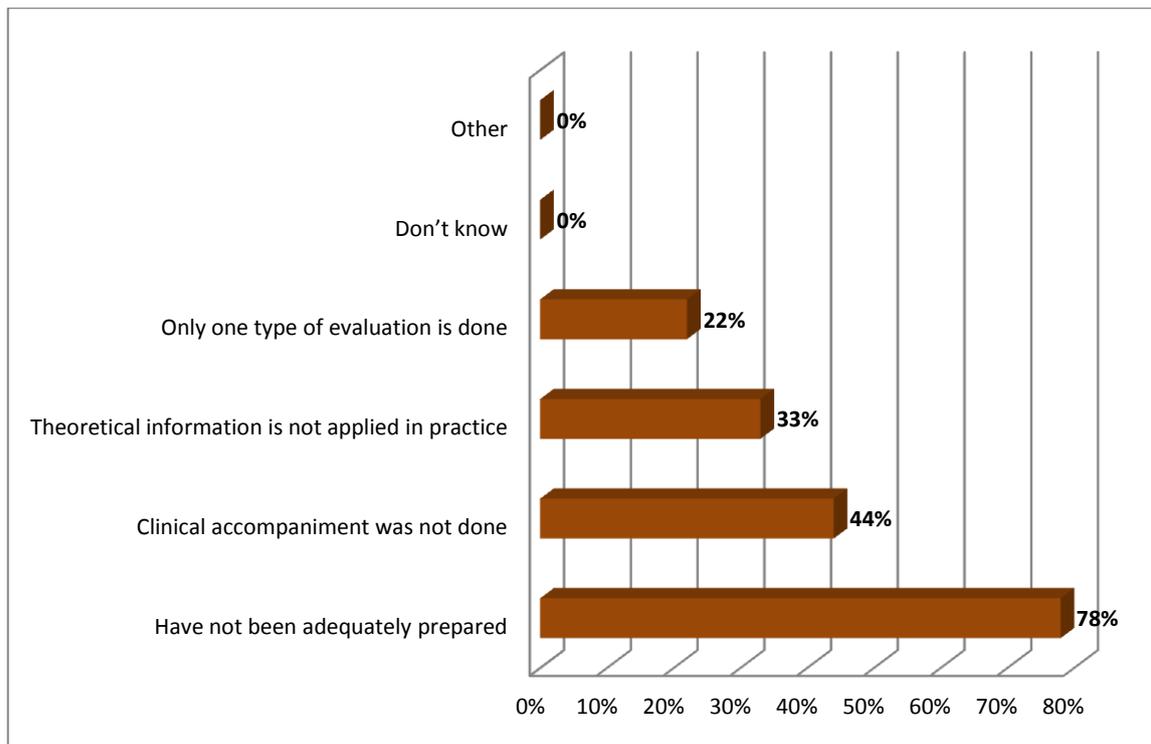


Figure 4.140 Opinions of nurse educators on the reasons for failure of clinical practice by student nurses (N=9)

Seventy eight percent (n=7) of the nurse educators indicated that student nurses fail practice because they have not been adequately prepared, 44% (n=4) indicated that clinical accompaniment was not done, 33% (n=3) indicated that theoretical information is not applied in practice and 22% (n=2) indicated that only one type of evaluation is done. The majority (78%) of the nurse educators indicated that student nurses fail practice because they have not been adequately prepared. The findings are inconsistent with the responses of student nurses who failed practica who indicated that they failed practice because clinical accompaniment was not done, there was no theory practice integration, only one type of evaluation was conducted and others indicated that they did not know why they failed (see section 4.3.2.6).

Burns et al (2006:180) state that the diagnosis of clinical learning problems needs to include data about the setting and specific cases, the student's behavior, preceptor efforts and responses by the students and the student's perception of the situation, all in light of course expectations. Data should include both the student's strengths and deficits. In addition, the preceptor and faculty need to assess the relationship between the student and the preceptor. The teaching style should be evaluated and the reasons

for poor performance must be found so that solutions can be suggested (Benzie 1998:549).

4.4.3.32 Indication by nurse educators on how they provide for students' different learning preferences in practice

In this sub-section respondents were asked to indicate how they provided for students' different learning preferences.

Table 4.10 Responses of nurse educators on how they provide for students' different learning preferences in practice

Responses of nurse educators on how they provide for the students' different learning preferences in practice	Frequency	Percent
Agree on learning contracts with student nurses.	3	33%
Have time for one on one teaching with student nurses.	5	56%
Demonstrate the common learning strategies needed in practice.	1	11%
Total	N=9	100%

This open-ended question allowed nurse educators to explain how they provided for the different learning preferences in practice. Thirty three percent (n=3) of the nurses educators indicated that they agree on learning contracts with student nurses, 56% (n=5) indicated that they had time for one on one teaching with student nurses and 11% (n=1) indicated that they demonstrate the common learning strategies needed in practice. The majority, namely 56% of nurse educators indicated that they had enough time for one on one teaching with student nurses.

4.4.4.33 Opinions of nurse educators on sufficiency of resources for students to get maximum clinical exposure

In this sub-section the opinions of nurse educators were elicited on the availability and sufficiency of resources for maximum clinical exposure of student nurses.

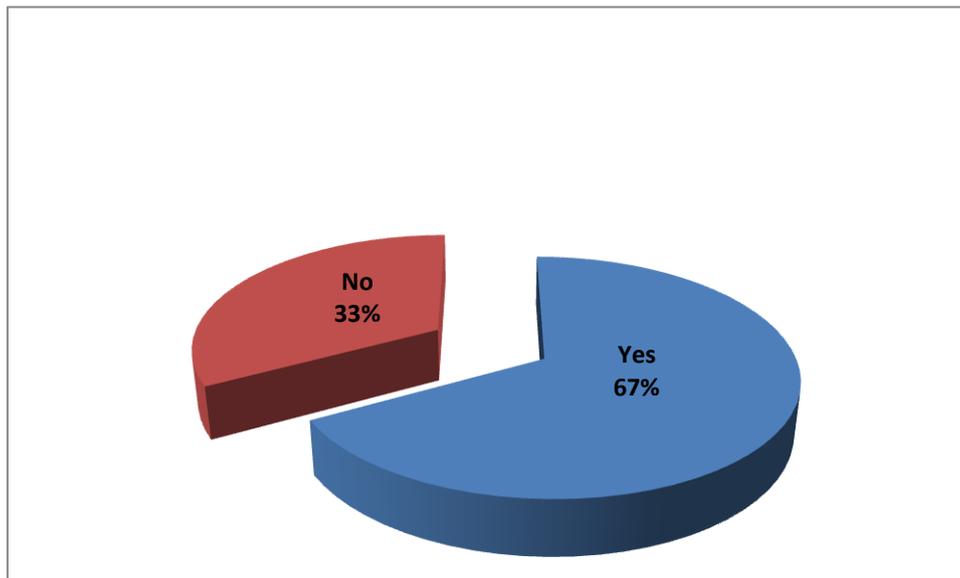


Figure 4.141 Opinions of nurse educators on sufficiency of resources for maximum clinical exposure by student nurses (N=9)

Sixty seven percent (n=6) of the nurse educators indicated that the resources were sufficient for student nurses to get the maximum clinical exposure whilst 33% (n=3) indicated that the resources were insufficient. The majority, namely 67% of the nurse educators indicated that the resources were sufficient for student nurses to get maximum clinical exposure. The findings are inconsistent with the majority 55% of the student nurses who revealed that the resources were insufficient for student nurses to get the maximum clinical exposure as reflected in section 4.3.3.2.6.

4.4.3.34 Material resources which are not available

In this sub-section the respondents were required to indicate whether material resources were available. More than one response could have been given to this question.

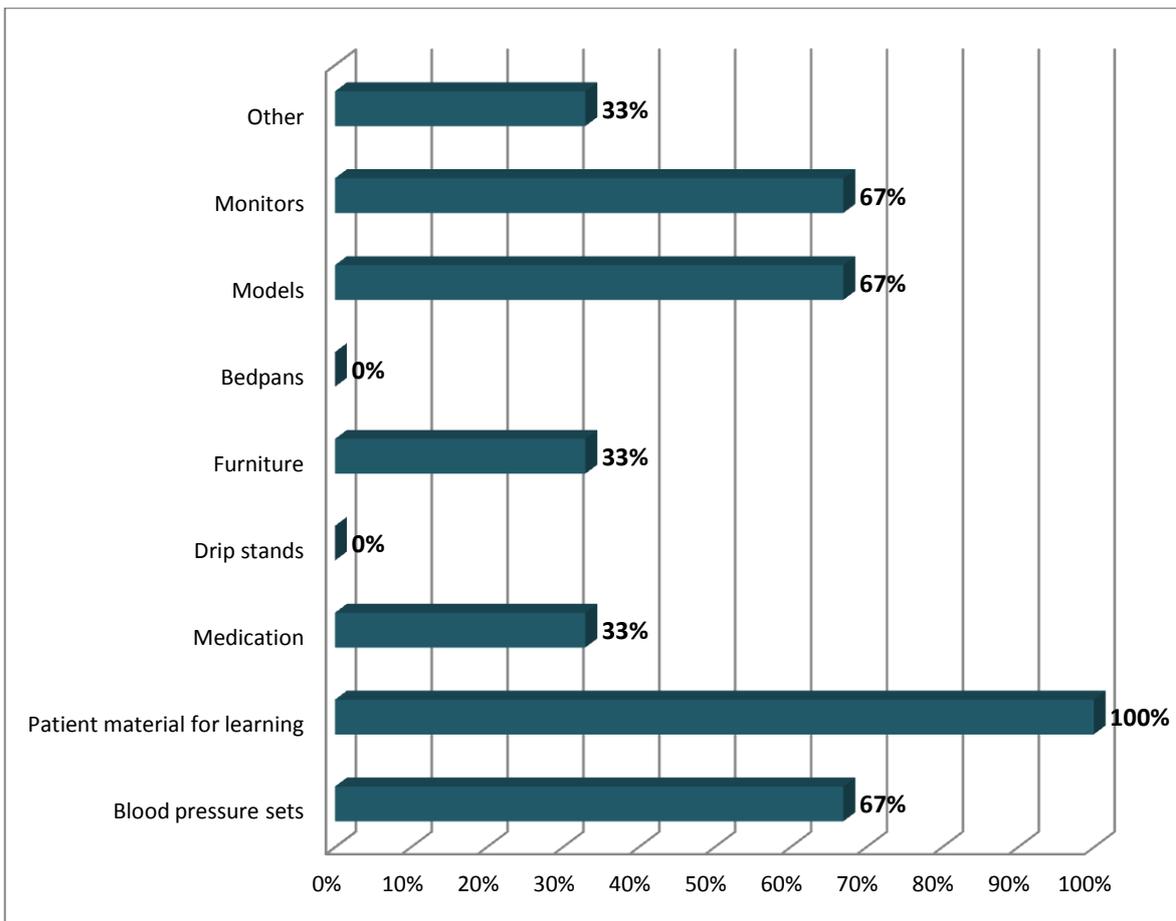


Figure 4.142 Responses of nurse educators on material resources which are not available (n=3)

Sixty seven percent (n=2) of the nurse educators indicated that the material resources which were not available were equipment such as blood pressure sets, 100% (n=3) patient material for learning, 33% (n=1), medication, 33% (n=1), furniture, 67% (n=2) models for simulation and learning, 67% (n=2) monitors and 33% (n=1) other resources. The majority, namely 100% of the nurse educators indicated that patient material for learning was inadequate. These findings are consistent with the findings of the student nurses wherein many, namely 25% indicated patient material for learning as inadequate (see section 4.3.3.2.7).

4.4.3.35 Human resources which were not available

In this sub-section the respondents were required to indicate the human resources which were not available. More than one response could have been given to this question.

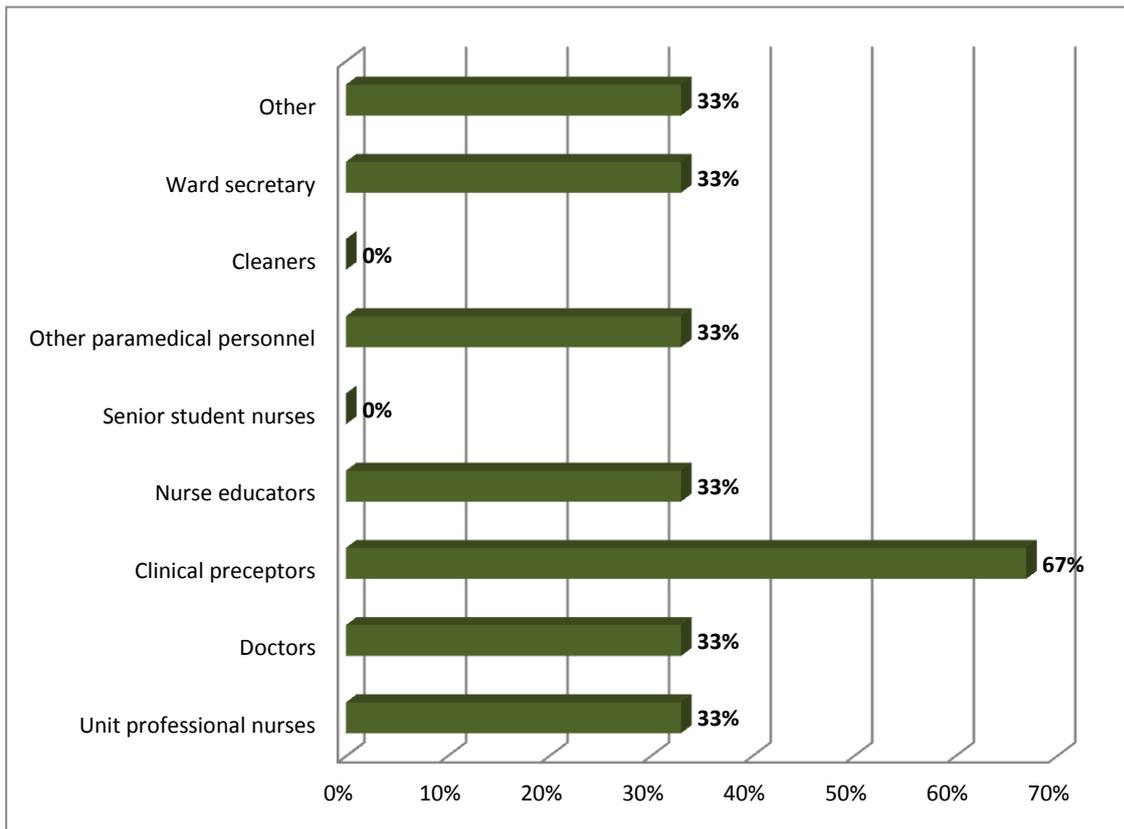


Figure 4.143 Responses of nurse educators on human resources which were not available (N=3)

Thirty three percent (n=1) of the nurse educators indicated human resources which were not available as unit professional nurses, 33% (n=1) indicated Doctors, 67% (n=2) indicated clinical preceptors, 33% (n=1) indicated nurse educators, 33% (n=1) indicated other paramedical personnel, 33% (n=1) indicated ward secretary and 33% (n=1) indicated other individuals. The majority, namely 67% of nurse educators identified clinical preceptors as not adequate. The findings are consistent with many, namely 19% of student nurses who indicated that clinical preceptors are not sufficient. (see section 4.3.3.2.8).

4.4.4 Section D: Assessment

4.4.4.1 Formative assessment

4.4.4.1.1 Person(s) who conduct formative assessments for theory

In this sub-section respondents were to identify person(s) who conduct formative theoretical assessments. More than one response could have been given to this question.

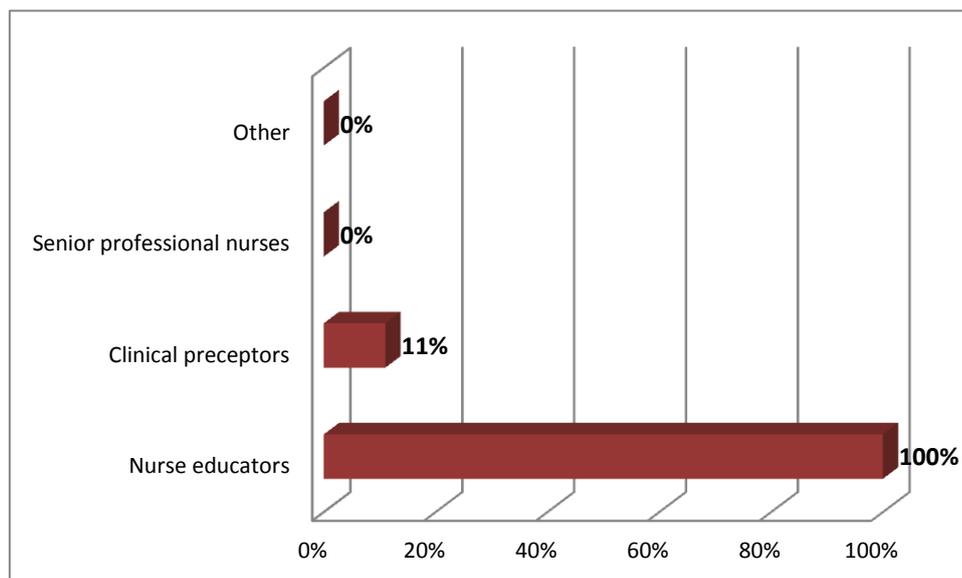


Figure 4.144 Responses of nurse educators on person(s) who conduct formative theoretical assessments (N=9)

All (100%) of the nurse educators indicated that persons responsible for formative theoretical assessment were nurse educators and one (11%) of the nurse educators indicated clinical preceptors. The majority, namely 100% of the nurse educators revealed that they are responsible for formative theoretical assessment. The findings are consistent with the student nurse's findings as reflected in section 4.3.9.1.2.

4.4.4.1.2 Person(s) who conduct formative assessments for clinical

In this sub-section respondents were to identify person(s) who conduct formative clinical assessments. More than one response could have been given to this question.

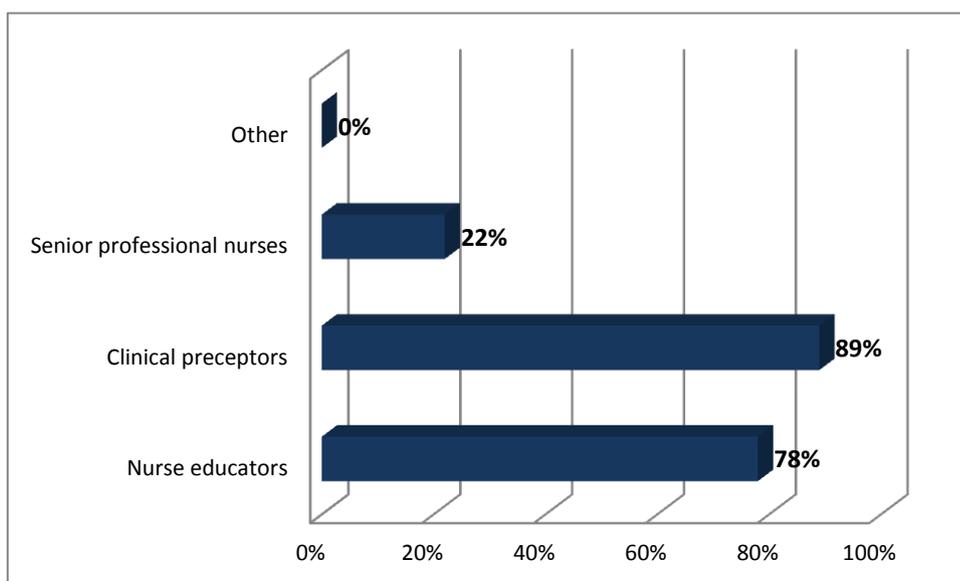


Figure 4.145 Responses of nurse educators on person(s) who conduct formative clinical assessments (N=9)

Seventy eight percent (n=7) of the nurse educators indicated persons responsible for formative clinical assessments as nurse educators, 89% (n=8) indicated clinical preceptors and 22% (n=2) indicated senior professional nurses. Majority (89%) of the nurse educators identified clinical preceptors as responsible for formative clinical assessments. The findings are not consistent with the student nurse's findings as reflected in section 4.3.9.1.2 wherein majority, namely 51% indicated that nurse educators were responsible for formative clinical assessments. Waterson et al (2006:61) is of the view that professional nurses in the wards should also be involved in assessment.

4.4.4.1.3 Formative assessment strategies used for theory

In this sub-section respondents were to indicate formative assessment strategies used in theory. More than one response could have been given to this question.

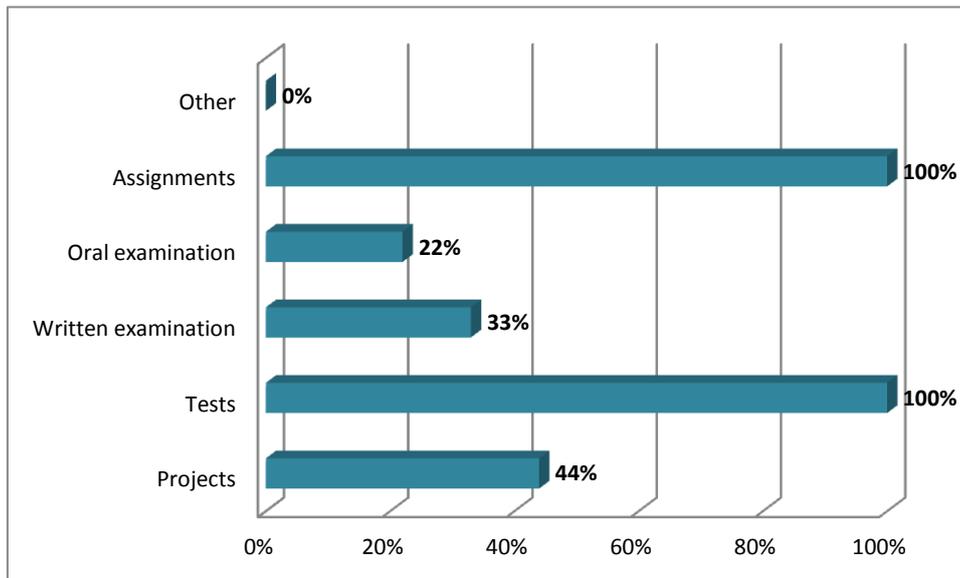


Figure 4.146 Responses of nurse educators on formative assessments strategies used for theory (N=9)

Forty four percent (n=4) of the nurse educators indicated strategies used for formative theoretical assessments as projects, 100% (n=9) indicated tests, 33% (n=3) indicated written examination, 22% (n=2) indicated oral examination and 100% (n=9) indicated assignments. The majority, namely 100% of nurse educators identified tests and assignments as the strategies used for formative theoretical assessments. The findings are consistent with the views of Oermann and Gaberson (2006:4) as discussed in section 2.3.5.

4.4.4.1.4 Formative assessments strategies used for clinical

In this sub-section respondents were to indicate formative assessment strategies used in clinical. More than one response could have been given to this question.

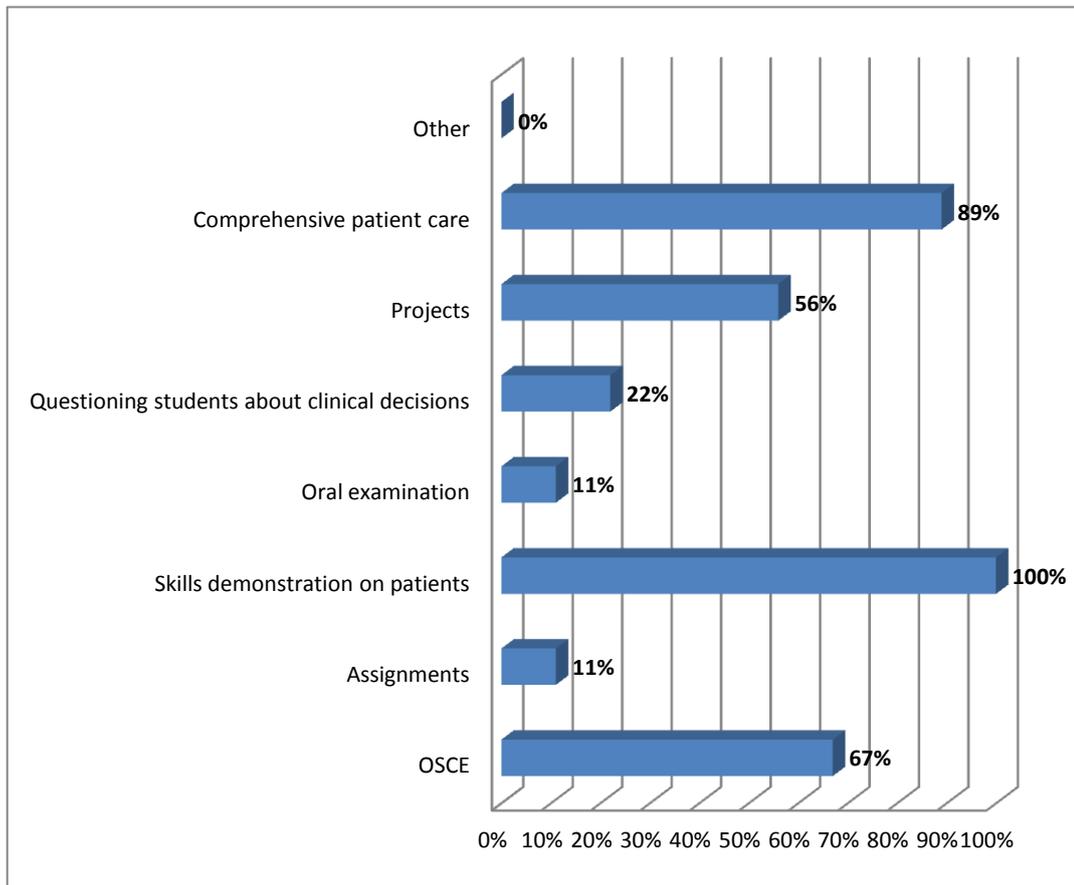


Figure 4.147 Responses of nurse educators on formative assessment strategies used for clinical (N=9)

Sixty seven percent (n=6) of the nurse educators indicated the strategies used for formative clinical assessments as OSCE, 11% (n=1) indicated assignments, 100% (n=9) indicated skills demonstration on patients, 11% (n=1) indicated oral examination, 22% (n=2) indicated questioning students about clinical decisions, 56% (n=5) indicated projects and 89% (n=8) indicated comprehensive patient care. The majority, namely 100% of nurse educators indicated skills demonstration on patients as the strategy used for formative clinical assessments followed by (67%) who indicated OSCE. The findings are not consistent with responses of student nurses wherein many, namely 26% identified OSCE as the strategy used for formative clinical assessments followed by 25% who indicated skills demonstration on patients (See section 4.3.9.1.1). The findings are consistent with the views of Oermann and Gaberson (2006:4) as discussed in section 2.3.5.

4.4.4.1.5 Indication of whether remedial programme is provided for student nurses who fail theory

In this sub-section, respondents were to indicate whether remedial programme was provided for student nurses who have failed theory.

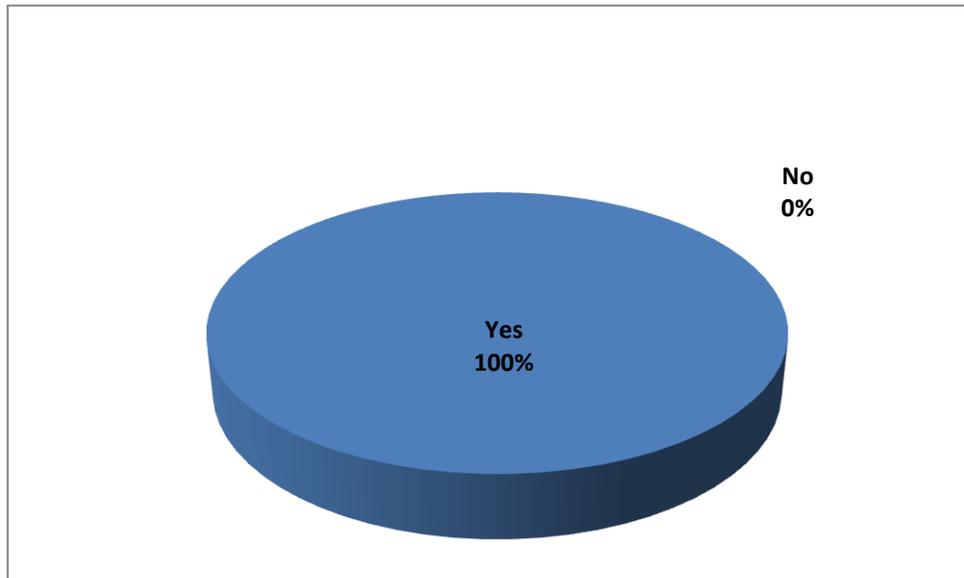


Figure 4.148 Responses of nurse educators on whether remedial programme is provided for student nurses who fail theory (N=9)

All 100% (N=9) of the nurse educators indicated that remedial teaching was provided for student nurses who failed theory.

4.4.4.1.6 Indication of whether remedial programme is compulsory for student nurses who fail theory

In this sub-section, respondents were to indicate whether remedial programme was compulsory for student nurses who have failed theory.

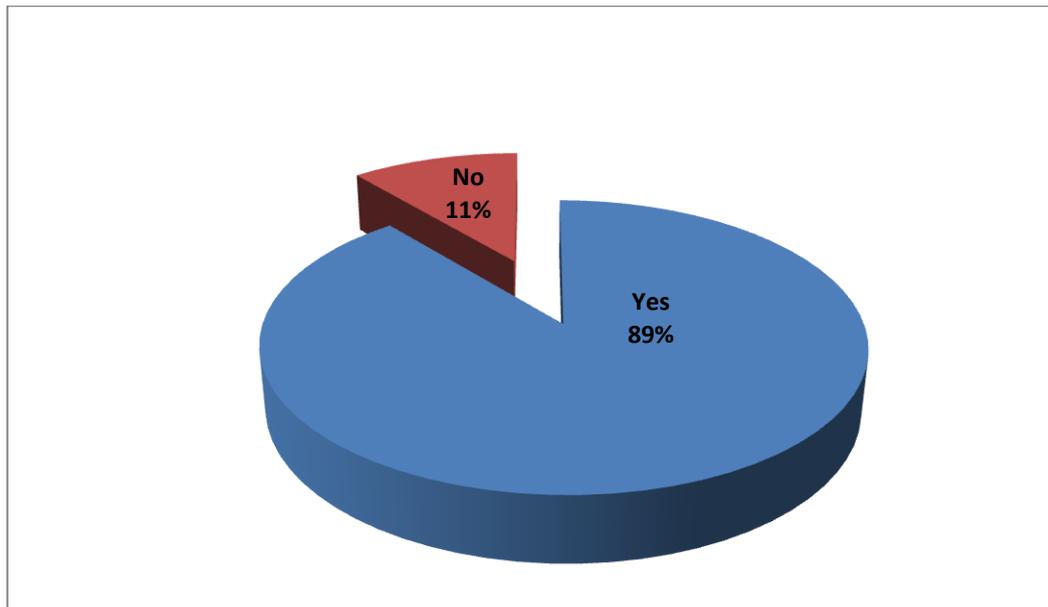


Figure 4.149 Responses of nurse educators on whether remedial programme is compulsory for student nurses who fail theory (N=9)

Eight nine percent (n=8) of the nurse educators indicated that remedial programme was compulsory for student nurses who failed theory whilst one 11% (n=1) indicated that remedial programme was not available. Waterson et al (2006:63) revealed that student nurses were not satisfied with the remedial teaching that was offered because it was inadequate, inaccessible and that it was made available when they have already failed or lodged an appeal.

4.4.4.1.7 Activities practiced during remedial programme

In this sub-section, respondents were to indicate activities practiced during remedial programme. More than one response could have been given to this question.

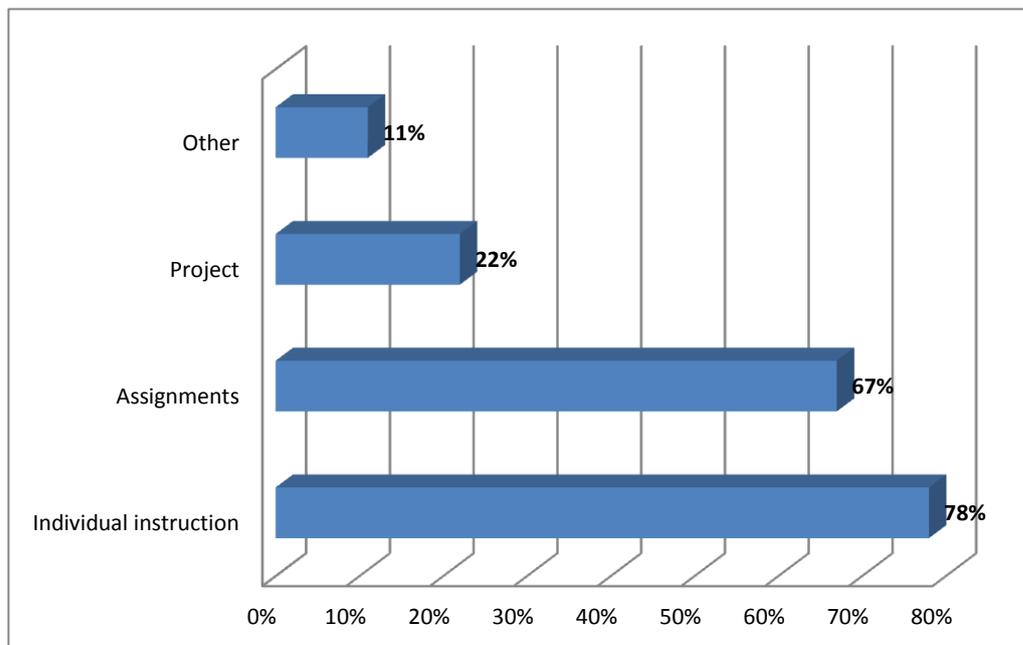


Figure 4.150 Responses of nurse educators on activities practiced during remedial programme for student nurses who fail theory (N=9)

Seventy eight percent (n=7) of the nurse educators indicated the activities practiced during remedial programme as individual instruction, 67% (n=6) indicated assignments, 22% (n=2) indicated project and 11% (n=1) indicated other activities. Majority (78%) of the nurse educators identified individual instruction as the activities practiced during remedial programme. Mellish et al (1998:275) is of the opinion that for remedial teaching to be effective, it needs special planning and presentation.

4.4.4.1.8 Indication of whether remedial programme is provided for student nurses who fail clinical practice

In this sub-section, respondents were to indicate whether remedial programme was provided for student nurses who have failed clinical practice.

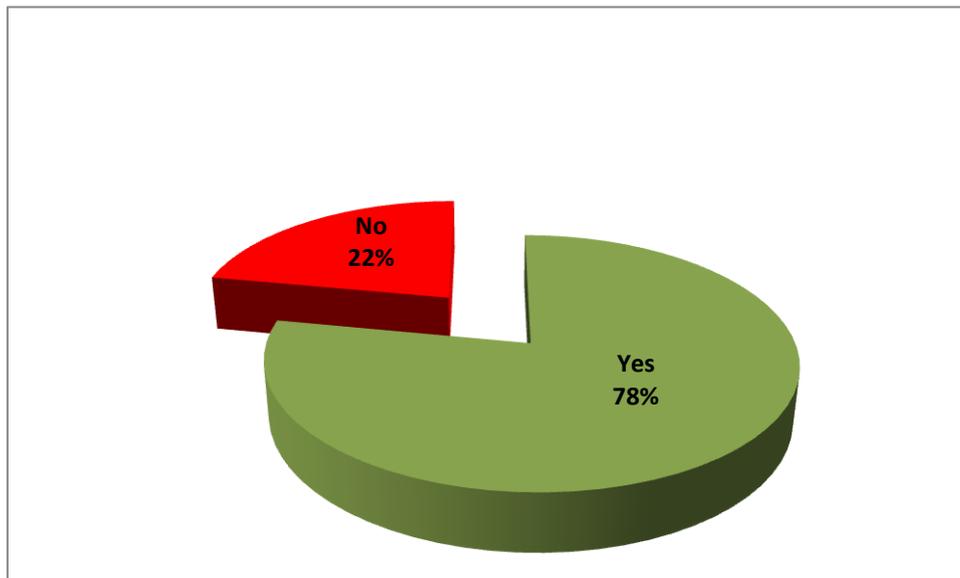


Figure 4.151 Responses of nurse educators on whether remedial programme is provided for student nurses who fail clinical practice (N=9)

Seven eight percent (n=7) indicated that remedial programme was provided for student nurses who fail clinical practice whilst 22% (n=2) of the nurse educators indicated that remedial programme was not available. The majority, namely 78% of nurse educators indicated that remedial programme was provided for student nurses who fail clinical practice.

4.4.4.1.9 Indication of whether remedial programme is compulsory for student nurses who fail clinical practice

In this sub-section, respondents were to indicate whether remedial programme was compulsory for student nurses who have failed clinical practice.

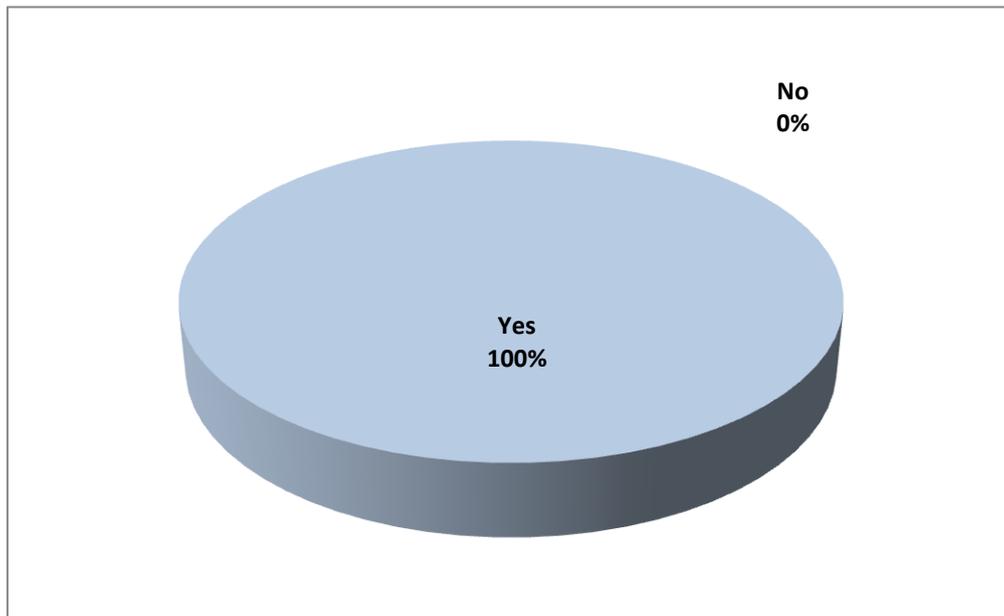


Figure 4.152 Responses of the nurse educators on whether remedial programme is compulsory for student nurses who fail clinical practice (N=9)

All the 100% (n=9) of the nurse educators indicated that remedial programme was compulsory for student nurses who fail clinical practice.

4.4.4.1.10 Activities practiced during remedial programme?

In this sub-section, respondents were to indicate activities practiced during remedial programme for student nurses who have failed clinical practice. More than one response could have been given to this question.

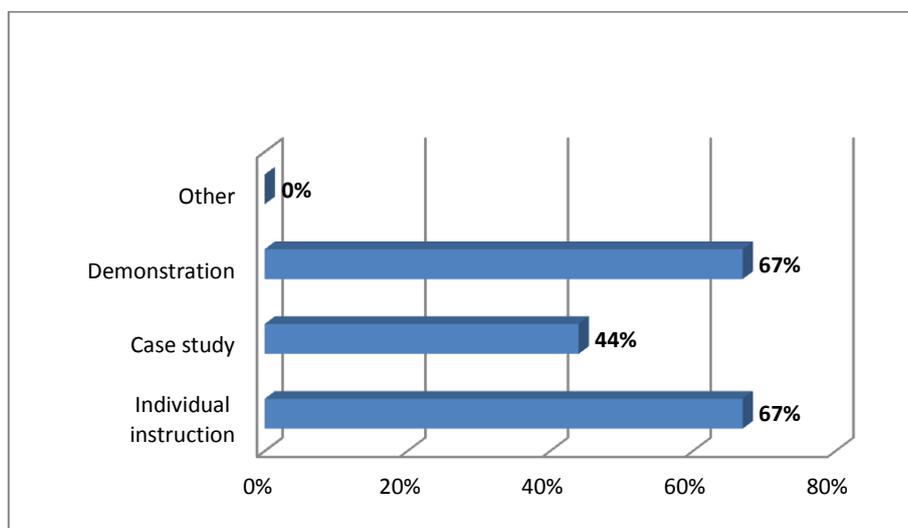


Figure 4.153 Responses of nurse educators on activities practiced during remedial programme for student nurses who failed clinical (N=9)

Sixty seven percent (n=6) of the nurse educators indicated the activities that are practiced during remedial programme for student nurses who have failed clinical as individual instruction, 44% (n=4) indicated assignments and 67% (n=6) indicated demonstration. The majority, namely 67% of nurse educators indicated individual instruction and demonstration as the activities that are practiced during remedial programme for student nurses who have failed clinical.

4.4.4.1.11 Frequency of formative assessments conducted

In this sub-section, respondents were to indicate how often formative assessments are conducted. More than one response could have been given to this question.

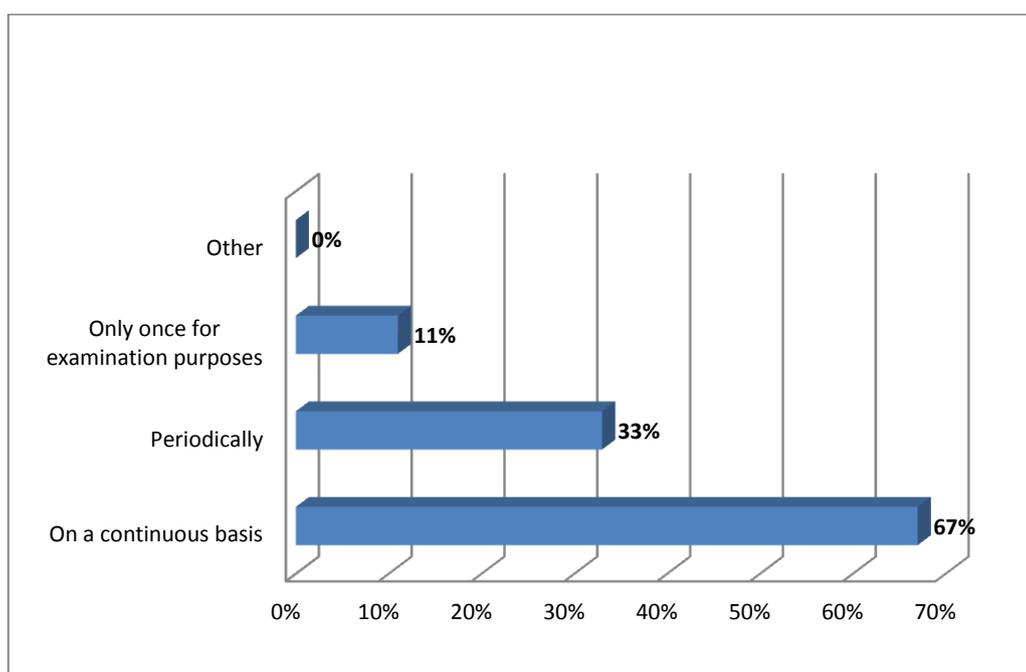


Figure 4.154 Responses of nurse educators on frequency of formative assessment conducted (N=9)

Sixty seven percent (n=6) of the nurse educators indicated the frequency of conducting formative assessments as on a continuous basis, 33% (n=3) indicated periodically and 11% (n=1) only once for examination purposes. Majority (67%) of nurse educators revealed that formative assessments were conducted on a continuous basis. The findings are consistent with the views of Quinn and Hughes (2007:268) and Oermann and Gaberson (2006:4) as discussed in section 2.3.5.1. The findings are not consistent

with the responses of student nurses wherein many, namely 45% indicated that formative assessments were done periodically (see section 4.3.9.1.2).

4.4.4.1.12 Opinions of nurse educators on aspects applicable to formative assessments

In this sub-section, respondents were to reveal their opinions on aspects which were applicable to formative assessments. More than one response could have been given to this question.

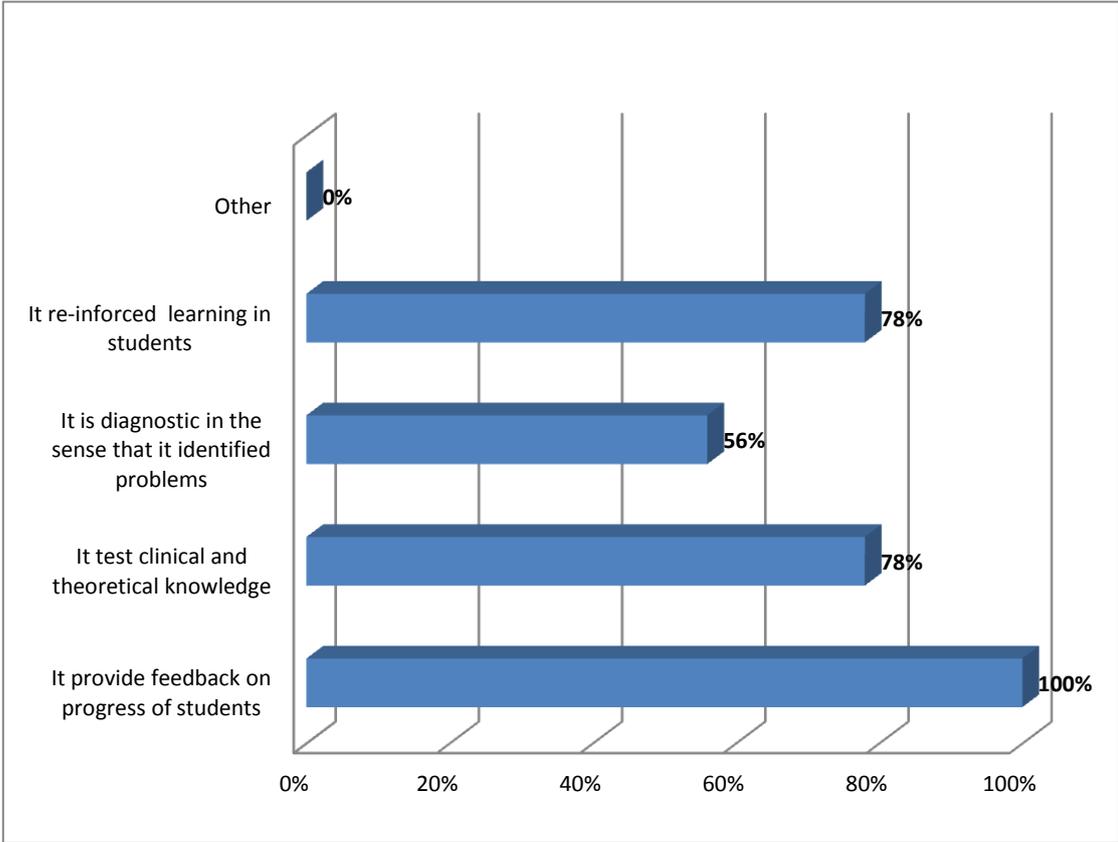


Figure 4.155 Opinions of nurse educators on aspects applicable to formative assessments (N=9)

All 100% (N=9) of the nurse educators indicated that formative assessments provided feedback on progress of students, 78% (n=7) indicated that it test clinical and theoretical knowledge, 56% (n=5) indicated that it diagnostic in the sense that it identified problems and 78% (n=7) indicated that it re-enforced learning in students. Majority (100%) of nurse educators indicated that formative assessments provided feedback on progress of students. The findings are consistent with the views of Quinn

and Hughes (2007:268) and Oermann and Gaberson (2006:4) as discussed in section 2.3.5.

4.4.4.1.13 Opinions of nurse educators on barriers encountered during formative assessments

In this sub-section, respondents were to reveal their opinions on barriers encountered during formative assessments. More than one response could have been given to this question.

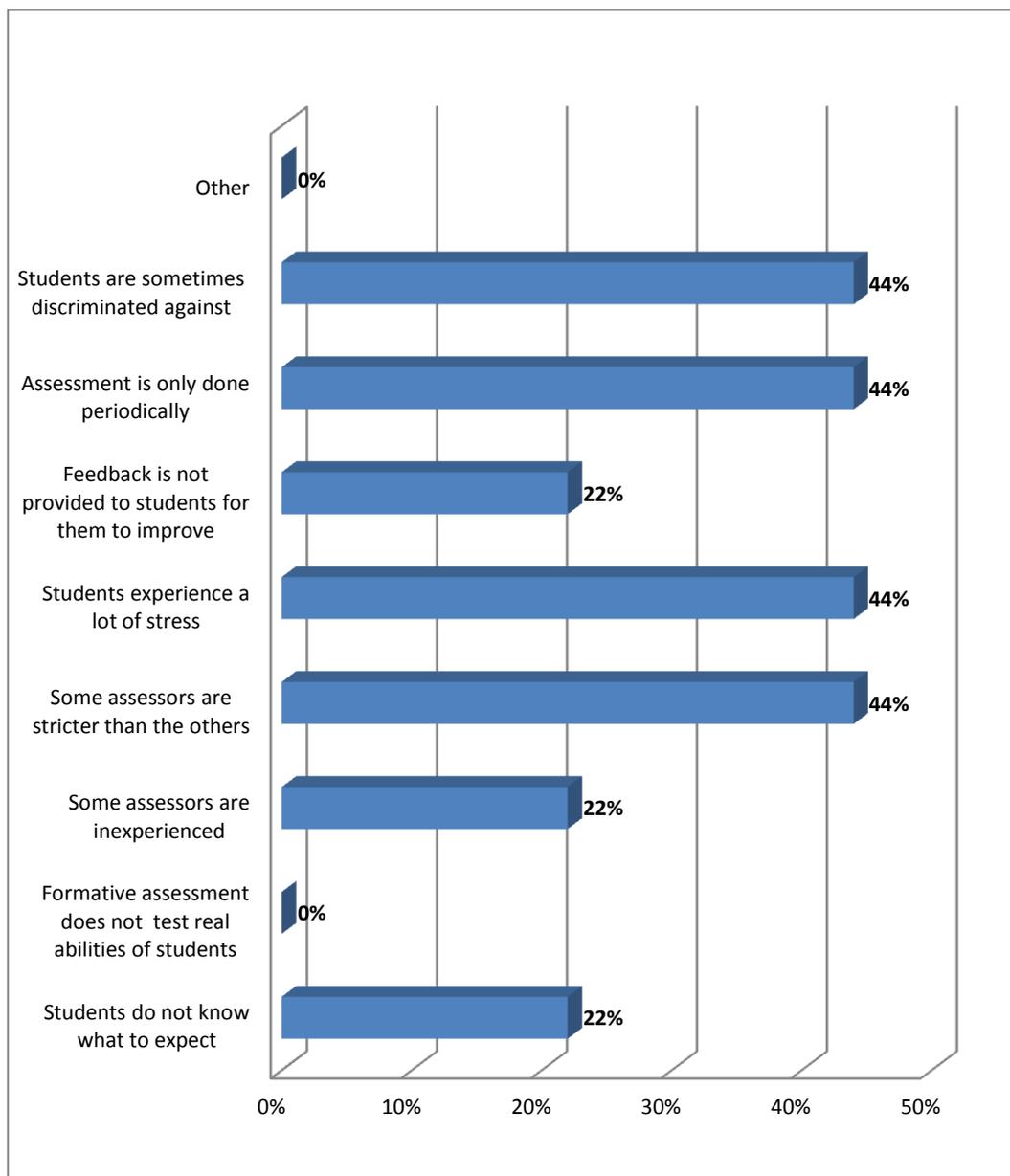


Figure 4.156 Opinions of nurse educators on barriers encountered during formative assessments (N=9)

Twenty two percent (n=2) of the nurse educators indicated the barriers of formative assessments as that students do not know what to expect, 22% (n=2) indicated that some assessors are inexperienced, 44% (n=4) indicated that some assessors are stricter than others, 44% (n=4) indicated that students experienced a lot of stress, 22% (n=2) indicated that feedback is not provided to students for them to improve, 44% (n=4) indicated that assessments is only done periodically and 44% (n=4) indicated that students are sometimes discriminated against. Many, namely (44%) of the nurse educators indicated that some assessors are stricter than others, that students experienced a lot of stress, that assessments is only done periodically and that students are sometimes discriminated against. The findings are consistent to only one aspect wherein many, namely 24% of student nurses indicated the barriers of formative assessment as that some assessors are stricter than others (see section 4.3.9.1.5).

4.4.4.2 Summative assessments

4.4.4.2.1 Person(s) who conduct summative assessments for theory

In this sub-section, respondents were to identify person(s) who conduct summative theoretical assessments. More than one response could have been given to this question.

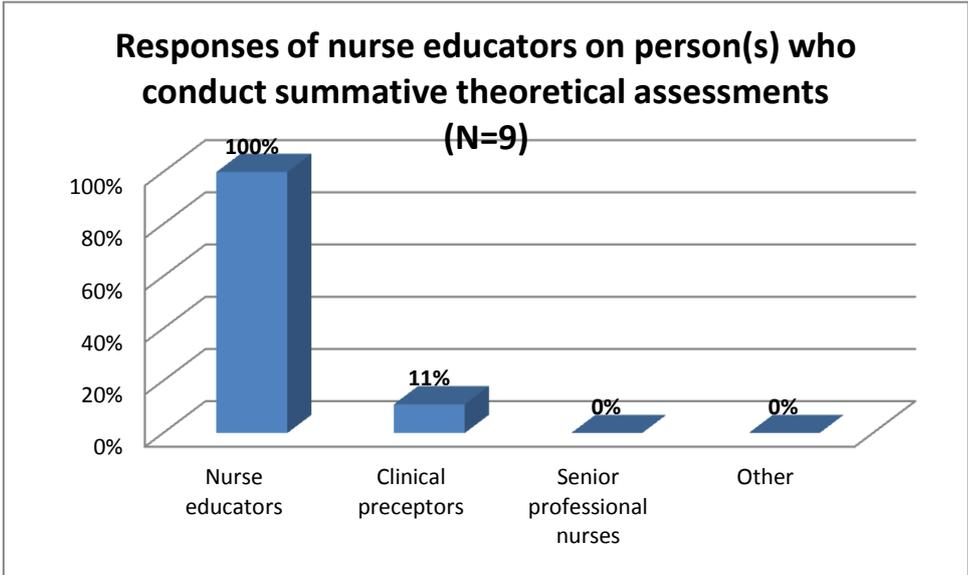


Figure 4.157 Responses of nurse educators on person(s) who conduct summative theoretical assessments (N=9)

All 100% (N=9) of the nurse educators indicated that they were responsible for summative theoretical assessments and 11% (n=1) indicated other clinical preceptors. The majority, namely 100% of the nurse educators revealed that they are responsible for summative theoretical assessments.

4.4.4.2.2 *Person(s) who conduct summative assessments for clinical*

In this sub-section, respondents were to identify person(s) who conduct summative clinical assessments. More than one response could have been given to this question.

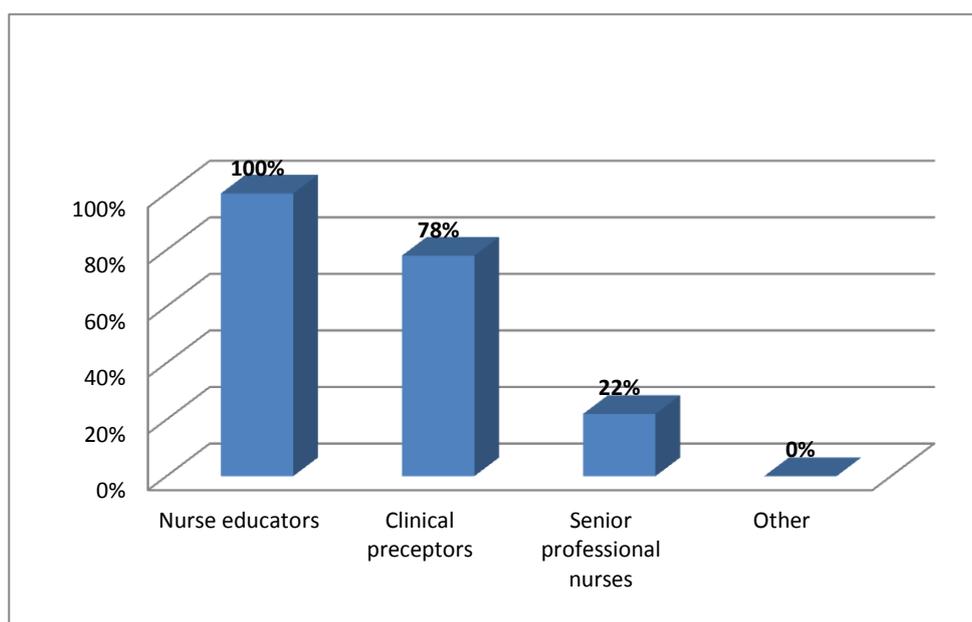


Figure 4.158 Responses of nurse educators on person(s) who conduct summative clinical assessments (N=9)

All 100% (n=9) of the nurse educators indicated that they conducted summative clinical assessments, 78% (n=7) indicated clinical preceptors and 22% (n=2) indicated senior professional nurses. Although the majority, namely 100% of nurse educators revealed that they were responsible for summative clinical assessment, it can be noted that to some extent, clinical preceptors and senior professional nurses in the wards are responsible for summative clinical assessments. These findings support the views of McCarthy and Murphy (2008:303) about different persons involved in clinical evaluation as discussed in section 2.3.7.3).

4.4.4.2.3 Summative assessments strategies used for theory

In this sub-section, respondents were to identify strategies used for summative theoretical assessments. More than one response could have been given to this question.

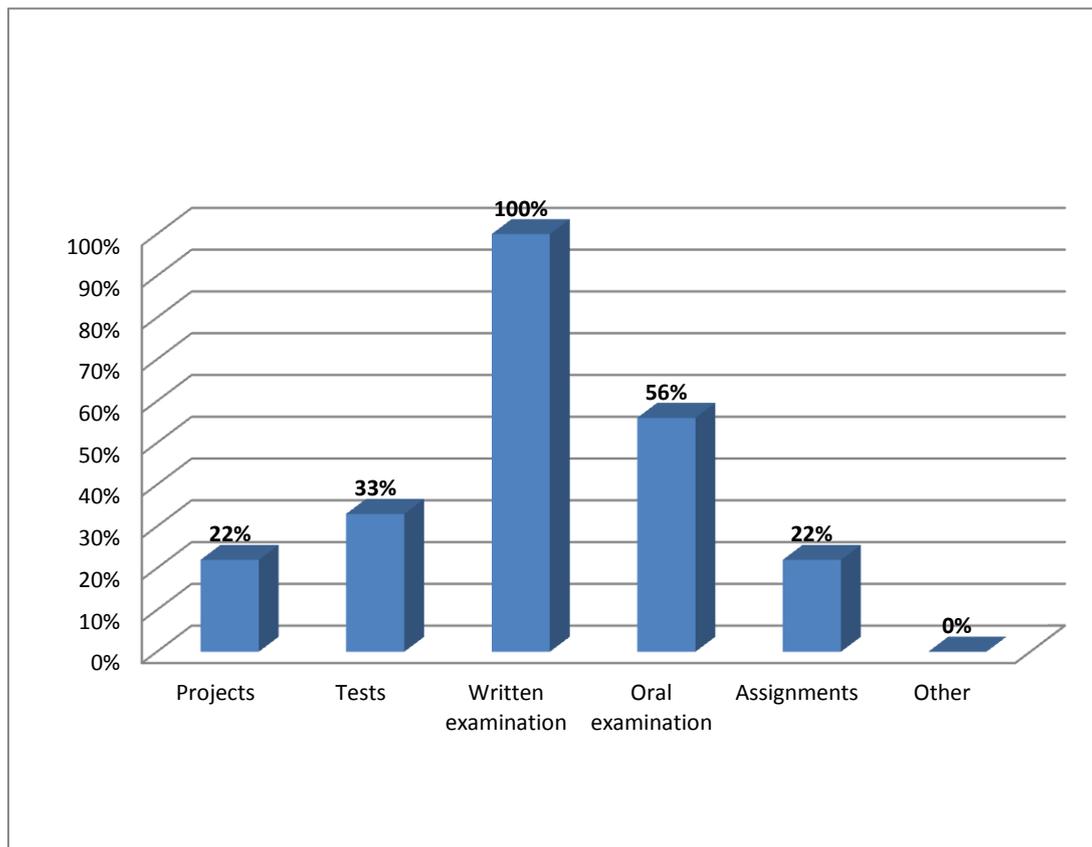


Figure 4.159 Responses of nurse educators on used summative theoretical assessment strategies (N=9)

Twenty two percent (n=2) of the nurse educators indicated strategies used for summative theoretical assessment as projects, 33% (n=3) indicated tests, 100% (n=9) indicated written examination, 56% (n=5) indicated oral examination and 22% (n=2) indicated assignments. The majority, namely 100% of nurse educators indicated written examination as strategies used summative theoretical assessment. The findings support the views of Oermann and Gaberson (2006:4) as discussed in section 2.3.5.

4.4.4.2.4 Summative assessments strategies used for clinical

In this sub-section, respondents were to identify strategies used for summative clinical assessments. More than one response could have been given to this question.

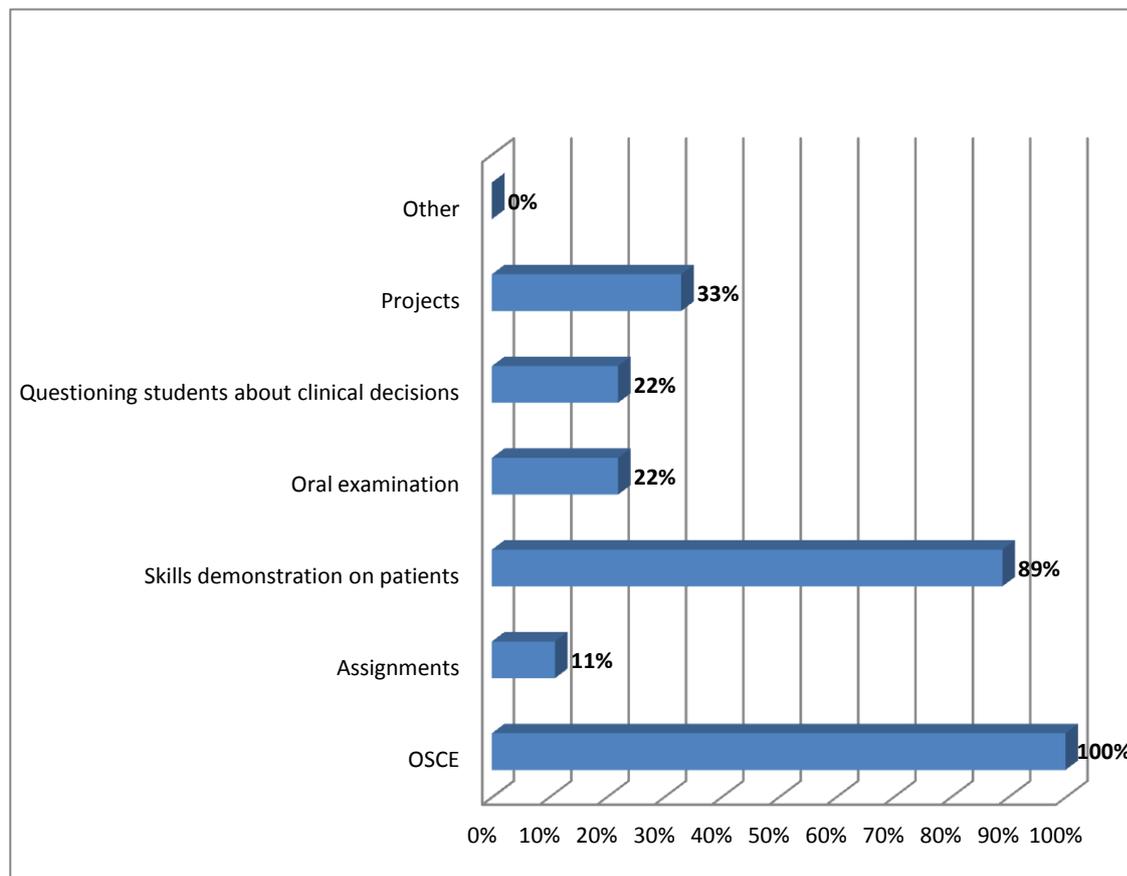


Figure 4.160 Responses of nurse educators on used summative clinical assessment strategies (N=9)

All 100% (n=9) of the nurse educators indicated strategies used for summative clinical assessments as OSCE, 11% (n=1) indicated assignments, 89% (n=8) indicated skills demonstration on patients, 22% (n=2) indicated oral examination, 22% (n=2) indicated questioning students about clinical decisions and 33% (n=3) indicated projects. The majority 100% of nurse educators revealed that OSCE is mostly used for summative clinical assessments followed by 89% who indicated skills demonstration on patients. The findings differ from findings revealed in section 4.4.4.1.4 where nurse educators (100%) revealed that for formative clinical assessments they use skills demonstration on patients followed by (67%) who indicated OSCE.

4.4.4.2.5 Reasons for doing summative assessments

In this sub-section, respondents were to provide reasons for conducting summative assessments. More than one response could have been given to this question.

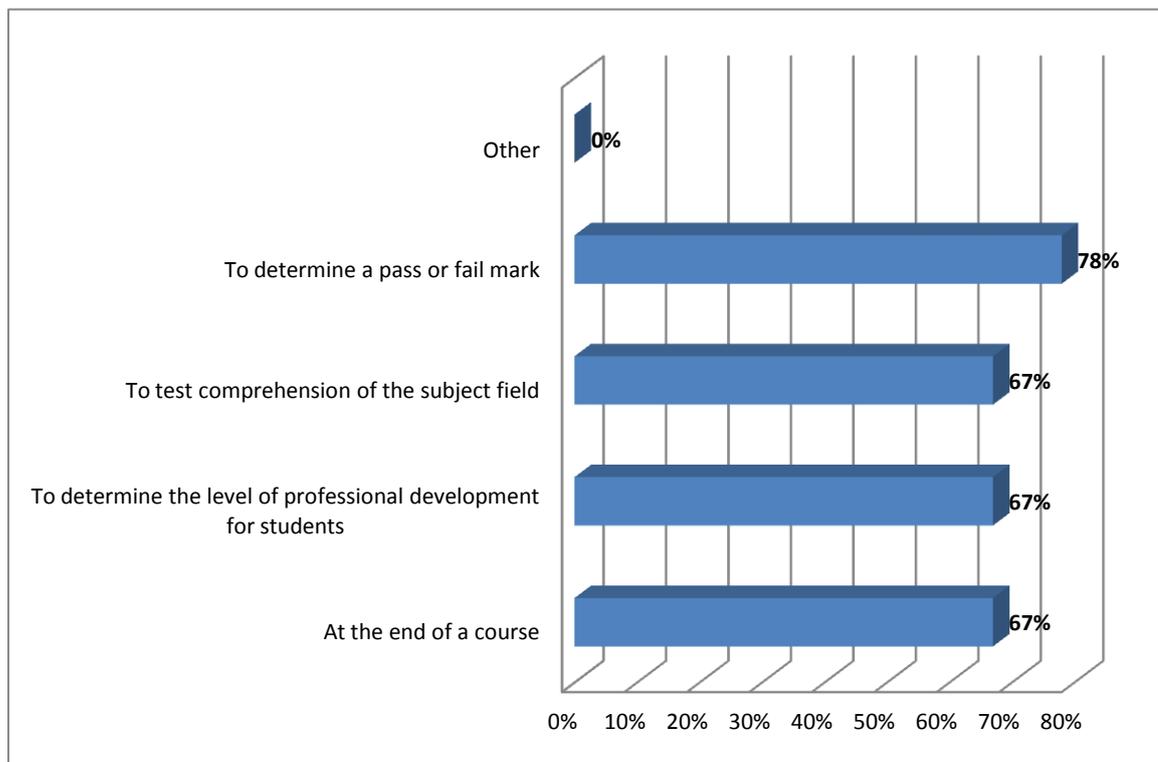


Figure 4.161 Responses of nurse educators on reasons for doing summative assessments (N=9)

Sixty seven percent (n=6) of the nurse educators indicated that summative assessments were done at the end of the course, 67% (n=6) indicated that they determine the level of professional development for students, 67% (n=6) indicated that it test comprehension of the subject field and 78% (n=7) indicated to determine a pass or fail mark. The majority, namely 78% of nurse educators indicated that summative assessments were done to determine a pass or fail mark. The findings are consistent with the views of Oermann and Gaberson (2006:5) as reflected in section 2.3.5.2 and the responses of student nurses as revealed in section 4.3.9.2.1.

4.4.4.2.6 Barriers encountered during summative assessment

In this sub-section, respondents were to reveal their opinions on barriers encountered during summative assessments. More than one response could have been given to this question.

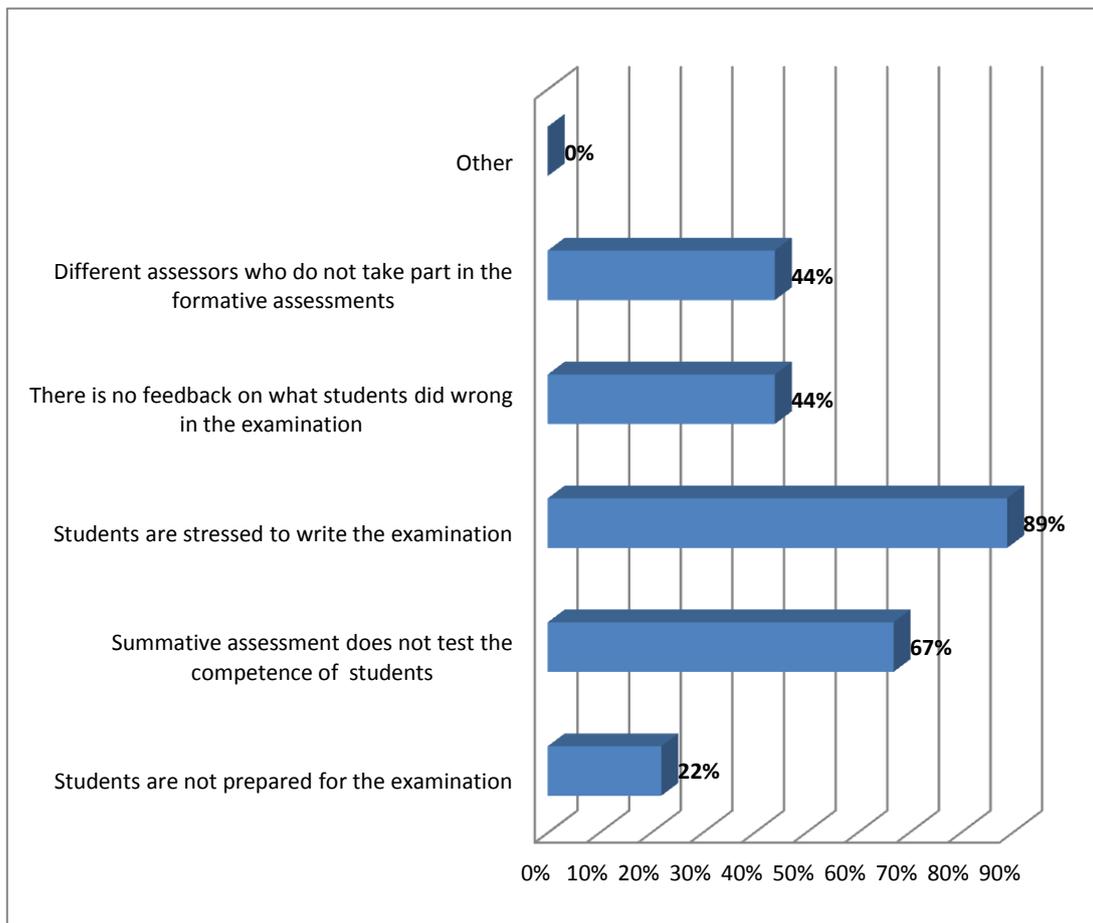


Figure 4.162 Responses of nurse educators on barriers encountered during summative assessments (N=9)

Forty four percent (n=4) of the nurse educators indicated the barriers encountered during summative assessments as that students are not prepared for the examination, 22% (n=2) indicated that summative assessment does not test the competence of students, 67% (n=6) indicated that students are stressed to write the examination, 89% (n=8) indicated that there was no feedback on what students did wrong in the examination, and 44% (n=4) indicated that it was because of different assessors who do not take part in the formative assessments. The majority, namely 89% of nurse educators indicated the lack of feedback on what students did wrong in the examination

was a barrier in summative assessments. The findings are consistent with the responses of student nurses as revealed in section 4.3.9.2.2.

4.4.4.2.7 Assessment strategies that are used to ensure that students are able to render comprehensive nursing care

In this sub-section, respondents were to provide the assessment strategies that they use to enable student nurses to render comprehensive patient care. More than one response could have been given to this question.

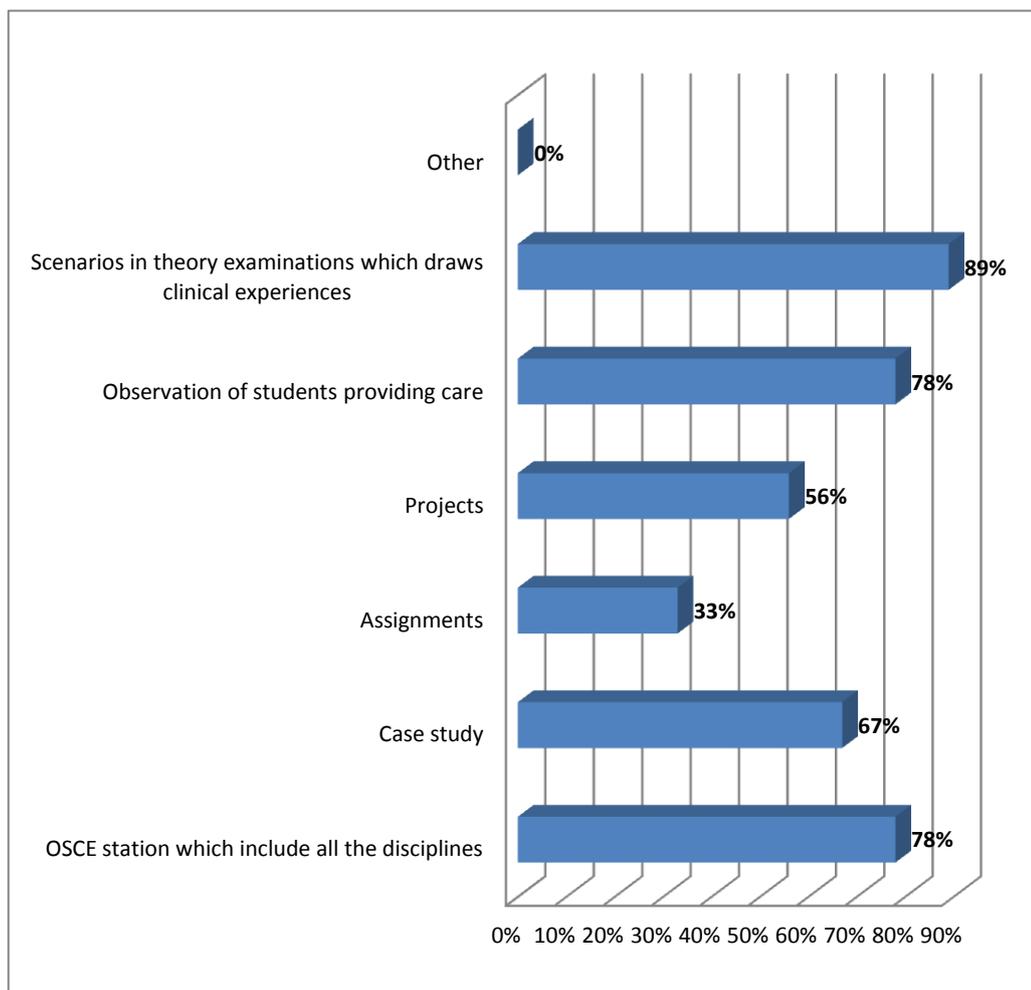


Figure 4.163 Responses of nurse educators on assessment strategies used to ensure that students are able to render comprehensive nursing care (N=9)

Seventy eight percent (n=7) of nurse educators indicated OSCE station which includes all the disciplines as assessment strategies used to ensure that students are able to render comprehensive nursing care, 67% (n=6) indicated case study, 33% (n=3)

indicated assignments, 56% (n=5) indicated projects, 78% (n=7) indicated observation of students providing care and 89% (n=8) indicated scenarios in theory examinations which draws clinical experiences. The majority, namely 89% of nurse educators revealed that scenarios in theory examinations which draw clinical experiences ensure that students are able to render comprehensive nursing care.

4.4.4.2.8 Opinions of nurse educators on the factors that affect theory practice integration

In this sub-section, respondents were to provide their opinions on the factors that affect theory-practice integration. More than one opinion could have been given to this question.

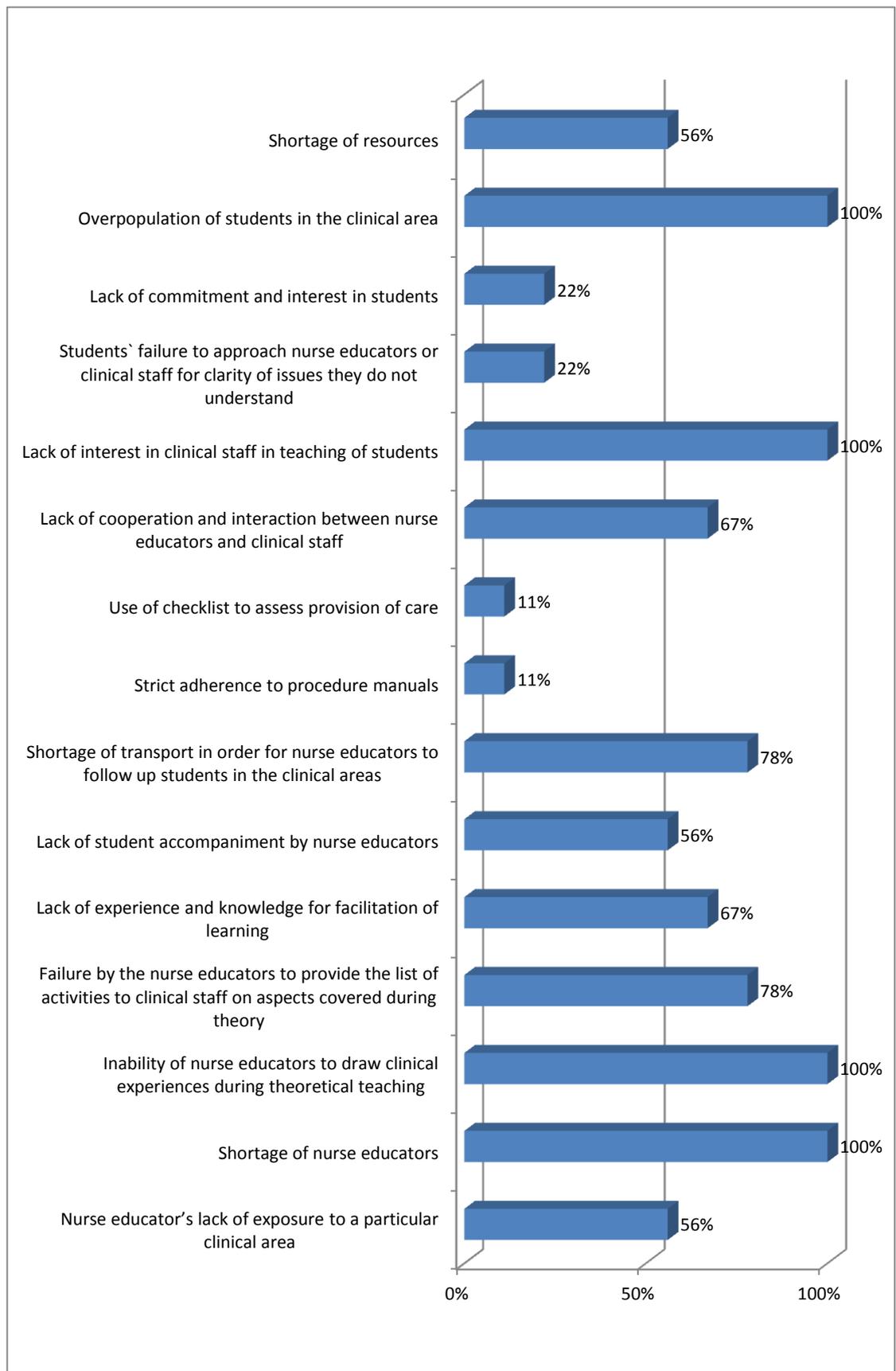


Figure 4.164 Opinions of nurse educators on factors that affect theory practice-integration

This open-ended question allowed nurse educators to describe the factors that affect theory and practice integration. Fifty six percent (n=5) of nurse educators indicated the factors that affect theory practice integration as nurse educator's lack of exposure to a particular clinical area, 100% (n=9) indicated shortage of nurse educators, 100% (n=9) indicated the inability of nurse educators to draw clinical experiences during theoretical teaching, 78% (n=7) indicated failure of nurse educators to provide the list of activities to clinical staff on aspects covered during theory, 67% (n=6) indicated lack of experience and knowledge for facilitation of learning, 56% (n=5) indicated lack of student accompaniment by nurse educators, 78% (n=7) indicated shortage of transport in order for nurse educators to follow up students in the clinical areas, 11% (n=1) indicated strict adherence to procedure manuals, 11% (n=1) indicated use of checklist to assess provision of care, 67% (n=6) indicated lack of cooperation and interaction between nurse educators and clinical staff, 100% (n=9) indicated lack of interest in clinical staff in teaching of students. 22% (n=2) indicated students' failure to approach nurse educators or clinical staff for clarity of issues they do not understand, 22% (n=2) indicated lack of commitment and interest in students, 100% (n=9) indicated overpopulation of students in the clinical area and 56% (n=5) indicated shortage of resources. The majority, namely 100% of nurse educators identified the factors that affect theory practice integration as shortage of nurse educators, inability of nurse educators to draw clinical experiences during theoretical teaching, lack of interest in clinical staff to teach students and overpopulation of students in the clinical area

4.5 CONCLUSION

This section presented and discussed the research results. Chapter 5 will present conclusions, limitations and recommendations of the study.

Chapter 5

Conclusions, limitations and recommendations

5.1 INTRODUCTION

This chapter concludes the study, discusses the limitations and gives recommendations for nursing education and further research.

The purpose of this study was to explore and describe the factors that affect theory-practice integration of student nurses at a selected nursing campus of a nursing college in the Limpopo province. The research questions that needed to be addressed were the following:

- What are the factors that affect theory-practice integration as viewed by the student nurses at a selected campus of a nursing college in the Limpopo province?
- What are the factors that affect theory-practice integration as viewed by the nurse educators at a selected campus of a nursing college in the Limpopo province?

The objectives of this study were to:

- Explore and describe the factors that affect theory-practice integration as viewed by the student nurses at a selected campus of a nursing college in the Limpopo province.
- Explore and describe the factors that affect theory-practice integration as viewed by the nurse educators at a selected campus of a nursing college in the Limpopo province.

The research design was quantitative, exploratory, descriptive, and cross-sectional in nature.

This chapter discusses the summary of the research findings, based on the research questions and objectives, which relate to factors that affect theory-practice integration of student nurses at a selected nursing college campus in the Limpopo province. The section also discusses the limitations of the study and recommendations for nursing education, nursing management and further research.

5.2 SUMMARY OF THE RESEARCH FINDINGS

This section summarises the findings based on the research objectives.

5.2.1 Factors that affect theory-practice integration as viewed by the student nurses

There were no significant differences between the responses of the different levels of student nurses, therefore the summary of the research findings will be inclusive of all the levels. According to the results of this study, the factors that affect theory-practice integration, as viewed by student nurses, are failure in BNS subjects, use of traditional teaching strategies, inadequate use of a simulation laboratory laboratory for skills demonstration, inadequate supervision and shortage of resources; other factors of importance were the nature of the assessment process and extent of interest in the subject.

5.2.1.1 Failure in biological and natural sciences (BNS) subjects

More than half (55%) of student nurses indicated that they had failed BNS subjects. Some 23% of student nurses also indicated that they had less interest in these subjects. BNS subjects are, however, important in providing the foundation for understanding theory and practice. If student nurses do not understand the scientific foundation of nursing, this may hamper their theory-practice integration. The reason given for their failure by 31% of the student nurses who had failed theory was that they did not understand the questions put to them during the examination. This could be attributed to the fact that the majority (97%) of student nurses do not have English as their mother tongue. The nurse educators also do not have English as their mother tongue but they may all speak English. The medium of instruction is English and therefore failure to comprehend what is taught could affect theory-practice integration.

5.2.1.2 Use of traditional teaching strategies

Many, namely 26% and 44% of student nurses revealed that the common teaching strategies used for theory were small-group discussions and demonstrations respectively; however, the majority of student nurses indicated that demonstrations were mostly used in clinical practice. From the list of planned activities which were available for learning by student nurses in the clinical area, the one chosen by the (28%) of student nurses was demonstrations. The use of traditional teaching strategies alone cannot match the use of concrete experience, reflective observation, problem solving, critical thinking and decision-making skills in line with Kolb's Experiential Learning Model. The lack of innovative teaching strategies may hamper the students' ability to integrate theory and practice.

5.2.1.3 Inadequate use of simulation laboratory for skills demonstration

Some 14% of student nurses indicated that they had passed proficiency tests in general nursing science as a clinical subject, and 82% of student nurses indicated that the subject that was receiving attention during simulation was general nursing science. The majority of skills performed in the simulation room were in fact highlighted by student nurses as general nursing science skills. The findings reveal that emphasis is placed on general nursing science to the detriment of other subjects, such as psychiatric nursing science, community nursing science and midwifery. These findings are further supported by the fact that when student nurses were asked to cite a scenario in which they were able to integrate all disciplines to provide comprehensive patient care, the majority (72%) of student nurses had no opinion on what the question required. This could imply that the factors above are some of those that interfere with integration of theory and practice.

5.2.1.4 Inadequate clinical supervision

Although the majority (90%) of student nurses were supervised during clinical placements, many (48%) of them were orientated and 46% clinically supervised by senior professional nurses in the wards as compared to nurse educators and clinical preceptors. Senior professional nurses might sometimes not be able to guide and

support student nurses as required because they are entrusted with patient care as their priority.

Nurse educators are responsible for theory, and the fact that they are not always responsible for orientation and supervision clinically may hamper integration of what is learned in the classroom and the realities of practice. The majority (60%) of student nurses gave the reason provided by nurse educators for their unavailability for supervision as a heavy workload. Fifty percent of student nurses further cited workload as the reason why clinical preceptors were also not always available.

The findings actually revealed that 56% of nurse educators had four blocks per academic year. All the nurse educators indicated that a block was allocated four weeks, and 56% of nurse educators indicated that they had 31-45 periods per block. Twenty-six per cent of nurse educators indicated that they were supervising student nurses for 9-10 hours per week and they were all teaching one subject per academic year. It was therefore not clear why nurse educators experienced heavy workload as a reason for not being able to give quality supervision clinically. The majority (60%) of student nurses regarded clinical supervision as a tool that motivates student nurses to learn more.

5.2.1.5 Shortage of resources

More than half (55%) of student nurses indicated that resources were not adequate during their clinical placement. Twenty-five percent of student nurses and 100% of nurse educators indicated patient material e.g. over-use of patients for clinical practice for learning as a stumbling block for clinical practice. Nineteen percent of student nurses responded that there were not enough clinical preceptors as human resources for clinical supervision, followed by some (17%) who indicated that nurse educators equally with Doctors were not adequate. Adequate resources at ward level are necessary as they maximise exploitation of all learning opportunities and in the process help students to integrate theory and practice.

5.2.1.6 Assessment

Just more than half (51%) of student nurses indicated that formative clinical assessment was done by nurse educators and further revealed that formative assessments were

done periodically, which contributes to a lack of continuity that may affect theory-practice integration.

5.2.1.7 *Interest in the subject(s) being taught*

Some 28% of student nurses indicated that they were interested in a subject when they were able to apply the theory in practice. Thirty-two percent of student nurses further indicated that nurse educators who used practical examples during theoretical instruction encouraged them to like a particular subject. On the other hand, 19% of student nurses liked a subject least when nurse educators did not use interesting ways of teaching. This therefore implies that interest in a subject and thus ability to relate theory to practice can be affected by uninspiring teaching methods.

5.2.2 Factors that affect theory-practice integration as viewed by nurse educators

The factors that affect theory-practice integration as viewed by nurse educators are: inability to draw on clinical experiences during theoretical teaching, use of traditional teaching strategies, shortage of resources, overpopulation of student nurses in the clinical area, negative attitude of staff, and differences between simulated skills and actual clinical procedures in the ward.

5.2.2.1 *Inability to draw on clinical experiences during theoretical teaching*

All (100%) of nurse educators indicated that they were able to discuss experiences of the clinical situation with students during theoretical instruction. In addition 78% nurse educators further stated that they presented clinically related case studies in class pertaining to the lesson being presented. But when the nurse educators were asked to give their opinion on factors that affect theory-practice integration, 100% of them indicated that theory-practice integration was affected by their inability to draw on clinical experiences during theoretical teaching. These findings could be related to the fact that 45% of the nurse educators had less than five years' experience in teaching and might not have the necessary knowledge and skills for facilitation of learning. All (100%) of nurse educators who indicated that they did not like the subject they were teaching reported that they had not been given the opportunity to select the subject of

their choice. These factors may affect integration of theory and practice because the educators may lack the necessary skills required for effective facilitation of learning.

5.2.2.2 Use of traditional teaching strategies

The majority, 100% of nurse educators indicated lecture method as the teaching strategy used in theory whereas the majority, 100% indicated that “on the spot” teaching was the method used in clinical practice followed by 89% who indicated demonstrations. It was noted with concern that although the lecture method was indicated by the majority, 100% of nurse educators as the most preferred strategy for theoretical component, there was consistent agreement by both student nurses and nurse educators that 10-30% of time was spent presenting lectures.

5.2.2.3 Shortage of resources

Although 56% of nurse educators felt that their resources were sufficient for theory presentation, 44% indicated that the resources were not sufficient, and all the nurse educators (100%) stated that counsellors for student counseling were inadequate. Seventy-five percent of nurse educators indicated that textbooks were also not adequate. Lack of textbooks will naturally affect the students’ ability to develop abstract conceptualisation skills. One of the factors cited by 100% of nurse educators as affecting theory-practice integration was a shortage of nurse educators. This finding is consistent with the responses of student nurses. Nurse educators are responsible for facilitation of learning, therefore a lack of nurse educators in both theoretical and clinical subjects may contribute to inadequate clinical supervision. This affects theory-practice integration, as there will be no one to guide and support student nurses and they will be left alone to draw the links between theory and practice.

5.2.2.4 Overpopulation of student nurses in the clinical area

All nurse educators (100%) indicated overpopulation of student nurses in the clinical areas as an important factor that affects theory-practice integration. The student nurses confirmed the statement to the nurse educators. If clinical facilities are overcrowded, there will be competition for clinical opportunities and some students may not be able to achieve the learning outcomes.

5.2.2.5 Negative attitude of ward staff

Problems reported to 100% of nurse educators by student nurses were the negative attitude of ward staff and lack of interest by ward staff in teaching students. The inability of ward staff to teach student nurses affects theory-practice integration because the students spend much more time with professional nurses than with nurse educators. Teaching is an indispensable role of every professional nurse.

5.2.2.6 Differences between the simulated skills and the actual clinical procedures in the ward

The majority (67%) of nurse educators, as compared with 48% of student nurses, indicated that there were differences between the simulated skills and the actual clinical procedures in the ward in terms of the procedural way of doing the skill. Nurse educators cited the reasons as procedures not being followed in the ward due to lack of resources, and equipment used in the college being outdated. They pointed out that the affective domain was not measured during simulation.

5.3 RECOMMENDATIONS

Based on the findings, the following recommendations are made for nursing education, nursing management and further research:

5.3.1 Nursing education

- English language courses should be foundational in all curricula where English is the second language of the students, in order to enhance comprehension skills.
- Nurse educators who are recruited to teach BNS should specialise in the field and receive in-depth courses in the field. Nurse educators must integrate BNS during clinical accompaniment in order to stimulate interest and motivation for the student nurses who least liked the subject.
- In-service training and workshops should be conducted for nurse educators in utilisation of innovative teaching strategies that stimulate utilisation of concrete experiences, reflective observation, abstract conceptualisation and active participation to promote the desirable integration of theory and practice.

- Orientation of new, less experienced and less skilled nurse educators should be compulsory in areas such as facilitation of learning and using innovative teaching strategies such as portfolio of evidence, case studies and buddy-system where a more senior nurse educator mentors the neophyte educator.
- Adequate resources should be made available for knowledge and skills development, such as textbooks and computers.
- Nurse educators, clinical preceptors and professional nurses should plan together processes and strategies used for student assessment so that staff responsible for student education and training is familiar with the whole evaluation process.
- Nurse educators must accompany students in the real clinical setting in order to encourage professional nurses to exhibit skills in the correct manner, and also to observe the equipments that are in current use in the clinical setting so that the simulation is realistic to the clinical environments.
- Formative assessment should be done on a continuous basis by conducting student accompaniment on a regular basis.
- Student nurses should be exposed to the simulation laboratory for all the disciplines.

5.3.2 Nursing management

- Orientation and supervision of student nurses in the clinical area should be the joint responsibility of nurse educators, clinical preceptors and senior professional nurses in the wards. There should be creation of additional posts so that nurse educators can have sufficient time for clinical supervision.
- Communication between the nursing college and clinical area should be encouraged in order to address such concerns as those raised by the student nurses relating to the negative attitude of ward staff and their lack of interest in teaching student nurses. Bilateral regular meetings should be planned in advance by the nursing college and clinical area.
- Clinical placements should be planned with the clinical staff and the nurse educators before the students are placed. Continuous monitoring is vital in order to avoid overpopulation in the wards by encouraging inputs from clinical preceptors, student nurses and professional nurses. Review of the clinical

placements should be ongoing in order to establish whether the clinical opportunities are still adequate for the number of student nurses placed in those facilities.

5.3.3 Further research

Further research could be conducted on the following topics:

- Replication of the same study in a different nursing college or campus, because the environment where education and training takes place is not the same and the study might yield different findings.
- An investigation of the factors that affect theory-practice integration of student nurses as viewed by professional nurses in wards

5.4 LIMITATIONS

- The study was conducted in a selected campus of a nursing college in the Limpopo province, therefore the findings cannot be generalised.
- Student nurses who had failed the 2009 standard examination were not part of this study as they were unavailable and busy with supplementary examinations during data collection.
- Many, namely (45%) of nurse educators who responded had less than five years of teaching experience.

However, in spite of its limitations, this study has provided important information on factors that could be useful for enhancing theory-practice integration.

5.5 CONCLUSION

If the nursing profession has to produce effective and capable nurses the gap between theory and practice must be closed. This study found that student nurses and nurse educators in the Limpopo province experienced problems in integrating theory into practice.