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TEACHING STRATEGIES FOR THEORY CONTENT IN AN OUTCOMES- AND PROBLEM-BASED NURSING EDUCATION PROGRAMME

A DISSERTATION BY

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ABSTRACT

The purpose of this study was to explore the extent to which teaching strategies for theory content were utilised by nurse educators at a nursing college in Gauteng to determine whether these strategies complied with an outcomes- and problem-based nursing education programme and, if problems were identified, to make suggestions with regard to the appropriate teaching strategies.

The aim of the study was to investigate what teaching strategies nurse educators utilised at a nursing college in Gauteng where an outcomes-based (OBE) and problem-based (PBL) nursing education programme was implemented. Teaching strategies used in the OBE approach are different from the traditional approach and nurse educators must master facilitation skills and guide learning of nursing students towards the attainment of outcomes, including critical cross-field outcomes such as problem-solving skills and critical thinking skills. Critical cross-field outcomes are essential life skills that learners should possess by the end of a specific course.

A quantitative, non-experimental descriptive survey was used to explore the extent to which teaching strategies for theory content utilised by nurse educators at a nursing college in Gauteng, fit within an OBE and PBL nursing curriculum.

Data from the study showed that educational facilities not accessible to students, were also not available to the students. These included the following:

- Computer lab
- Internet
- Video conferences
- Teaching CD discs

It was also evident from the data collected that the respondents felt that library facilities were only available at another institution.

From the literature studied on OBE and PBL, it became clear that, for the successful implementation thereof, students require access to computers and the Internet and these facilities should be made available to students to encourage and enhance self-directed learning, as it is an important component of PBL.

The data collected clearly revealed that formal lectures were still very much utilised by nurse educators as a teaching strategy. This is a matter of great concern since formal lectures are of less importance in an OBE approach to learning. The data also indicated that nurse educators did not utilise research articles, which is again an essential part of OBE and PBL. On the other hand, the data were reassuring as it indicated that nurse educators utilised group discussions, small group activities and self-directed learning - all teaching strategies essential for OBE and PBL.

Nurse educators indicated that a lack of training and in-service training were reasons why they felt only moderately competent in utilising OBE and PBL teaching strategies. Some also felt only moderately competent due to the lack of facilities, resources and support.

Certain teaching strategies, such as PBL strategies, enhance critical thinking skills and assist in developing the learner's decision-making skills. Therefore, it is important for nurse educators to make use of OBE and PBL teaching methods when facilitating learning. The South African Nursing Council [(SANC) 1993] states that "the purpose of nursing education is to develop the learner on a personal and professional level to become an independent, knowledgeable, safe practitioner with analytical and critical thinking skills".

KEY WORDS

- Curriculum
- Critical cross-field outcomes
- Learning
- Outcomes
- Outcomes-based education
- Problem-based learning
- Theoretical teaching strategies

DECLARATION

I, **Angeline van Wyngaarden**, declare that this dissertation entitled **"Teaching strategies for theory content in an outcomes- and problem-based nursing education programme"** is my own work, and all the sources that I have used, or quoted, have been indicated and acknowledged by means of a complete reference.

This dissertation has not been previously submitted for any degree or examination to any other university.

ANGELINE VAN WYNGAARDEN

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Date

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CHAPTER 1

BACKGROUND TO THE STUDY

1.1 INTRODUCTION

According to the College of Educational Technology (COLET) (2003:1) outcomes-based education (OBE) was introduced in South Africa in 1994. The main reason for this change was because the education and training programmes in the past were too content-based. The government identified that South Africa had a shortage of skilled workers, and the traditional method of teaching was not preparing learners to attain skills which would allow them to become responsible citizens who could contribute to the socio-economic development of the country. The OBE approach was steered by the then Minister of Education, Sibusiso Ephraim Bhengu. “Learners would be guided, through the process of facilitation, to acquire knowledge and develop skills” (COLET 2003:1). Grobler, Warnich, Carrell, Elbent and Hatfield (2002:341) explain that, by implementing OBE, the national skills development strategy would be supported as stipulated in the Skills Development Act (97 of 1998). The aim of this Act is to develop the relevant skills of the South African workforce.

According to Grobler *et al.* (2002:341) the South African government passed the South African Qualifications Authority Act (SAQA) (58 of 1995) in order to rectify the enormous shortage of skilled manpower. The purpose of this Act is to improve the quality of education and training at all levels in the country. The Act provides for the development and implementation of a National Qualifications Framework (NQF) and is designed to give national recognition to learning. “The NQF makes provision for outcomes-based

education and training. It is a framework according to which standards and qualifications are registered" (Grobler *et al.* 2002:341).

Prinsloo (2003:2) believes that the implementation of OBE requires a major paradigm shift in educational and evaluation strategies. According to her, the training and education of nurse educators previously focused on the process of lecturing, and not on the facilitation of learning which is essential for the successful implementation of OBE. Nursing education had to change from the traditional teacher-centred approach to the new student-centred OBE approach. This change implied that different teaching strategies were utilised. One example of these teaching strategies was the PBL approach, an approach that enhances active student involvement and facilitates learning.

Nurse educators need to comply with the decisions made by Government and it is the nurse educators' responsibility to rise to the challenge and educate themselves regarding facilitation. The nursing school or college also has a responsibility in ensuring that the nurse educators employed are qualified and that quality assurance within the college is implemented effectively, with regular quality checks and evaluation of training provided by nurse educators.

1.2 RATIONALE/ BACKGROUND TO THE STUDY

It became evident from various discussions held with colleagues and managers at the South African Military Health Service (SAMHS) Nursing College – where this study was conducted - that nurse educators experienced problems with the implementation of OBE due to a variety of reasons. These include limited computer skills, a lack of training and unavailability or inaccessibility of library facilities, educational tools and the Internet. Learners were unable to utilise the library for up to date textbooks

and articles. They had no access to the Internet or recent articles and evidence-based practice was not implemented. The question asked is whether nurse educators can overcome this problem and still manage to utilise OBE teaching strategies in the classroom, or do they resort to traditional strategies?

Nurse educators at the nursing college where this study was conducted raised their concern that a large proportion of learners reaching their final year of nursing studies have difficulty solving patient care problems and even making specific decisions regarding their patients' care. These learners are also unable to formulate nursing diagnoses and/or develop nursing care plans. This lack of essential critical thinking skills is especially evident during the assessment of their assignments and tests, and during clinical formative assessments. The problem is that, as stipulated by SAQA, these skills form part of the critical cross-field outcomes that all learners must attain at the end of their course. If learners are exposed to OBE and PBL strategies, these skills could be developed throughout their four year training. OBE and PBL strategies include examples of patient studies, specific case studies and evidence-based practice.

The current nursing education programme - referred to as the curriculum - in use at the nursing college where this study was conducted, is an OBL and PBL curriculum. Since its inception in 2001 no attempt has been made to investigate the success of its implementation. It is important that teaching strategies utilised by nurse educators are appropriate for the specific curriculum implemented because they differ greatly from the traditional teaching strategies. This study will be conducted to establish whether nurse educators are utilising teaching strategies that comply with the OBE and PBL nursing education programme currently in use.

Certain teaching strategies, such as PBL strategies, enhance critical thinking skills and assist with the development of learners' decision-making

skills. Therefore, it is important that nurse educators make use of OBE and PBL teaching methods when facilitating learning. The South African Nursing Council (SANC) states that “the purpose of nursing education is to develop the learner on a personal and professional level to become an independent, knowledgeable, safe practitioner with analytical and critical thinking skills” (SANC 1993:3).

1.3 RESEARCH PROBLEM

Nurse educators at the nursing college where this study will be conducted are experiencing problems implementing theoretical teaching strategies into their education programme, which requires an outcomes-based and problem-based approach to facilitate learning.

1.4 PURPOSE OF THE STUDY

The purpose of this study is to explore the extent to which teaching strategies for theory content utilised by nurse educators at a nursing college in Gauteng comply with an outcomes- and problem-based nursing education programme, and to make suggestions with regard to the appropriate teaching strategies if problems are identified.

1.5 AIM OF THE STUDY

The aim of the study is to investigate which theoretical teaching strategies nurse educators are currently utilising at a nursing college in Gauteng where an outcomes- and problem-based nursing education programme is currently implemented.

1.6 RESEARCH QUESTIONS

The following questions will be addressed:

- Are nurse educators effectively implementing theoretical teaching strategies in an outcomes- and problem-based nursing education programme?

- Are nurse educators experiencing problems when implementing outcomes-based and problem-based teaching strategies?

1.7 OBJECTIVES OF THE STUDY

Considering the purpose and aim of this study the following objectives were formulated:

- Establish which teaching strategies have been planned for in the outcomes- and problem-based nursing education programme of a nursing college in Gauteng.

- Establish whether nurse educators use the teaching strategies planned for in the outcomes- and problem-based nursing education programme.

- Establish whether the planned teaching strategies comply with the outcomes- and problem-based nursing education programme.

- Establish the possible reasons why nurse educators are experiencing problems when implementing the outcomes- and problem-based nursing education programme.

1.8 SIGNIFICANCE OF THE STUDY

The significance of the study, especially for nursing education but also for nursing in general, is whether teaching strategies utilised are in line with the specific curriculum implemented by the nursing educational institution whereby students will greatly benefit and the standard of nursing education will increase. This will ensure highly qualified and skilled nursing practitioners within the clinical setting, which will ultimately improve patient outcomes. If it is established that the strategies used for teaching are not appropriate, recommendations to change the situation will be made which may improve nursing education and assist nurse educators to improve in the execution of their tasks.

1.9 CLARIFICATION OF TERMS

The following concepts will be used in this study and are clarified by means of definitions:

1.9.1 Curriculum

'Curriculum' is "planned learning experiences that the educational institution intends to provide for its learners" (Uys & Gwele 2005:xiv). According to Mellish, Brink and Paton (1998:83) "a curriculum is a planned educational programme for student nurses to enable them to achieve a specific goal, namely registration (or enrolment)".

1.9.2 Critical cross-field outcomes

"Critical cross-field outcomes are broad, generic and cross-curricular outcomes. These outcomes lay the foundation for developing more specific outcomes" (Olivier 1998:22).

"Critical outcomes mean those generic outcomes, which inform all teaching and learning, and critical cross-field education and training outcomes has a corresponding meaning" (SAQA: 1995).

1.9.3 Learning

According to the Collins English Dictionary (1979:847) "learning is knowledge gained by study, instruction or scholarship, the act of gaining knowledge. Learning can also be seen as any relatively permanent change in behaviour that occurs as a direct result of experience".

Knowles, Holton and Swanson (1998:17) refer to 'learning' as the "process of gaining knowledge and/or expertise".

1.9.4 Outcomes

"Outcomes are the results of learning processes and refer to knowledge, skills, attitudes and values. Learners should be able to demonstrate that they understand and should be able to apply the desired outcomes within a certain context, such as a certain subject or learning area" (van der Horst & McDonald 1997:48).

1.9.5 Outcomes-based education (OBE)

Outcomes-based education is described by Uys and Gwele (2005:xiv) as a "competency-oriented, performance-based approach to education, which is aimed at aligning education with the demands of the workplace, and at the same time develops transferable life skills, such as problem-solving and critical thinking skills".

1.9.6 Problem-based learning (PBL)

Problem-based learning refers to “an approach to learning and instruction in which students tackle problems in small groups, under supervision of a teacher or facilitator” (Uys & Gwele 2005:xiv).

1.9.7 Theoretical teaching strategies

“Teaching strategies are the approaches and strategies which may be used to teach and learn the practice of nursing” (Mellish *et al.* 1998:97).

1.10 ORGANISATION OF THE STUDY

The study consists of five chapters. Chapter 1 is an in-depth introduction to the study in which the rationale for and background to the study are explained. Keywords in the study are also listed in Chapter 1.

Chapter 2 is the literature review. Relevant literature on OBE, PBL, critical thinking and self-directed leaning (SDL) are explored. Different studies which had been conducted previously are explored and documented.

Chapter 3 is the research design and research methodology. The design, instrument and method used are explained in detail. The researcher also explains the ethical considerations in this chapter.

Chapter 4 is the data analysis. The researcher will take the reader through the analysis of the captured data. Tables, pie diagrams and figures will be used to enhance the reader’s understanding. The results will be analysed and compared to findings in the literature.

Chapter 5 is the conclusion. Concluding remarks about the study are put forward. The research questions are re-evaluated against the data obtained and recommendations for future or further research are made. Limitations of the study are brought to light.

1.11 CONCLUSION

In an attempt to find answers to the research questions, it is the researcher's aim to gain information and elicit understanding from the literature reviewed as well as from the responses of the participants to the questionnaires.

The education and training received by nursing students has an effect on their future as registered nurses in the clinical setting. It is in the clinical setting where nurses encounter problems and are faced with making clinical decisions. With the shortage of medical practitioners in provincial hospitals and primary health care clinics, it is essential that nursing students be taught to be confident, autonomous and independent and be able to make sound decisions when faced with real-life situations.

According to the literature reviewed, students from an OBE and PBL based nursing education programme are autonomous, independent learners who engage in self-directed learning. It is thus essential that nurse educators utilise PBL teaching strategies to develop the student's ability to think critically, make sound decisions based on facts and engage in life-long learning. All these are vital qualities needed of all registered nurses who are challenged on a daily basis with difficult situations in the clinical setting.

Registered nurses must be able to practice as independent, safe and competent nurses and the researcher believes that, through innovative education and training methodologies, this is possible. Certain teaching

strategies, such as PBL strategies, enhance critical thinking skills and will assist in developing learners' decision-making skills. Therefore, it is important that nurse educators make use of outcomes- and problem-based (OBE and PBL) teaching methods when facilitating learning.

CHAPTER 2
LITERATURE REVIEW

2.1 INTRODUCTION

Williams (2001:85) explains that the aim of nursing education programmes is to prepare competent, professional nurses who will successfully make the transition to professional practice. Society also demands continued professional accountability for competence. One way in which to meet this demand is for every professional nurse to engage in life-long learning (Williams 2001:85). It was Florence Nightingale (in Williams 2001:86) who first wrote that "we should be learning all our lives". *Life-long learning* implies that continuing professional learning needs to be self-directed and the nursing education programme should be designed to encourage the development of these abilities. She notes that "problem-based learning (PBL) has been identified as one way to facilitate the development of abilities to become self-directed in learning" (Williams 2001:86). The profession of nursing has a long history of recognising the need for continuing learning.

According to Uys and Gwele (2005:194) "outcomes-based education (OBE) is a competency-oriented, performance-based approach to education which is aimed at aligning education with the demands of the workplace, while at the same time developing transferable life-skills, such as problem-solving and critical thinking skills". Tracy, Marino, Richo and Daly (2000:241) are of the opinion that nursing students can no longer rely solely on textbooks and expert faculty knowledge to provide them with solutions to complex problems. Nurse educators must provoke in students the desire for life-long

learning by emphasising the importance of mastering technologies, for example, computer skills and utilising the Internet, that will help them manage the information explosion that characterises the global workplace. Prinsloo (2003:2) adds that nurse educators should utilise a variety of student-centred teaching strategies, for example the PBL approach that enhances active student involvement and facilitates learning.

2.2 OUTCOMES-BASED EDUCATION (OBE)

Van der Horst and McDonald (1997:7) describe outcomes-based education (OBE) as an approach which requires educators and learners to focus on the desired results of each learning process, and the instructive and learning processes that will guide students to attain these results. Educators are required to use the learning outcomes as the focal point when they make instructional decisions and plan their lessons. OBE emphasises what the learner should be able to do on completion of a learning event. In OBE the educator is regarded as a facilitator rather than a mere presenter of knowledge. In this capacity, it is the educator's responsibility to facilitate the learner towards the achievement of the outcomes. "The learner is an active and interested participant in the learning process" (van der Horst & McDonald 1997:13).

Jacobs, Gawe and Vakalisa (2002:3) note that the major thrust of the OBE approach is that, at micro-level, the emphasis is on what learners can do, or the competencies they should demonstrate as a result of the learning they have undertaken. At macro-level, all learning must be geared towards the attainment of critical cross-field outcomes, also referred to as the *exit outcomes.*

Van der Horst and McDonald (1997:28) state that, according to the Department of National Education, the education system changed from a

content-based to an outcomes-based approach. Content-based education focuses on the content that is taught, and directs and informs all teaching-learning activities. Uys and Gwele (2005:206) explain that, with OBE, the nurse educator needs to accept her role as facilitator and guide the way students learn by utilising a variety of teaching or learning strategies. *Hands on* learning (learning through experience) is an example of one such strategy. Learners must be encouraged to utilise, for example, videotapes, interactive CDs and demonstrations. They add that nurse educators should refrain from only making use of the traditional method of teaching, namely lecturing where the educator is in control of the learning event and is conveying knowledge to passive recipients

2.2.1 Learning outcomes

Outcomes diversify in two directions, namely critical outcomes and specific outcomes (Olivier 1998:16). In accordance with the SAQA Act (1995) learners who meet the criteria for achieving a specific set of outcomes will qualify for a credit of kind. To qualify for a credit, learners should be capable of demonstrating that they can achieve the following outcomes at specific levels:

- Critical cross-field outcomes: These outcomes are designed by SAQA and apply to all the learning areas

- Specific outcomes: These outcomes draw on specific knowledge and skills displayed in a particular context.

Advocates of OBE agree that “an *outcome* is a successful demonstration of learning that occurs at the culminating point of a set of learning experiences” (van der Horst & McDonald 1997:21). They define the term *culminating* as “the completion point of a segment of a curriculum, with regards to what the learners can ultimately do, once all formal instruction is

over and the skills can be synthesized and applied successfully" (van der Horst & McDonald 1997:21).

2.2.2 Importance of OBE

There are many advantages to developing or using a nursing education programme based on clearly stated outcomes (van der Horst & McDonald 1996:15). Firstly, careful planning is vital for successful teaching. In OBE educators are forced to plan and prepare with a clear instructional purpose in mind. The learning outcome guides the educators' content selection and strategic planning. Furthermore, by knowing what is expected of them, learners can measure their own achievements, and they feel in control of their own learning. Self-assessment is thus an integral part of a successful OBE programme. Schools, too, can accurately monitor the learners' progress in terms of specific learning attainments through OBE. In a nutshell, OBE means that there must be proper and effective management and strategic planning for results. What is taught and how it is taught must be based on the outcomes to be achieved (van der Horst & McDonald 1997:15).

2.2.3 Difference between OBE and traditional training methods

Olivier (1998:3) assesses that OBE differs from traditional content or competency-based learning in the sense that the latter is mainly content/skills driven and teacher/trainer centred. He points out that content-based learning is aimed at the mastering of knowledge, as the topics of a subject are unpacked into a syllabus. Sources of information are mainly textbooks and the lecturers and/or educators themselves. Competency-based training, on the other hand, is based on the identification and listing of the generic competencies for a specific job or a range of job activities at a specific level. With OBE the learning process is learner-driven and aimed at achieving outcomes. Knowledge and skills can be drawn from any source,

and the role of the educator or facilitator changes accordingly to provide guidance for the learners. By guiding them through specific learning procedures which are connected to real-life situations, educators can help learners to achieve their outcomes.

The aforementioned implies that educators should not teach but rather facilitate learning by stimulating creativity, self-learning and critical thinking (Olivier 1998:3) Accordingly, the nature and extent of the roles and functions of educators, who facilitate OBE learning, should be redefined in order to align these with outcomes-based real learner-centred learning. Within a content-based system most of the learning time is used to master as much content as possible, while with competency-based learning most of the time is devoted to the practice of competencies (Olivier 1998:27).

A study done by Jeffries, Rew and Cramer (2002:19) compared student-centred to traditional methods of teaching basic nursing skills. Although both student groups were generally satisfied with the learning methodology, the student-centred group was significantly more satisfied with a student-centred learning approach than their counterparts in the traditional learning mode

Prinsloo (2003:iv), who examined the utilisation of teaching strategies that enhance PBL according to the requirements of OBE at two nursing colleges in the Pretoria area in Gauteng, found that nurse educators were in general well- trained for their facilitation task and that they utilised OBE strategies. Prinsloo encountered problems during the data collection phase and had a return rate of only 30% on questionnaires. That brought about a certain degree of doubt of whether the study results could be generalised to the larger population. A study done by Miller (2003:550) where the student outcomes following PBL instruction versus traditional instruction learning in graduate pharmacology course were compared, suggests that, though PBL

may be at least as effective as traditional lectures, it should be explored in larger studies.

2.3 PROBLEM-BASED LEARNING (PBL)

According to Uys and Gwele (2005:127) problem-based learning (PBL) can be defined as "an approach to learning and instruction in which learners are able to tackle problems in small groups under the supervision of an educator". They emphasise that the educator is a guide to learning or a facilitator of learning and that learning is the responsibility of the student. It is further maintained by them that the role of knowledge transmitter (traditional approach) is no longer appropriate but must change to that of facilitator in the use and development of problem-solving skills. Students determine the goals of the educational encounter within a PBL approach and they are guided to gather and construct knowledge efficiently. Learning in PBL is the responsibility of the learner. According to Uys and Gwele (2005:131) most authors conclude that students who graduate from a PBL curriculum are more likely to be better prepared for practice than those graduating from a traditional curriculum.

Though many studies have been conducted and much information has been documented regarding PBL as a teaching approach in the nursing curriculum, specific comparisons between PBL and traditional methods are limited. According to Alexander, McDaniel, Baldwin and Money (2002:248) PBL has, since its development in the 1960s, become increasingly prominent in nursing education. Alexander *et al.* (2002:248) studied PBL in an undergraduate nursing curriculum for more than three years. 'How to get started' was identified by them as one of the key factors influencing the implementation of PBL as a teaching approach. Initiating PBL requires alterations in the classroom environment and the establishment of a suitable library.

Hsu (2004:510) studied the effects of adopting concept mapping in PBL scenario discussions on the improvement of students' learning outcomes in a nursing course and concluded that concept mapping is an effective teaching strategy for developing students' critical thinking skills and problem-solving abilities. The application of PBL in nursing education should prepare students to deal more effectively with difficult patient problems and ever-increasing scientific and nursing knowledge (Hsu 2004:511). This study indicated that the experimental group seemed to develop stronger concept mapping abilities than the control group.

The role of the nurse educators in facilitating PBL was investigated by Haith-Cooper (2003:65-71). It was concluded that, the way in which the nurse educator facilitates PBL, impacts on the success of the process and, therefore, also on the students' learning. The following themes and their implications on the role of the tutor in facilitating PBL were identified in the study:

- Knowing when to intervene in the PBL process. Educators believed that the single most important factor controlling intervention was time.

Specific ways in which educators intervened to address issues in the group:

1. Questioning: All the educators felt that part of their facilitative role was to intervene by using questions.

2. Situations were identified when some educators would intervene to provide the learners with information - although some educators' opinions differed greatly regarding this since the philosophy of PBL involves the learners being responsible for discovering their own knowledge.

3. Surveying the group: This involves stopping the process and asking individual learners about his or her opinion with regard to the content under discussion.

4. Describing: When the educator describes to the group what he or she sees is happening in the learning process.

5. Reminding and reflecting: Educators frequently remind learners of certain issues to help steer them back onto the right track.

- Modelling was used to facilitate psychomotor skill development in learners.
- Educators felt that, for facilitation to be effective, they needed to place their trust in the process of PBL.

- Observing learners' non-verbal communication and the educator's non-verbal communication could influence PBL.

- Changing facilitation styles according to group maturity.

According to Biley and Smith (1998:1022) the main concern is that any PBL programme should produce autonomous graduates who are able to identify what they do not know and, while planning how to rectify the situation, become actively involved in decision-making and the production of creative solutions in any given situation. This approach is very different from the traditional teacher-centred approach which relies on the idea that learners passively absorb received information. Such a method does not encourage students to participate and thus obtain a deep understanding of the subject that they are learning.

Twelve practicing graduate nurses were interviewed by Biley and Smith (1998:1021-1027) on their perceptions of a PBL programme and the programme's effectiveness in preparing them for the reality of their profession. This ethnographic study appeared to suggest that graduate nurses from a PBL programme have a strong sense of responsibility for their own learning, are adaptable to change, are innovative and are autonomous, proactive professionals.

Woodward and Ferrier (in Biley & Smith 1998:1022) interviewed medical graduates of the McMaster University PBL programme in Canada and compared the findings with those obtained from graduates of a medical school which used more traditional forms of education. It was found that the McMaster graduates perceived themselves to be better equipped in competencies such as problem-solving, critical evaluation and self-directed learning than their traditionally prepared colleagues.

Rideout, England-Oxford, Brown, Fothergill-Bourbonnais, Ingram, Benson, Ross and Coates (2002:3-14) conducted a study with the aim of comparing problem-based and conventional curricula in nursing education. The findings suggest that PBL is an effective approach for educating nurses and it indicates that the nursing students in a PBL programme reports higher levels of satisfaction. Satisfaction was particularly evident in relation to the level of independence afforded to the students in the PBL programme, the relationships with the faculty that were described as supportive and positive, and the outcomes achieved - especially the ability to solve problems and communicate with others. Problem-based, self-directed learning is an educational approach that is believed to facilitate the development of these abilities, hence the increasing interest by schools of nursing in adopting this approach.

Pastirik (2006:261) states that nurse educators recognise PBL as an effective alternative to traditional, teacher-centred teaching methods. PBL

requires students to work in small groups to identify and resolve clinical problems. She states that, although PBL has gained popularity, there are challenges to implementing this method in conventional course-based curriculums due to lack of additional educators to facilitate the small groups. Furthermore, little is known in nursing education regarding the effectiveness of teaching PBL in large groups. By studying the use of PBL in a large classroom with one educator augmented by an on-line course website, the findings of her study illustrated an overall positive experience by the students. “The use of PBL in a large group had the added benefit of multiple perspectives resulting in enhanced depth and scope of scenario-related information” (Pastirik 2006:261). However, in the study one limitation was identified by a small number of students : some group members did not pull their weight and other group members had to do more to make up for it. Some students also found it intimidating and stressful to present to the large group (Pastirik 2006:265). Nelson, Sadler and Surtees (2005:104) agree and note that a weakness of PBL is that it relies for its success on group dynamics and this can present problems - especially since group co-operation and cohesiveness have been identified as significant factors in the learning process.

“PBL teaching methodologies demonstrate the complementary nature of theory and practice in that they promote conceptual understanding, development of reasoning skills and self-directed learning strategies” (Creedy & Hand 1994:696). The process of PBL as described by Creedy and Hand (1994:697) involves the introduction of a problem in a way similar to its presentation in the clinical setting. Students work with the problem in a manner that encourages reasoning abilities through a logical problem-solving approach to manage real-life difficulties. Practical knowledge is challenged and evaluated, resulting in the identification of individualised learning needs and directions for further study. The skills and knowledge acquired by this study are applied back to the problem, to evaluate the effectiveness of learning. The new knowledge gained through working with

the problem and in the self-directed study is summarised and integrated in the students' existing knowledge and skills. Students are encouraged to be active participants in their own learning, so they will construct knowledge instead of being passive receptors of knowledge.

2.4 SELF-DIRECTED LEARNING (SDL)

Levett-Jones (2005:364) claims that self-directed learning (SDL) increases students' confidence in, and capacity for, independent learning within dynamic and challenging educational and work environments. The ability to learn on one's own has become a prerequisite for living in a dynamic world of rapid change. Education or learning must now be defined as a life-long process and SDL is thought to be the means by which life-long learning may be facilitated. Knowles (in Levett-Jones 2005:364) suggests that the main purpose of education is to develop independent skills of inquiry and to learn to exploit every educational experience, both in formal educational settings and in everyday life. He also suggests that SDL is not appropriate in a number of situations, for example, when the student is new to the subject or has little previous experience. The principles of SDL and the student's ability to be self-directed are important aspects in recent educational approaches such as PBL and enquiry-based learning.

Maslin-Prothero (2005:662) argues that SDL is an essential medium for nursing students to develop independent learning skills and a commitment to life-long learning. According to the author the following factors contribute to the increased need for a stronger emphasis on critical thinking and life-long learning among professional health care workers: rapidly evolving technology, increasing clinical complexity in many patient care settings, advances in treatment and the emergence of new diseases.

Since the effect of PBL on SDL among students had not been studied previously, Ozuah, Curtis and Stein (2001:669) conducted a study to examine the effect of a PBL curriculum on SDL behaviour among a group of paediatric residents. Residents exposed to PBL engaged in significantly higher levels of SDL than their counterparts. PBL seeks to increase the motivation for SDL by presenting a relevant problem to a group of learners. The process of solving the problem requires that members of the group engage in independent reading and research.

Pedley & Arber (1997:405-409) conducted a study to evaluate the effectiveness of a student-centred module of learning using Jarvis' experiential framework. The positive evaluation of this module demonstrates that it can be used effectively. It was found that the process of experiential learning shares similarities with self-directed inquiry, problem-solving, decision-making and research processes. Therefore, experiential learning may offer a conceptual bridge between these and aid the transfer of learning. Self-direction is also an essential element in enabling potential practitioners to continue developing the skills necessary in a continuously changing environment.

2.5 FACILITATION OF LEARNING

The goal of facilitated learning in nursing education is to produce a competent theoretical nurse and, because nursing is a practice-based profession, nursing education should also produce a practical nurse. Hence, facilitation occurs in the classroom and the clinical setting (Lekalakala-Mokgele & du Rand 2005:26). The College of Educational Technology (COLET) (2003:11) emphasises the role of the nurse educator as a person who facilitates learning, and stresses that this is a new approach to follow in OBE and training. A learning facilitator provides guidance and gives support to both individuals and groups to reach certain learning outcomes. Sharing

of knowledge and experience is important; nurse educators should not consider themselves as specialists who have all the knowledge and skills. They should facilitate the process of learning.

Lekalakala-Mokgele and du Rand (2005:22) developed a model for facilitation in nursing education based on the identified needs of facilitators and students. They studied facilitation in-depth. According to them, because of the fact that higher education is both under internal and external pressure to change, nursing education is also forced to change. Evidence of this change is the transfer of hospital-based to community-based education and the introduction of non-traditional methods such as PBL, community-based education and inquiry-based learning.

Facilitation requires that learners assume control and direct their own learning, and is based on the principles of adult learning and requires the involvement of both the learners and their facilitators (Lekalakala-Mokgele & du Rand 2005:23). Knowles (1980:58) supports this by stating that nursing learners are regarded as adults and adult learning is characterised by the following principles:

- Adults are capable of self-direction.
- Adults need to recognise the purpose of learning or the need to learn.
- Adults learn from their own life experiences.
- Adults learn best if learning is task-, problem- or inquiry-centred.
- Adults will learn when they are ready.

- Adults are motivated to learn by growth, accomplishment, curiosity and self-esteem.

The following recommendations, based on the findings of their research, were made by Lekalakala-Mokgele and du Rand (2005:27):

- Facilitators should be prepared for their facilitation role and should commit themselves to a paradigm shift of relinquishing classroom control and adapt to a student-centred approach.

- Facilitators must have facilitative personalities characterised by openness, warmth, patience and flexibility to enable learning to take place.

- Learners should be given support during the learning process.

- Nurse educators should continuously revise the method of learning and shift from traditional methods of learning to self-directed learning.

2.6 CRITICAL THINKING (CT)

Beekman (2000:7) is of the opinion that critical thinking (CT) skills can enhance the education of nurses and the practice of nursing by empowering them with knowledge of general problem-solving and decision- making skills. Not only can these skills be applied by learners in everyday life, but also in nursing to promote better patient care.

In recent years the skill of CT has become an increasingly prominent component of clinical nursing practice and nursing education. In a study conducted by Kawashima and Petrini (2004:286-291) regarding the critical thinking skills in nursing learners and nurses in Japan, the findings

emphasised the need for nurse educators to study approaches to develop critical thinking skills. The researchers concluded that nurse educators need to be more flexible and open-minded to reflect on their use of traditional teaching methods and routine practices so as to improve CT in learners. To promote CT, nurse educators also need to develop different communication patterns within faculties when planning courses, teaching activities and clinical experiences.

Profetto-McGrath (2003:569-575) holds that professional nurses require CT skills to succeed in fast-paced and complex modern environments. According to them CT is the ability to ask relevant questions and analyse solutions without necessarily offering alternatives. The results of a study done by Profetto-McGrath indicated that most learners had adequate levels of CT skills and CT disposition, and that these relate positively and significantly to one another. Yet, learners need continued development in these areas. Nurse educators must implement a variety of strategies to promote CT skills and CT disposition. These include: debates, reflective journals, analytical and position papers, role modelling, Socratic questioning, concept maps and research projects.

Van der Horst and McDonald (1997:48) explain that SAQA sets out the South African critical cross-field outcomes by taking into consideration the values and vision of the South African constitution. These outcomes form the foundation for the description of more specific outcomes. There are seven critical cross-field outcomes that have been accepted by SAQA and they lay the foundation for developing specific outcomes. Nurse educators must ensure that these outcomes are planned for within the nursing education programme. These are important life-skill outcomes that learners must ultimately attain by the end of the year or course.

According to the SAQA Act (1995) critical outcomes include, but are not limited to, the following:

- Solve problems by using critical and creative thinking skills.
- Work effectively with others.
- Manage themselves and their activities responsibly and effectively.
- Collect, analyse, organise and critically evaluate information.
- Communicate effectively.
- Use science and technology effectively.
- Demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exist in isolation.

Williams (2000:27) conducted a review study of published literature related to nursing, health science education and professional education from 1983-2000. Findings from his study show that professional education scholars agree that specialised knowledge is clearly essential for professional practice, however, they also suggest that self-consciousness (reflection) and continual self-critique (critical reflection) are crucial to continued competence. In health care, PBL based on constructivism, has been identified as one way to facilitate the development of these skills.

According to Distler (2007:55) CT in nursing is an essential component of professional accountability and quality nursing care. Critical thinkers display the following habits of the mind: confidence, contextual perspective, creativity, flexibility, inquisitiveness, intellectual integrity, intuition, open-

mindedness, perseverance and reflection. A study done by Williams (2000:27) also illustrates that nursing students exposed to PBL develop the ability to be reflexive and critically reflective in their learning and acquire the knowledge and skill within the discipline of nursing. According to Williams the students' ability to be both reflective and critically reflective in their learning is developed by critical questioning of the nurse educator during situational analysis, learning need determination, application of knowledge, critique of resources and personal problem-solving processes and summarising what was learned.

2.7 CONCLUSION

Olivier (1998:72) emphasises that OBE implies that the nursing education programme's developmental process should start with the intended learning outcome, followed by the knowledge, skills and processes that must be mastered in order to achieve the intended outcome. Thus, OBE implies that learners must demonstrate the achievement of an outcome as well as the processes which were followed. This implies that, from the onset, the curriculum design must be result- and not content-driven, and designed to support learners to develop in a holistic manner as they progress in achieving outcomes.

OBE requires that a learner demonstrates competence in a skill after having successfully completed a course. In other words, skills should not only be theoretical knowledge but also knowledge applied in the practical situation. Thus, qualifications and standards registered according to the NQF are described in terms of the learning outcomes that the qualifying learner is expected to have demonstrated. Olivier (1998:72) advises that learners be assessed continuously to evaluate if they have attained outcomes. Nurse educators should be facilitating learning and guiding learners towards the attainment of outcomes. The student is required to take responsibility for his

or her own learning. Much more attention is placed on problem-solving skills, especially in the practical situation, to enable learners to apply their knowledge. “Outcomes-based education and training is meant to enable each learner to accomplish knowledge and skills as well as mastering processes necessary to accept the challenges and opportunities of the world of the future” (Olivier 1998:72).

Van der Horst and McDonald (1997:6) maintain that the outcomes-based approach in education in South Africa is aimed at developing a thinking, problem-solving citizen who will be empowered to participate in the development of the country in an active and productive way. This is typical of a social-reconstructionist view of education according to which education is regarded as a way to change and improve society. According to van der Horst and McDonald (1997:6) whether this will actually happen, will depend on the knowledge, expertise and motivation of the classroom educators in South Africa. It will also depend on the willingness of learners to take the responsibility to be active learners.

The implementation of student-centred strategies requires a great deal of effort prior to their introduction into a curriculum. Therefore, it is recommended that nurse educators become knowledgeable in PBL and initiate the changes consistently. Even though more time is required in the beginning, the satisfaction and clinical confidence that students receive is well worth the effort. Continuing to use PBL and student-centred strategies is of utmost importance (Distler 2007:58).

The literature supports the notion that it is essential for professional nursing practitioners to engage in continuous professional education. PBL is an excellent teaching strategy that will produce nursing students that are autonomous, will take responsibility for their learning and realise the importance of life-long learning to ensure that they remain competent professionals.

CHAPTER 3
RESEARCH DESIGN AND RESEARCH METHODOLOGY

3.1 INTRODUCTION

Chapter 3 will focus on the research design, the research instrument, validity and reliability of the research instrument. This chapter explains how data were collected and the method used for data analysis. The researcher also explains the ethical considerations involved in this study.

3.2 RESEARCH DESIGN

A quantitative, non-experimental descriptive survey was used to explore the extent to which theoretical teaching strategies utilised by nurse educators at a nursing college in Gauteng comply with an outcomes- and problem-based nursing education programme. Polit & Beck (2004:192) state that the purpose of descriptive studies "is to describe and document aspects of a situation as it naturally occurs". The descriptive survey method was used in this study to describe the relationship among variables instead of assuming cause-and-effect relationships. By using a descriptive research design more information was gathered regarding the characteristics within the field of this study.

3.3 RESEARCH INSTRUMENT

The nurse educators' utilisation of outcomes- and problem-based teaching strategies to facilitate learners' attainment of outcomes was explored through the use of structured questionnaires. Data were collected using a structured, self-administered questionnaire containing open-ended and closed-ended questions. All nurse educator respondents received the same questionnaire to respond to at the same time at the nursing college where the study was conducted.

The student respondents received a questionnaire with similar questions but it was adapted to ensure that the students understood the terminology used. All students within each training stage group received the same questionnaire at the same time to respond to at the nursing college where the study was done. In accordance with Polit and Beck (2004:431), person triangulation was used in this study. This involves collecting data from different levels of persons or groups. In this study data were collected from nurse educators and students, with the aim of validating data through their multiple perspectives on the phenomena.

The questionnaire utilised by Prinsloo (2003:35) during her study was used as a guideline during the compilation of the questionnaire for this study. The compilation of the questionnaire was done in consultation with the researcher's supervisors and a statistician. The supervisors are knowledgeable about the area of study and the statistician is knowledgeable about instrument construction. Questions were sequenced in a meaningful manner to encourage co-operation. Open-ended questions were used to allow respondents to motivate their answers and closed-ended questions allowed them to indicate their responses with regard to the selected items.

The nurse educators' questionnaire consisted of two parts:

- Section 1: Collecting demographic data consisting of four questions.
- Section 2: Collecting data on theoretical teaching strategies consisting of twenty-six questions.

The students' questionnaire consisted of two parts:

- Section 1: Collecting demographic data consisting of three questions.
- Section 2: Collecting data on theoretical teaching strategies consisting of ten questions.

3.3.1 Validity

"Validity is the degree to which an instrument measures what it is supposed to measure" (Polit & Beck 2004:422). Validity in this study was determined through cross validation, namely content validity and face validity. Polit & Beck (2004:423) state that "face validity refers to whether the instrument looks as though it is measuring the appropriate construct and content validity looks at the degree to which an instrument has an appropriate sample of items for the construct being measured".

The questions asked in the questionnaire were specific with regard to theoretical teaching strategies and OBE. The opinions of expert nurse educators was sought to validate the instrument as recommended by Polit & Beck (2004:423). The researcher formulated the questions and sent them for validation by the supervisor, statistician and other consultants in research at the University of Pretoria.

A pilot study was done to test the research instrument and feasibility of the study. The pilot study was conducted at a nursing college in Gauteng different to the nursing college where the main research was conducted to ensure that respondents in the main study were not influenced in any way. Five nurse educators and five students from each training stage group participated in the pilot study. The pilot study was done to determine whether the instrument was clearly worded and that it solicited the type of information envisioned. It was found that the questionnaire was well answered by respondents, but in two different areas they only responded to one or two items listed. The questionnaire was then adapted by including extra instructions to ensure that respondents could indicate their choice for each item mentioned. The changes on the questionnaire were done according to the advice of the statistician who assisted with the development of the questionnaire. In the analysis of the main study in Chapter 4, the pilot study was not included.

3.3.2 Reliability

Polit and Beck (2004:416) assess that an “instrument’s reliability is the consistency with which it measures the target attribute. Reliability also concerns the questionnaire’s accuracy to reflect true scores”. The research instrument used in this study was tested for reliability by submitting it to expert nurse educators to assess the homogeneity of the variables. The reliability of the questionnaire was further determined through a pilot study where stability of the instrument, as quoted by Polit and Beck (2004:417) “refers to the extent to which similar results are obtained on two separate administrations, was tested”.

3.3.3 Research setting

The research setting was naturalistic. Data were collected at the South African Military Health Service (SAMHS) Nursing College in Gauteng. Respondents answered the questionnaire at the nursing college where the study was conducted. The method of recruiting study respondents was through direct invitation. All respondents were invited to attend the data collection process at a convenient date and time for all. Respondents completed the questionnaires and immediately placed them in an enclosed container at the door as they were leaving.

3.4 POPULATION

"A population is the entire aggregation of cases in which the researcher is interested" (Polit & Beck 2004:289). The population in this research study consisted of nurse educators at SAMHS Nursing College in Gauteng currently facilitating the comprehensive four-year nursing diploma course, and students currently busy with the comprehensive four-year nursing diploma course. All voluntarily agreed to participate in the study. Table 3.1 illustrates the population:

Table 3.1: Total population for this study

Stage	Nurse educators	Nursing students
1st Stage	4	54
2nd Stage	4	42
3rd Stage	8	41
4th Stage	3	47
Total	19	184

All stage groups from stage 1 to stage 4 were included to establish how theoretical teaching strategies in an OBE and PBL nursing education programme were utilised.

3.5 SAMPLING

According to Polit & Beck (2004:731) sampling is the process whereby a portion of the population, representative of the entire population is selected. They define a sample as a "subset of a population, selected to participate in a study". Convenience, non-probability sampling method was used for this study. "Convenience sampling entails using the most conveniently available people as study participants" (Polit & Beck 2004:292).

The number of returned questionnaires determined the size of the sample. The researcher invited all nineteen (19) nurse educators at the college to attend the data collection process. Seventeen (17) arrived and completed the questionnaire (89%). The researcher also sent out one hundred and eighty-four (184) questionnaires to students and received one hundred and seventy-six (176) back (96%). Table 3.2 illustrates the sample size for this study.

Table 3.2: Total sample size for this study

Stage	Nurse educators	Nursing students
1st Stage	4	52
2nd Stage	4	42
3rd Stage	6	35
4th Stage	3	47
Total	17	176

3.5.1 Criteria used in the choice of sample size

The researcher considered the total number of nurse educators at SAMHS Nursing College currently facilitating the comprehensive four-year nursing diploma course, and the total number of students currently busy with the comprehensive four-year nursing diploma course. The total number of nurse educators was nineteen (19) and the total number of students was one hundred and eighty-four (184).

3.5.2 Eligibility criteria

According to Polit & Beck (2004:290) this is "the criteria that specify population characteristics are referred to as eligibility criteria or inclusion criteria". There were two different populations involved in this study:

3.5.2.1 Eligibility criteria for the selection of nurse educator respondents:

- All respondents had diplomas in nursing education.
- All respondents were nurse educators facilitating theoretical learning for the comprehensive four-year nursing diploma course learners at SAMHS Nursing College where this study was conducted.
- Respondents were not part of the pilot study.

3.5.2.2 Eligibility criteria for the selection of student respondents:

- All respondents were first to fourth stage students studying the comprehensive four-year nursing diploma course at SAMHS Nursing College where the study was conducted.
- Respondents were not part of the pilot study.

3.6 DATA COLLECTION

During a personnel meeting, nurse educator respondents were addressed regarding the study. A suitable date was set for the distribution of the questionnaires to them. The researcher requested a specific time and date to address the student respondents.

During both these meetings the participation information leaflets were handed out to the respondents, and the researcher gave an in-depth explanation of the study to them. Respondents were requested to complete the questionnaire. Complying with the request implied consent. Respondents were informed that no identifiable information should be entered on the questionnaire. Respondents completed the questionnaire and, to ensure confidentiality and anonymity, each respondent put his or her own completed questionnaire in the enclosed box provided at the door. Throughout the data collection process, the researcher was available to answer and clarify questions.

3.7 COMPLIANCE OF THE RESPONDENTS

The nurse educators were positive because they attended the predetermined data collection process. A total number of nineteen [(n=19) 100%] nurse educators were present that day, but only seventeen showed up for the predetermined data collection process and received a questionnaire. The response rate was 89% (n=17).

The student respondents were also positive. A total number of one hundred and eighty-four [(n=184) 100%] questionnaires were distributed to the student respondents at the college. The response rate was 96% (n=176).

3.8 DATA ANALYSIS

With the assistance of the statistical department of the University of Pretoria the data were coded and computerised. Data analysis and the interpretation thereof were subsequently done by utilising the SAS version 8.2 statistical programme. Descriptive statistics were used to describe the research phenomena. Open-ended responses were categorised and similarities in each category were identified and coded by formulating themes. Similar codes across responses were enumerated and were sent to the statistician to quantify data into frequencies and percentages. Closed-ended responses were quantified into single frequencies and percentages. Frequency tables, bar diagrams and percentages were compiled to communicate the data (Polit & Beck 2004:451-455). Data was further interpreted to render it more meaningful by explaining the results and comparing them to the literature reviewed.

3.9 ETHICAL CONSIDERATIONS

The Faculty of Health Sciences Research Ethics Committee of the University of Pretoria approved the research proposal. The researcher also applied for approval from the SAMHS Nursing College where the study was conducted. The Director Nursing SAMHS and the principal of SAMHS Nursing College granted approval. Letters of permission from the University of Pretoria (see Appendix F) and SAMHS Nursing College (see Appendix E) are included as appendices to this dissertation.

As prescribed by Brink (2001:39-42) the researcher adhered to all the ethical considerations regarding this study, namely:

- By ensuring confidentiality the principle of justice was adhered to. During the data collection process the researcher told the participants not to

write their names on the questionnaires. It was explained to them that the completion of the questionnaire implied consent. Furthermore, participants were assured that no personal or sensitive information would be divulged during the publication of the results of the study.

- All prospective participants were informed of the purpose of the study and of the fact that the research results would be made available to all the respondents.

- Respondents had the right to decide voluntarily whether or not to participate in the study without any risk of penalty or prejudicial treatment. The principle of respect was thus adhered to.

- The principle of beneficence rules that the wellbeing of the respondents must be maintained. Respondents suffered no inconvenience or discomfort during the twenty minutes it took to complete the questionnaire.

- A two-page participation information leaflet was added as an appendix to the questionnaire. The letter explained the purpose of the research, the nature of the questionnaire and consent to the study.

3.10 CONCLUSION

Chapter 3 explained in detail the research design, instrument construction, validity and reliability of the research instrument and the ethical considerations of this study. In Chapter 4 the researcher will take the reader through the analysis of the captured data. Tables, pie diagrams and figures will be used to illustrate research findings. The results will be analysed and compared to findings in the literature review.

CHAPTER 4
DATA ANALYSIS

4.1 INTRODUCTION

The SANC (1993) states that "the purpose of Nursing Education is to develop the learner at a personal and professional level to become an independent, knowledgeable, safe practitioner with analytical and critical thinking skills" (SANC 1993:3). This implies that nurse educators should make use of OBE and PBL teaching methods when facilitating learning, because problem-based learning strategies enhance critical thinking skills and assist in developing learners' decision-making skills. Accordingly, the outcome of nursing education should result in an independent, knowledgeable, competent and safe professional nurse.

In this chapter the researcher analyses the data in user-friendly terms to allow the reader to understand it. Data analysis will be done in three different stages. Two different questionnaires were compiled and, therefore, data analysis will be done separately for Stage 1 and Stage 2. During Stage 3 data from Stage 1 and Stage 2 will be compared to identify similarities or discrepancies. Person triangulation was used in this study. This entailed collecting data from two different sources (nurse educators and students) as the aim is to validate data through multiple perspectives on the phenomenon.

The data received from the respondents were analysed using the SAS version 8.2 statistical programme. Procedures performed were frequency distributions and two-way distributions. Analysis was done at the statistics

department of the University of Pretoria. All percentages used were rounded off to the nearest decimal point.

4.2 DATA ANALYSIS STAGE 1: NURSE EDUCATORS QUESTIONNAIRE

Data was analysed according to sections as follows: Section 1: Demographic factors and Section 2: Theoretical teaching strategies. In each section, analysis of the data was done question-by-question.

4.2.1 Section 1: Demographic factors

Year of study nurse educators are responsible for

This question was asked to determine which year of study nurse educators were responsible for in the four-year comprehensive course. Teaching strategies differ according to the developmental level of the learners. First stage students are neophytes and need more assistance and guidance when compared to fourth stage learners. First stage learners are inexperienced when it comes to nursing. They need intensive support and accompaniment from the nurse educators during the first year of their training. A more traditional approach to education is thus not uncommon. Prinsloo (2003:35) concedes that PBL becomes more effective during the second and third year of training as learners study specialty subjects, namely Midwifery and Psychiatry, in their fourth year. Therefore, the foundation must be laid during the learners' second and third year so that when they reach their final year, their attainment of critical cross-field outcomes must already be evident in their formative assessment results.

Figure 4.1 shows the responses varied according to the year stages that nurse educators were responsible for. Of the nurse educators, 24% (n=4), were responsible for teaching both first and second stage students and 35% (n=6) for teaching third stage students. The lowest response of 18% (n=3) was responsible for teaching fourth stage students. The above data illustrate that the highest percentage of respondents were nurse educators responsible for the third stage. Third stage learners are regarded as senior learners, therefore, it is expected of them to be more self-directed and less lecture-orientated.

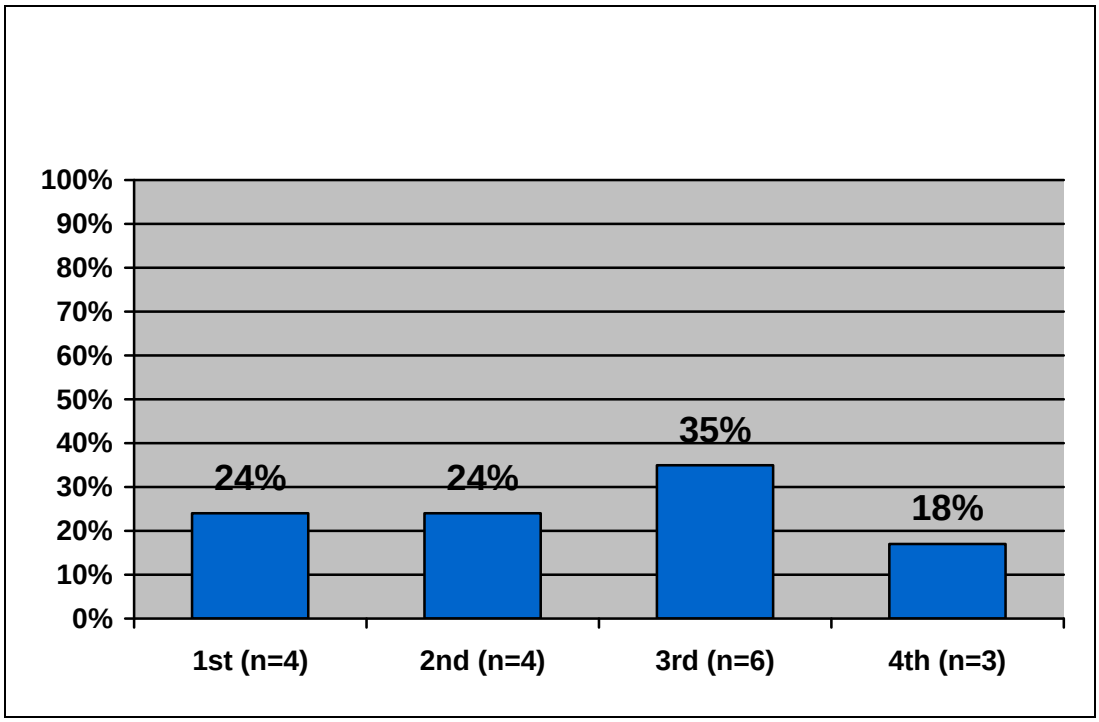

Figure 4.1: Study year that nurse educators are responsible for (N=17)

Subjects nurse educators teach

Depending on the type of subject facilitated, theoretical teaching strategies differ. For example, Anatomy and Physiology are very factual subjects and nurse educators' means of facilitating learning could differ. Figure 4.2 illustrates the number of respondents who facilitated General Nursing Science constituted 35% (n=6), those who facilitated Community Nursing Science constituted 24% (n=4) and respondents who facilitated Physiology, Anatomy or Pharmacology, constituted 12% (n=2). Of the respondents 18% (n=3) each facilitated Psychiatric Nursing Science, Sociology or Psychology and 18% (n=3) facilitated Midwifery. One of the nurse educator respondents indicated that she facilitated two subjects. It is evident that the majority of the nurse educators facilitated General Nursing Science.

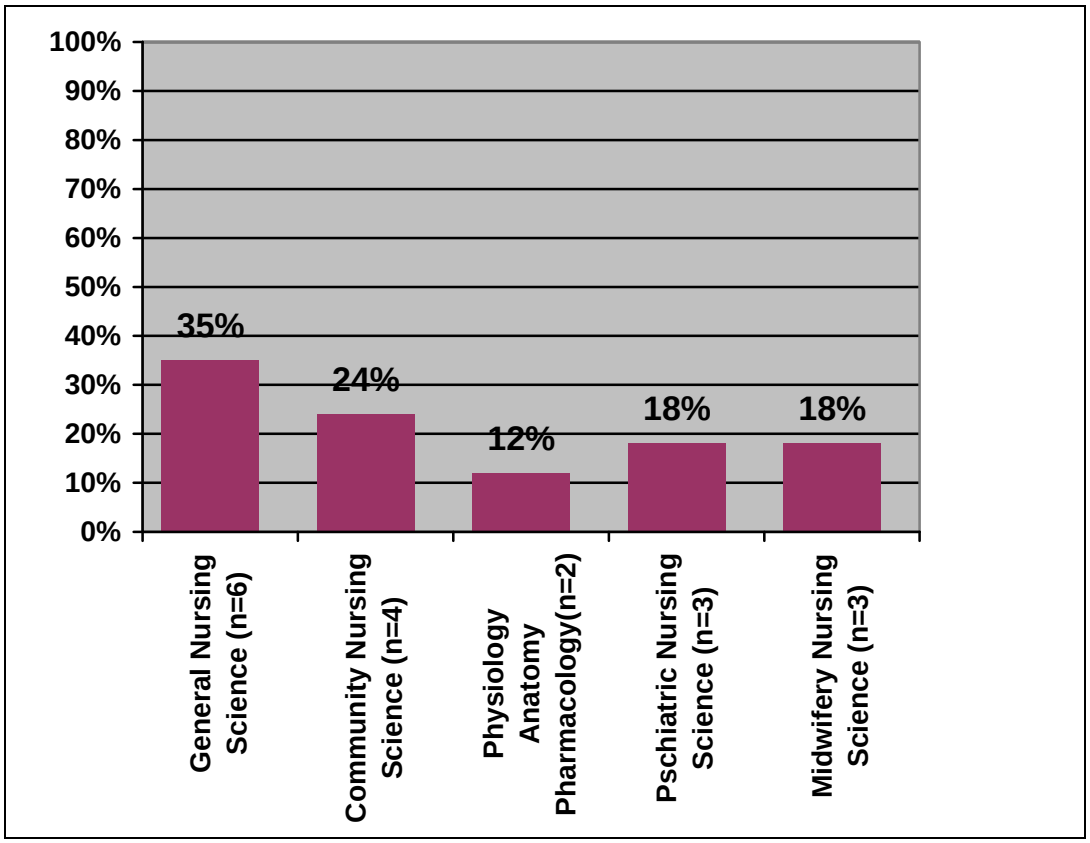

Figure 4.2: Subjects taught by nurse educators (N=17)

Highest qualifications

Nurse educators were asked to indicate their highest qualification from the list provided. The SANC (1993) requires nurse educators to be registered and have either a diploma or a degree in Nursing Education. The researcher wanted to establish if SAMHS Nursing College complied with the regulation as stipulated by the SANC. According to Figure 4.3 12% (n=2) of the respondents held a masters degree, 71% (n=12) nurse educators obtained a nursing education degree, while 12% (n=2) had a diploma in nursing education as their highest qualification. The above data show that most of the nurse educators who responded, held a Baccalaureate degree in Nursing Education.

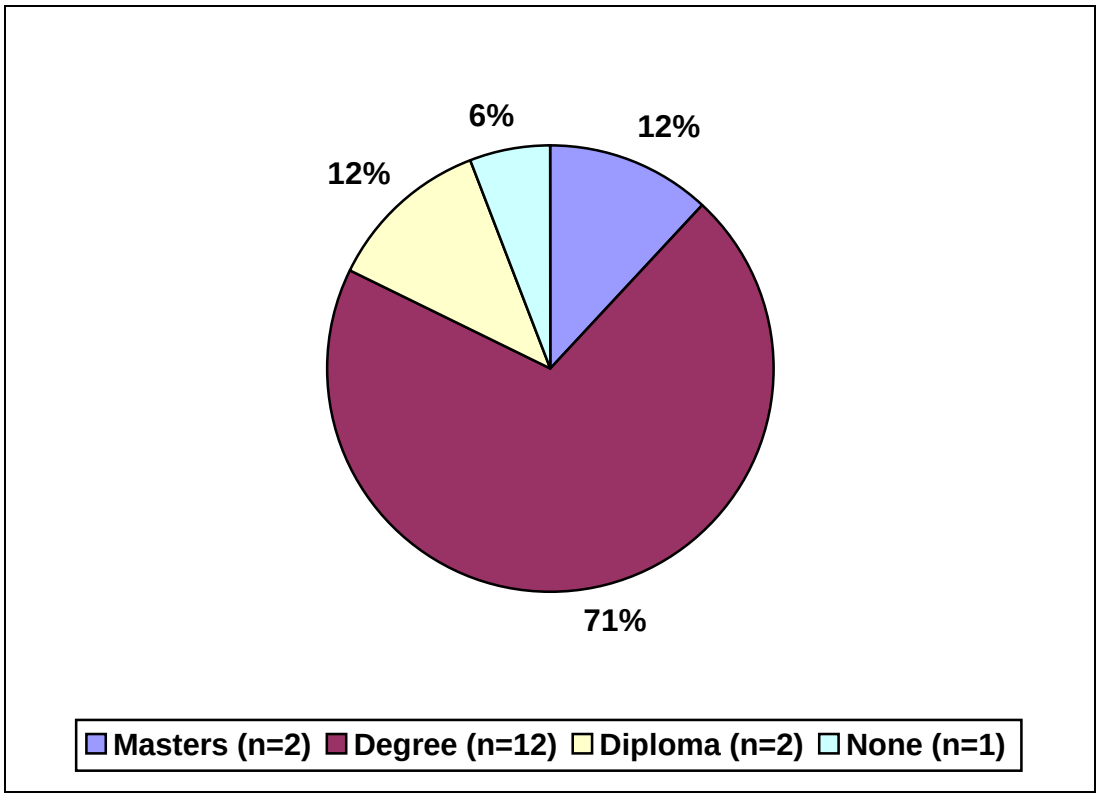

Figure 4.3: Nurse educators' highest nursing education qualification (N=17)

Years of nursing education experience

The next question was asked to determine the years of nursing education experience each nurse educator at SAMHS Nursing College had. Sixteen (16) nurse educators responded and one (1) did not respond. Responses differed from twenty-six (26) years to a minimum of one (1) year of experience. The responses showed that 76% (n=13) nurse educators had more than five (5) years nursing education experience. The mean experience was 11.5 years with a standard deviation of 6.4 (median).

4.2.2 Section 2: Theoretical teaching strategies

Curriculation for OBE

As can be seen in Figure 4.4 all seventeen (17) nurse educators responded to this question and it was established that 76% (n=13) had been involved in curriculation for OBE, and 24% (n=4) indicated that they had not been involved. It is a reassuring fact that most of the lecturers have been exposed to curriculation for OBE.

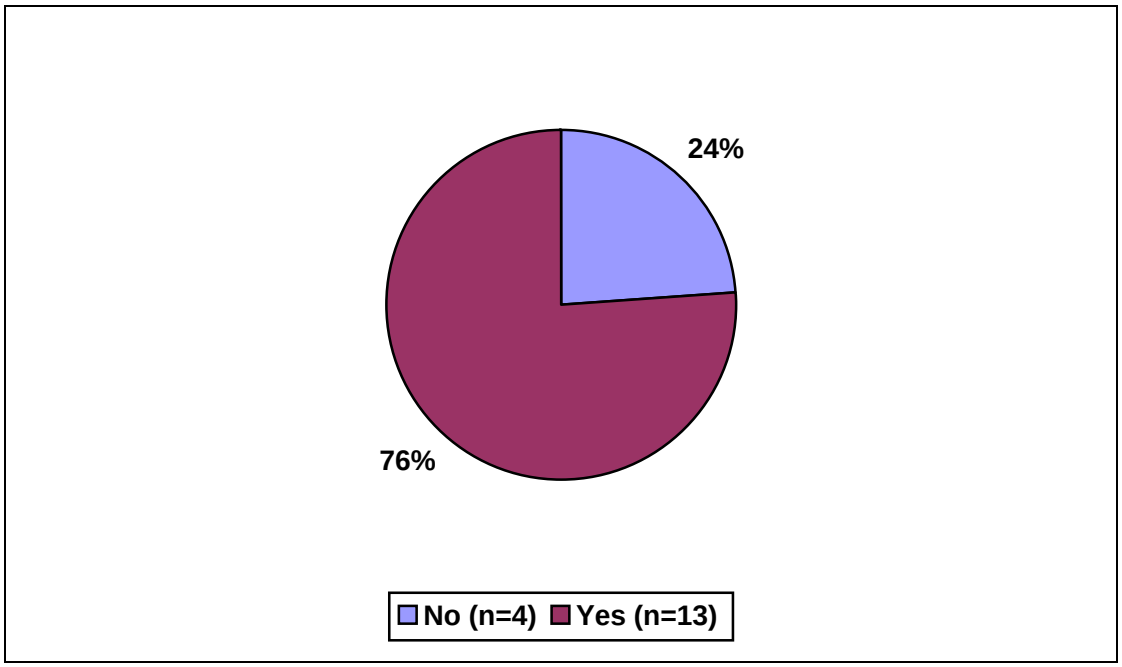

Figure 4.4: Nurse educators involved in curriculation for OBE (N=17)

Planning of OBE curriculum

Respondents were then asked to indicate with a "Yes" or "No" response whether they had been involved in the planning of the curriculum currently in use. Fifty-nine percent (n=10) indicated that they had been involved in the planning of the current curriculum and 41% (n=7) indicated that they had not been involved.

Training of nurse educators regarding OBE and PBL

The literature in Chapter 2 stated that nurse educators should be trained and knowledgeable regarding PBL for it to be implemented successfully. Table 4.1 shows that 65% (n=11) nurse educators received training regarding OBE through in-service training, while 47% (n=8) also received training regarding PBL through in-service training.

Table 4.1: **Training of nurse educators regarding OBE and PBL (N=17)**

QUESTIONS ON THE TRAINING OF NURSE EDUCATORS	TRAIN THE TRAINER	TRAINING RECEIVED AFTER IMPLEMENTATION OF OBE	IN-SERVICE TRAINING	FACILITATION COURSE	ASSESSOR'S COURSE	NO TRAINING RECEIVED	OTHER
What training have you received regarding OBE?	47% (n=8)	18% (n=3)	65% (n=11)	18% (n=3)	59% (n=10)	0% (n=0)	12% (n=2)
What training have you received regarding PBL?	24% (n=4)	18% (n=3)	47% (n=8)	6% (n=1)	41% (n=7)	12% (n=2)	6% (n=1)

Training of nurse educators regarding multimedia in nursing education

Figure 4.5 clearly illustrates that the majority of respondents 82% (n=14) received training to use multimedia during their education as a nurse educator, while 47% (n=8) received training regarding multimedia during in-service training.

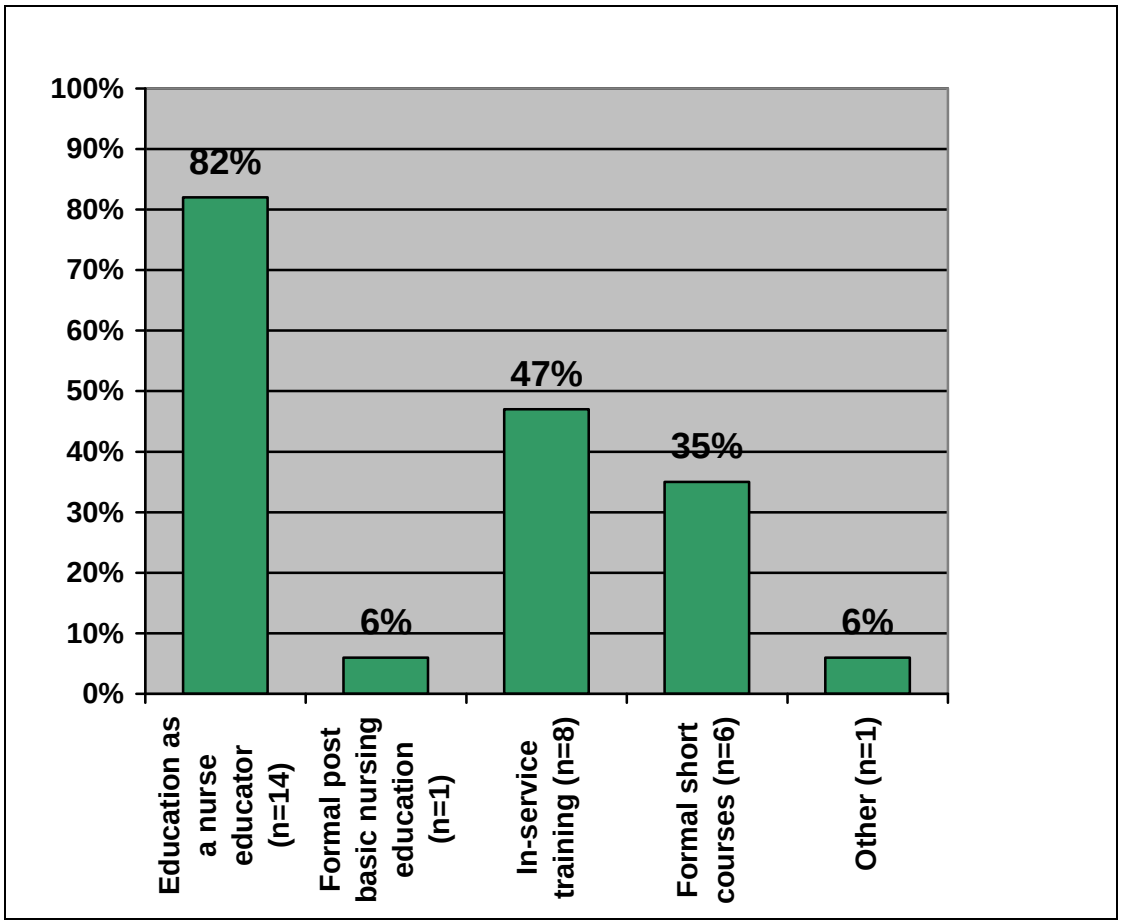

Figure 4.5: Responses regarding training received to use multimedia in nursing education (N=17)

Computer skills

From the literature studied it is evident that it is required of nurse educators today to be computer-literate. They are also expected to use information technology such as computers and the Internet on a regular basis in order to facilitate PBL. Table 4.2 shows that 65% (n=11) of the respondents indicated that they utilised Microsoft Word all of the time and 29% (n=5) utilised Microsoft Power Point all of the time. Only 12% (n=2) utilised Microsoft Excel all of the time. From the above data it is evident that nurse educators predominantly utilised Microsoft Word computer programmes.

Table 4.2: Responses of nurse educators on how often they utilised computer programmes (N=17)

COMPUTER PROGRAMME	NOT AT ALL	RARELY	50% OF THE TIME	MOST OF THE TIME	ALL OF THE TIME
Microsoft Word	0% (n=0)	6% (n=1)	12% (n=2)	18% (n=3)	65% (n=11)
Microsoft Power Point	24% (n=4)	12% (n=2)	12% (n=2)	24% (n=4)	29% (n=5)
Microsoft Excel	65% (n=11)	18% (n=3)	6% (n=1)	0% (n=0)	12% (n=2)

According to Figure 4.6 94% (n=16) of the respondents indicated that they had received training in Microsoft (MS) Word; 41% (n=7) had received training in Microsoft (MS) Power Point and only 35% (n=6) had received training in Microsoft (MS) Excel.

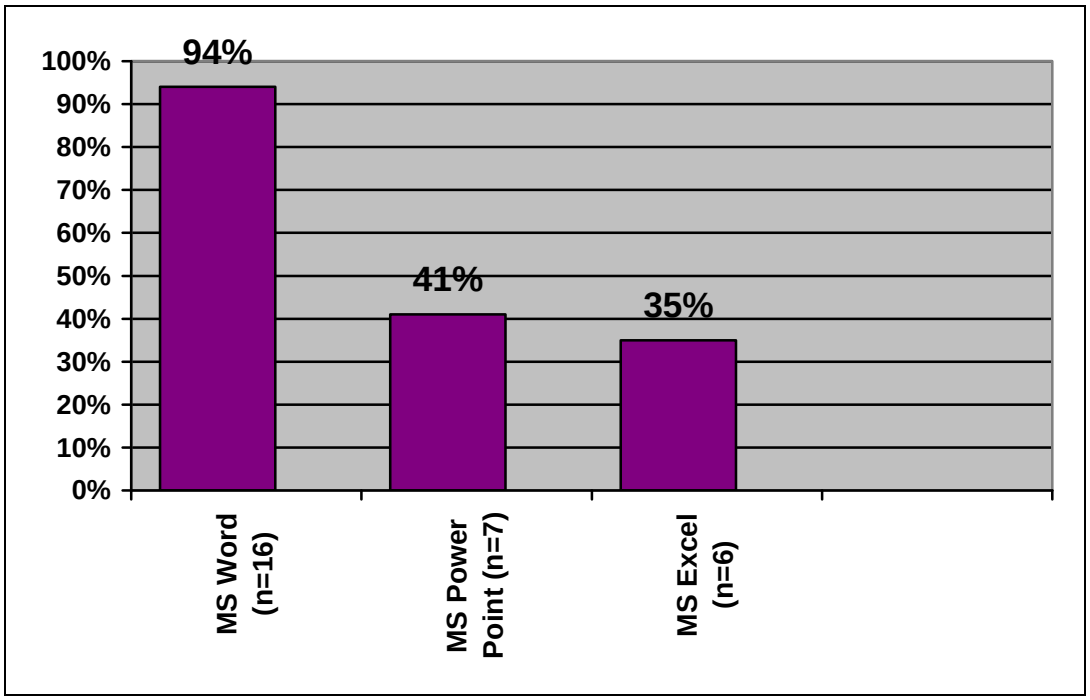

Figure 4.6: Training received by nurse educators regarding computer skills (N=17)

The training received by nurse educators corresponds to the statistics of how often they utilised the computer programme. For example, only 12% (n=2) utilised Microsoft Excel and only 29% (n=5) utilised Microsoft Power Point. Since nurse educators are expected to utilise Microsoft Power Point as a teaching aid, these results cause concern. It is regarded as an impediment if nurse educators are not knowledgeable in utilising new technology, or practising these skills by utilising computer programmes**.**

Educational facilities accessible at the college

Nurse educators were asked to indicate the educational facilities accessible to them at the college. Table 4.3 illustrates that library facilities, with a 65% (n=11) response, and a skills/simulation laboratory, with a 76% (n=13) response, were facilities at the college accessible to them. Table 4.3 also shows that the following educational facilities were not accessible to them at the college: computer laboratory, Internet and video conferences. Only 12% (n=2) of the respondents indicated that teaching CD discs were accessible to the nurse educators.

Table 4.3: Responses of nurse educators on accessibility of educational facilities at the college (N=17)

ADDITIONAL FACILITY	RESPONSES
Videos/DVDs	53% (n=9)
Computer lab	0% (n=0)
Internet	0% (n=0)
Teaching CD discs	12% (n=0)
Library facilities	65% (n=11)
Skills/simulation laboratory	76% (n=13)
Facilities small group	41% (n=7)
Video conferences	0% (n=0)

Educational facilities available to the students at the college

Nurse educators were then asked to what extent the educational facilities indicated in Table 4.3 were available to the students at the college. Respondents were asked to mark the appropriate answer with an “X” next to each option. Some respondents left some options blank. The researcher assumed that these options were not available.

As illustrated in Table 4.4 a corresponding response of 65% (n=11) indicated that only library facilities and videos were available to students at the college. The availability of skills/simulation laboratories for students at the college constituted 82% (n=14). The lowest response of 0% (n=0) shows clearly that a computer laboratory, Internet services and video conferences were not available to the students at the college.

Only 18% (n=2) of the respondents indicated that teaching CD discs were available to the students. The data from Table 4.4 correlate with that of Table 4.3 (p. 49), illustrating that the educational facilities that were not accessible to nurse educators at the college, were also not available to the students at the college.

Table 4.4: Responses of nurse educators on educational facilities available to the students at the college (N=17)

ADDITIONAL FACILITY	RESPONSES		
	AVAILABLE	AVAILABLE AT ANOTHER INSTITUTION	NOT AVAILABLE
Videos/DVDs	65% (n=11)	6% (n=1)	29% (n=5)
Computer lab	0% (n=0)	6% (n=1)	94% (n=16)
Internet	0% (n=0)	0% (n=0)	100% (n=17)
Teaching CD discs	18% (n=3)	0%(n=0)	82% (n=14)
Library facilities	65% (n=11)	24% (n=4)	12% (n=2)
Skills/simulation laboratory	82% (n=14)	0% (n=0)	18% (n=3)
Facilities small group	53% (n=9)	0%(n=0)	47% (n=8)
Video conferences	0% (n=0)	0% (n=0)	100% (n=17)

Teaching strategies planned and used by nurse educators

With a response constituting 76% (n=13), Table 4.5 reveals clearly that formal lectures were still very much utilised by nurse educators at the college. Only 12% (n=2) indicated that they utilised research articles, which is an integral part of OBE and PBL. It is reassuring that 82% (n=14) of the respondents indicated that they utilised group discussions, 88% (n=15) utilised small group activities and 76% (n=13) utilised self-directed learning, as all these teaching strategies are essential for OBE and PBL. The use of case studies and portfolios are further examples of PBL teaching strategies.

Table 4.5: Teaching strategies planned and used by nurse educators (N=17)

TEACHING STRATEGIES	PLANNED	UTILISED
Formal lectures	88% (n=15)	76% (n=13)
Core lectures	59% (n=10)	71% (n=12)
Group discussions	94% (n=16)	82% (n=14)
Small group activities	100% (n=17)	88% (n=15)
Self-directed learning	82% (n=14)	76% (n=13)
Simulations	88% (n=15)	82% (n=14)
Videos/DVDs	35% (n=6)	35% (n=6)
Role-play	59% (n=10)	59% (n=10)
Work books	71% (n=12)	47% (n=8)
Projects	35% (n=6)	29% (n=5)
Assignments	100% (n=17)	76% (n=13)
Case studies	53% (n=9)	59% (n=10)
Portfolios	71% (n=12)	41% (n=7)
Research articles	18% (n=3)	12% (n=2)

Frequency that nurse educators utilise teaching strategies in the classroom

Ranging on a scale from 1 to 5, with 1 representing “Not at all” and 5 representing “All of the time”, nurse educators were asked to indicate how often they utilised the abovementioned teaching strategies in the classroom. Though it was emphasised that they should indicate their responses next to each option, some respondents left open spaces. The researcher assumed that these were the options not used by the nurse educators as these terms are used in nursing education daily. The assumption was thus made that the nurse educators would understand the terminology. The researcher was also available throughout the data collection phase to answer any questions, but none were asked.

According to Table 4.6 (p. 53) nurse educators utilised formal lectures and group discussions most or all of the time with a 59% (n=10) response, whereas research articles and videos were utilised the least with a 0% (n=0) response.

Table 4.6: Frequency that nurse educators utilised teaching strategies in the classroom (N=17)

TEACHING STRATEGIES	RARELY / NOT AT ALL	50% OF THE TIME	MOST / ALL OF THE TIME
Formal lectures	29% (n=5)	12% (n=2)	59% (n=10)
Core lectures	35% (n=6)	29% (n=5)	35% (n=6)
Group discussions	0% (n=0)	41% (n=7)	59% (n=10)
Small group activities	24% (n=4)	35% (n=6)	41% (n=7)
Self-directed learning	47% (n=8)	29% (n=5)	24% (n=4)
Simulations	29% (n=5)	53% (n=9)	18% (n=3)
Videos/DVDs	82% (n=14)	18% (n=3)	0% (n=0)
Role-play	65% (n=11)	29% (n=5)	6% (n=1)
Work books	47% (n=8)	18% (n=3)	35% (n=6)
Projects	76% (n=13)	12% (n=2)	12% (n=2)
Assignments	47% (n=8)	35% (n=6)	18% (n=3)
Case studies	71% (n=12)	24% (n=4)	6% (n=1)
Portfolios	53% (n=9)	12% (n=2)	35% (n=6)
Research articles	94% (n=16)	6% (n=1)	0% (n=0)

Teaching aids

According to Table 4.7 (p. 54) teaching aids used most or all of the time in the classroom were the whiteboard with a response of 47% (n=7) and Power Point presentations with a 53% (n=9) response. The data according to Table 4.7 also illustrate that the following teaching aids were rarely utilised by nurse educators:

- Videos/DVDs: 88% (n=15)
- Training CD discs: 76% (n=13)
- Research articles: 76% (n=13)

The above teaching aids could be used to visually illustrate concepts to learners, enhancing understanding of the learning content. Learners can utilise these during their own time thus supporting SDL. The use of research articles is fundamental to the practice of nursing and learners should be exposed to scientific research studies to encourage evidence-based practice when they become registered nurses.

Table 4.7: Frequency that nurse educators utilised teaching aids in the classroom (N=17)

TEACHING AIDS	RARELY / NOT AT ALL	50% OF THE TIME	MOST / ALL OF THE TIME
Posters	59% (n=10)	18% (n=3)	24% (n=4)
Whiteboard	29% (n=5)	24% (n=4)	47% (n=8)
Overhead projector	35% (n=6)	41% (n=7)	24%(n=4)
Training CD discs	76% (n=13)	24% (n=4)	0% (n=0)
Videos/DVDs	88% (n=15)	12% (n=2)	0% (n=0)
Power Point presentation	41% (n=7)	6% (n=1)	53% (n=9)
Models	47% (n=8)	24% (n=4)	29% (n=5)
Research articles	76% (n=13)	18% (n=3)	6% (n=1)

Utilisation of multimedia when giving assignments

Nurse educators were asked to indicate with a "Yes" or "No" whether they encouraged the utilisation of multimedia when giving assignments to students, and whether or not they provided learners with any multimedia. Figure 4.7 shows that 71% (n=12) of the nurse educators did encourage students to utilise multimedia. However, Figure 4.8 (p 56) shows that only 41% (n=7) of the nurse educators actually provided students with some multimedia when giving assignments.

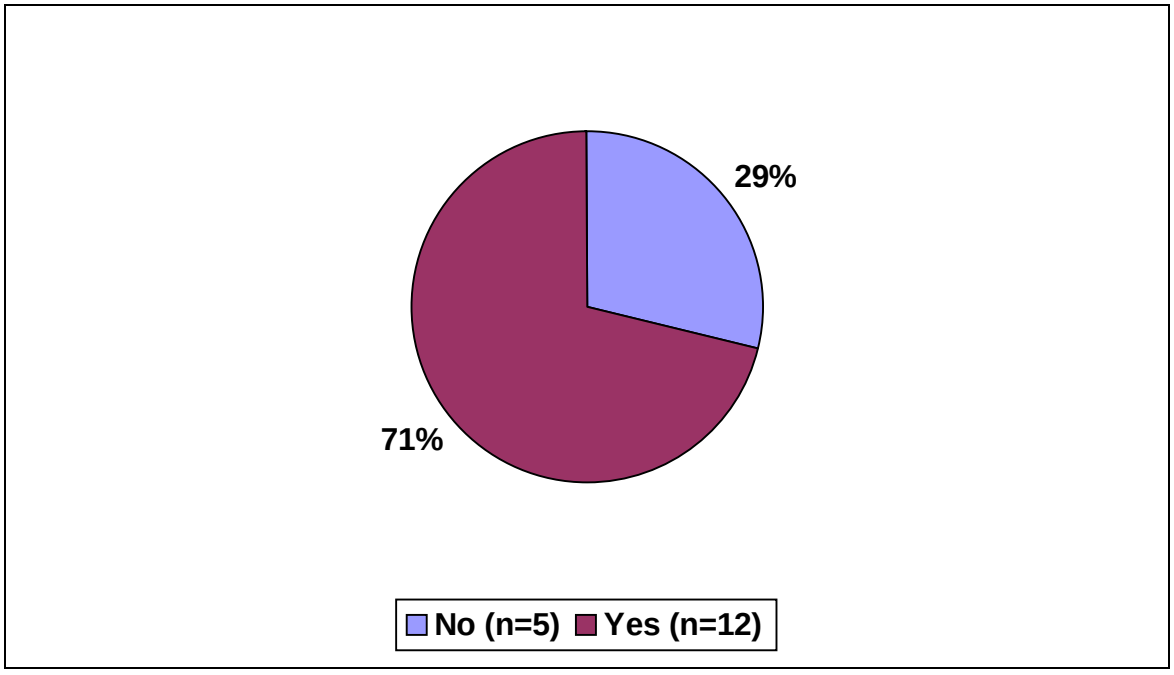

Figure 4.7: Nurse educators who encouraged learners to utilise multimedia for assignments (N=17)

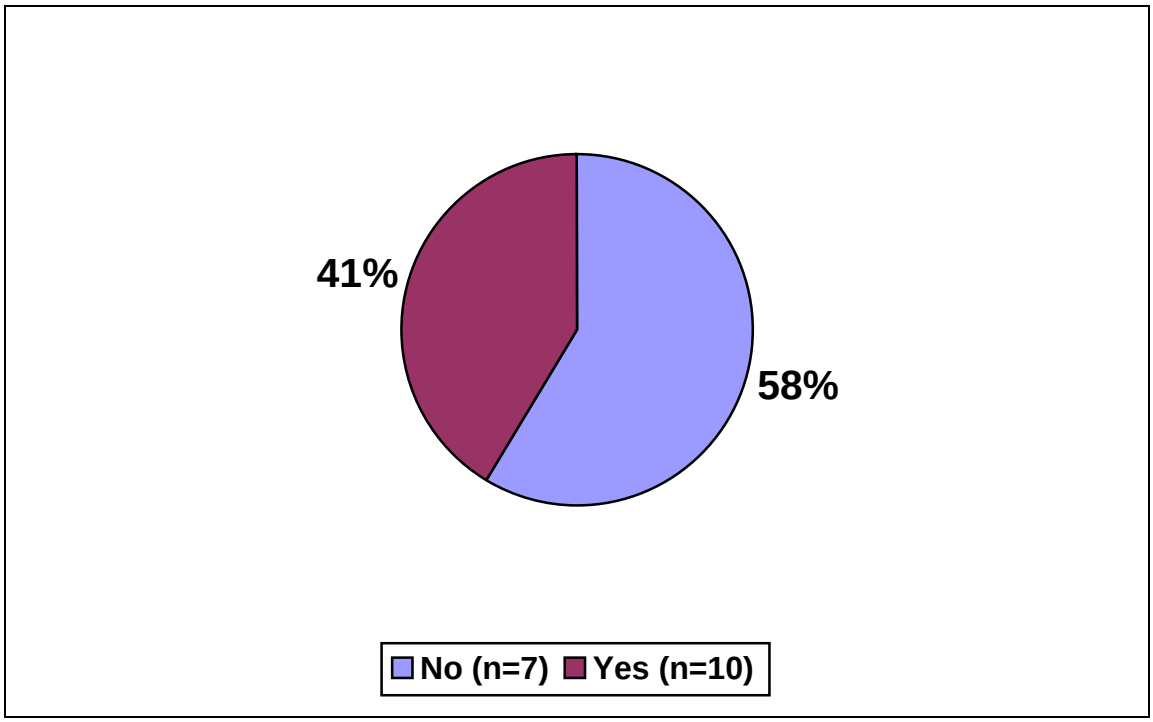

Figure 4.8: Nurse educators who provided students with multimedia for assignments (N=17)

How do nurse educators provide students with multmedia?

Nurse educators were asked to indicate how they encouraged or provided students with multimedia. Nurse educators' responses were coded into significant themes. The following themes were identified and are illustrated in Figure 4.9 (p. 57):

- Requests from students: Nurse educators only provided for multimedia when requested by a student.
- Referrals: Nurse educators referred students to the library or specific textbook.
- Computer or the Internet: Nurse educators advised students to search websites for information.
- Resources: Nurse educators provided resources, for example models, teaching CD discs, posters.

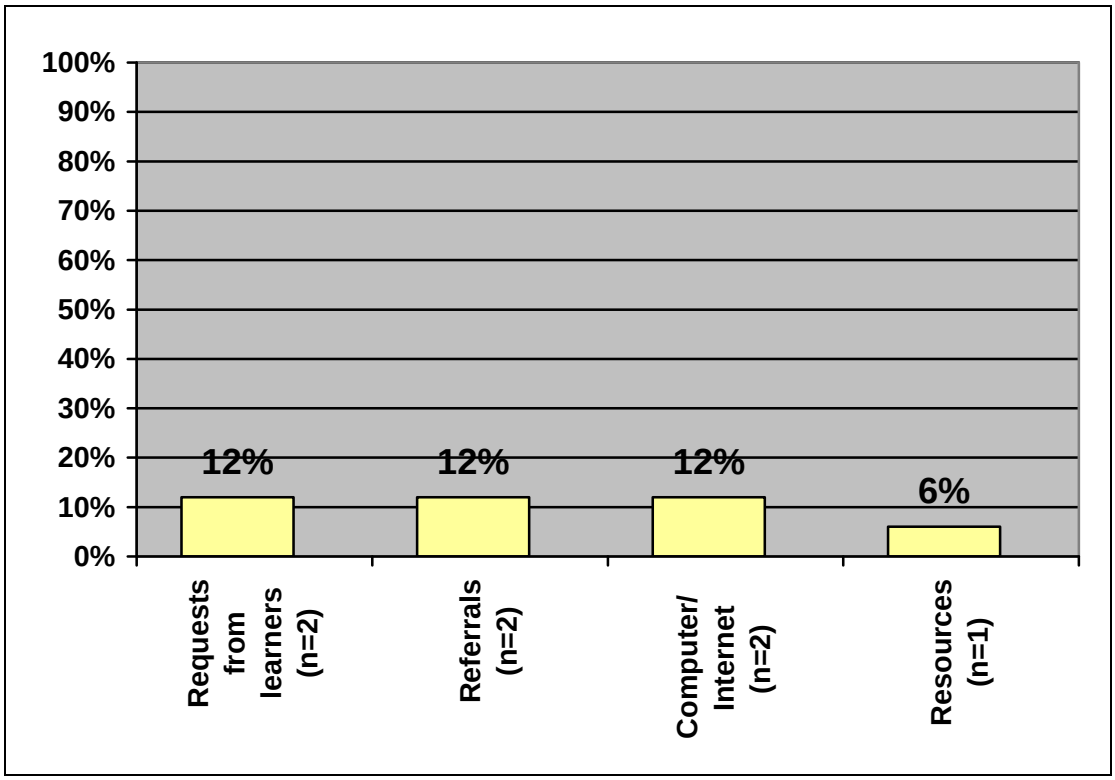

Figure 4.9: Nurse educators' provision for students to utilise multimedia (N=7)

Case studies

Nurse educators were asked whether or not they used patient or case studies to develop student's problem solving skills. Of the respondents 65% (n=11) indicated that they made use of patient or case studies.

According to Figure 4.10, 27% (n =3) indicated that they used known patient studies, 9% (n=1) indicated that they used unknown case studies and the majority of the respondents, 73% (n=8), indicated that they used problem-based case studies.

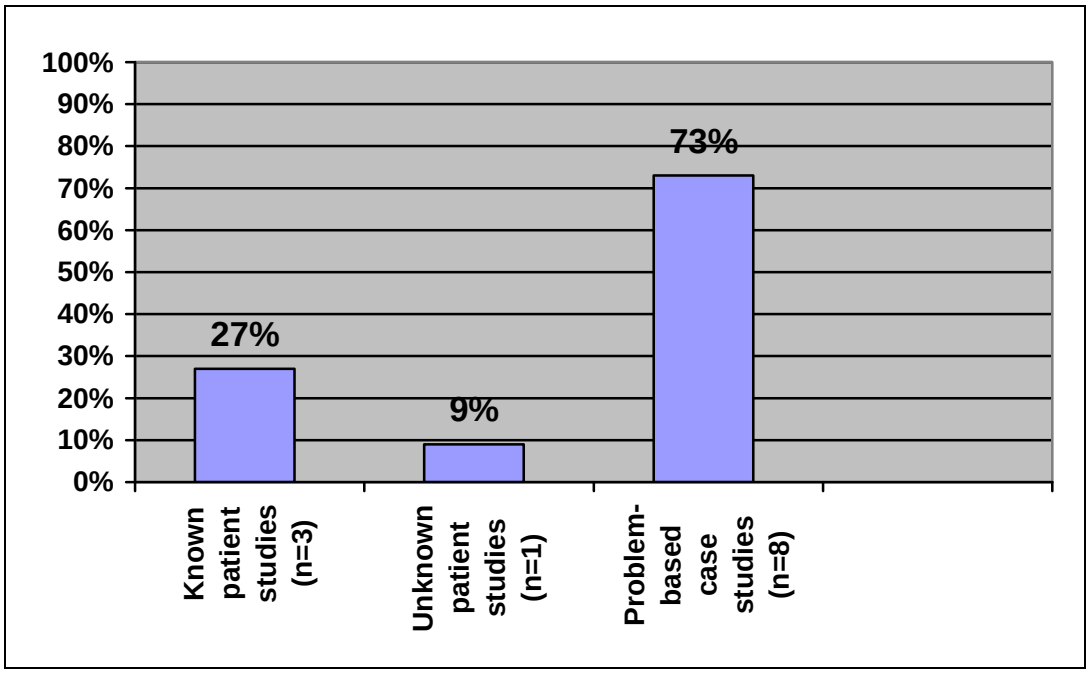

Figure 4.10: Type of case studies used by nurse educators (N=11)

Scenarios

Another important component within PBL is the use of scenarios. Nurse educators were asked to indicate whether or not they used scenarios to develop students' problem solving skills. All seventeen (17) respondents indicated that they did.

Cognitive skills

The data in Table 4.8 illustrates that 76% (n=13) of the respondents indicated that critical thinking skills is a cognitive skill necessary for PBL. The same percentage, 76% (n=13), also indicated that integrating theory and practice is an essential component to enhance PBL. Despite the fact that the literature reviewed clearly emphasised that SDL is a vital part of PBL, only 47% (n=8) believed that self-directed learning (SDL) skills is an important aspect for successful PBL.

Table 4.8: Cognitive skills that enhance PBL (N=17)

COGNITIVE SKILLS	RESPONSES OF NURSE EDUCATORS IN PERCENTAGE (%)
Critical thinking skills	76% (n=13)
Self-directed learning skills	47% (n=8)
Integrating knowledge around theoretical and practical issues	76% (n=13)
Problem-solving skills	59% (n=10)
Group skills	41% (n=7)

The data in Table 4.9 show that case studies, with a response of 76% (n=13), and projects, with a response of 65% (n=11), are the most popular. Workbooks, with a response of 29% (n=5), were the least popular among the nurse educators to utilise when developing a student's cognitive skills.

Table 4.9: Multimedia utilised by nurse educators that could develop cognitive skills of students (N=17)

MULTIMEDIA	RESPONSES OF NURSE EDUCATORS IN PERCENTAGE (%)
Simulations	47% (n=8)
Videos/DVDs	47% (n=8)
Role-play	47% (n=8)
Workbooks	29% (n=5)
Projects	65% (n=11)
Assignments	47% (n=8)
Case studies	76% (n=13)
Portfolios	53% (n=9)
Evidence-based practice research articles	47% (n=8)

Competency in OBE

Figure 4.11 displays that 47% (n=8) of the nurse educator respondents indicated medium competency in utilising OBE educational strategies, and an equal percentage [47% (n=80)] indicated that they felt highly competent.

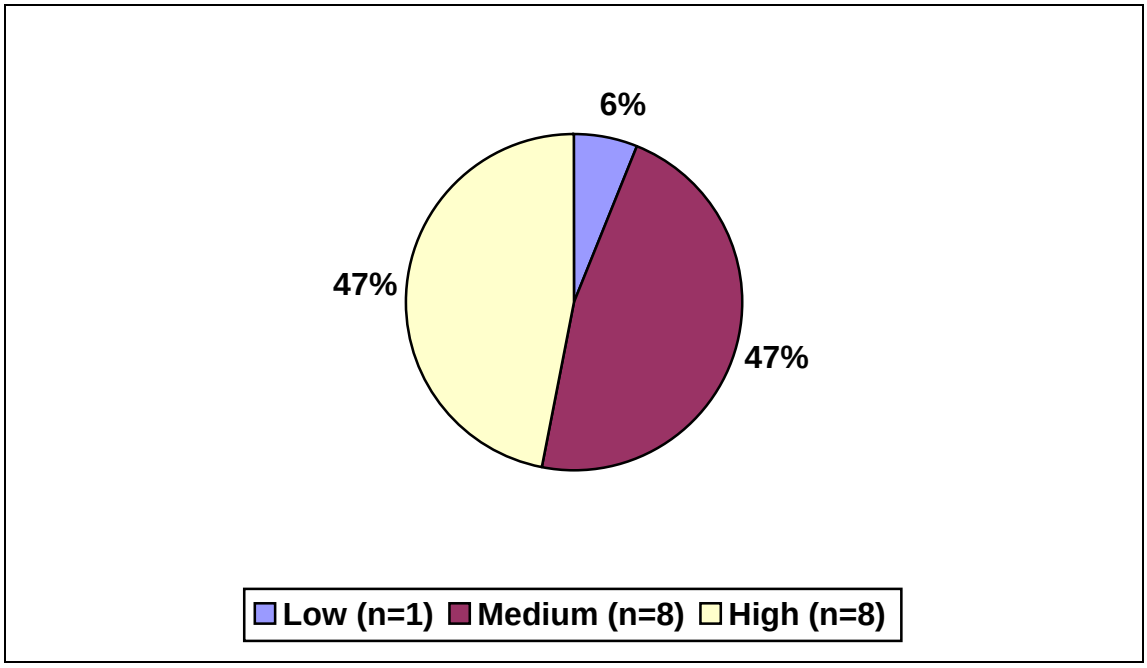

Figure 4.11: Nurse educators' competence in utilising OBE educational strategies (N=17)

Nurse educators who indicated low or medium competency were asked for reasons why they felt moderately competent. According to Table 4.10 (p. 62), of the nine nurse educators who responded to this question, 44% (n=4) indicated a lack of training and in-service training caused them to feel only moderately competent in utilising OBE and PBL teaching strategies. Due to a lack of facilities, resources and support, 67% (n=6) felt only moderately competent. Some nurse educators gave more than one reason for feeling incompetent.

Table 4.10: Reasons given by nurse educators for feeling moderately competent (N=9)

REASONS FOR FEELING INCOMPETENT	PERCENTAGE (%)
Lack of training and in-service training	44% (n=4)
Lack of facilities, resources and support	67% (n=6)

Utilisation of OBE educational strategies

In the last question nurse educators were asked to indicate on a scale from 1 to 5 whether they utilised OBE educational strategies in the classroom. “Not at all” was represented by 1 and 5 represented “All the time”. Figure 4.12 (p. 63) shows that 18% (n=3) of the respondents indicated that they utilised OBE educational strategies all of the time, while 47% (n=8) utilised it most of the time. It is disconcerting that less than 50% of the nurse educators utilised OBE educational strategies most of the time in the classroom. From the literature review it is clear that in South Africa nursing colleges should conform and utilise teaching strategies that support OBE, as promulgated in the SAQA Act (1995).

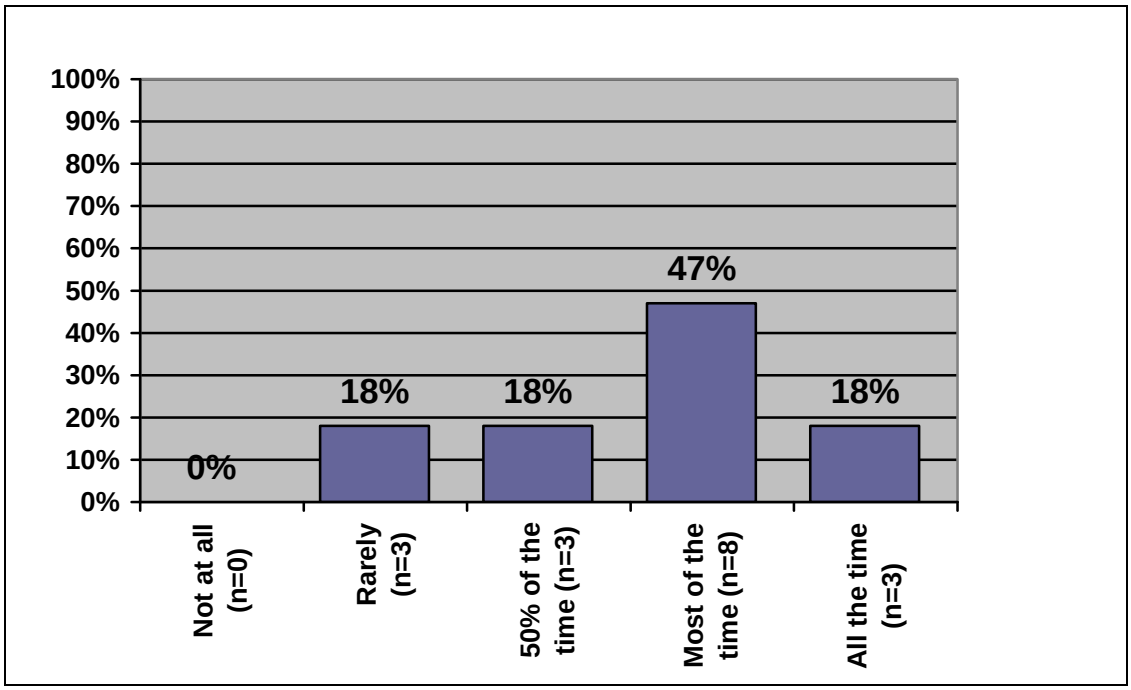

Figure 4.12: Nurse educators' utilisation of OBE educational strategies (N=17)

Nurse educators who felt they did not utilise OBE educational strategies all or most of the time, were asked to indicate their reasons for not doing it. The data in Table 4.11 illustrates that nurse educators who only utilised OBE educational strategies 50% of the time or less, reflected reasons were an excessive workload, the lack of facilities and an inconducive environment.

Table 4.11: Reasons given by nurse educators for not utilising OBE educational strategies (N=3)

REASONS FOR NOT UTILISING OBE EDUCATIONAL STRATEGIES	PERCENTAGE (%)
Lack of facilities or inconducive environment	67% (n=2)
Workload too much	33% (n=1)

4.3 DATA ANALYSIS STAGE 2: STUDENTS QUESTIONNAIRE

Data was analysed according to sections as follows: Section 1: Demographic factors and Section 2: Theoretical teaching strategies. In each section, analysis of the data was done question-by-question.

4.3.1 Section 1: Demographic factors

Study year of student respondents

This question was asked to determine in which year of their four-year comprehensive study course the participating students were in. According to Figure 4.13 responses varied from first stage, representing 30% (n=52), to second stage [24% (n=42)] and third stage [20% (n=35)]. The fourth stage represented 27% (n=47) of the student sample. There were one hundred and seventy-six student respondents. The student respondents were distributed fairly and evenly among the different levels of the comprehensive programme.

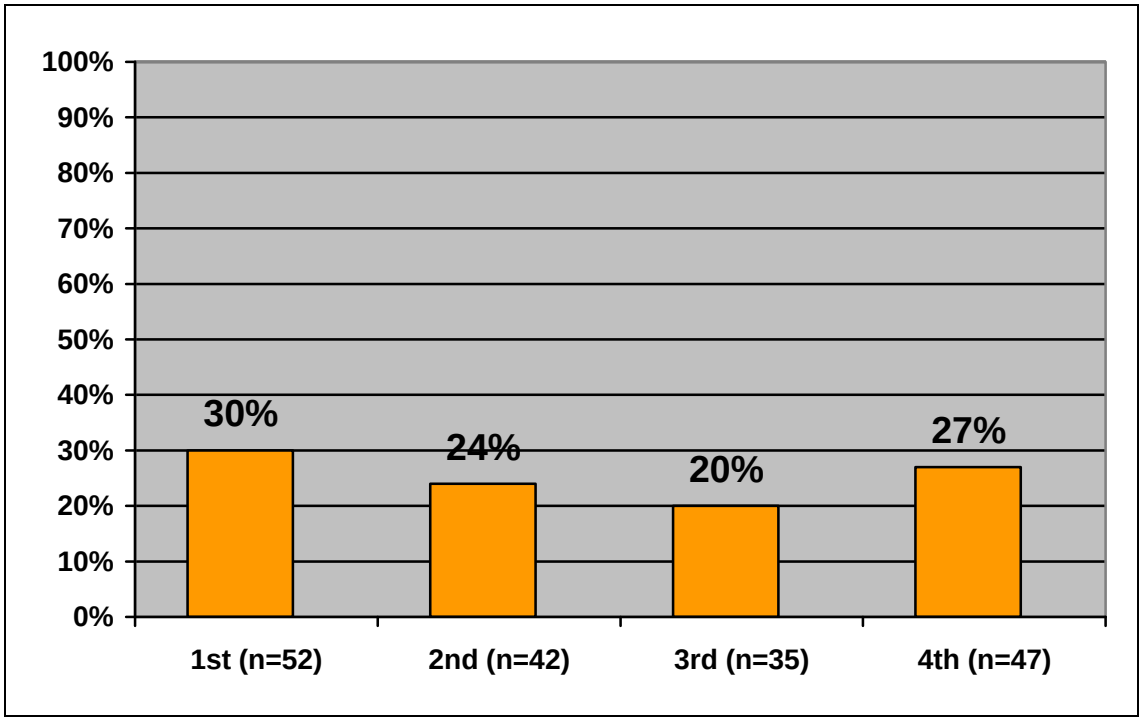

Figure 4.13: Year of study of student respondents (N=176)

It is obvious from Figure 4.13 (p. 64) that the first stage student respondents comprised the highest percentage of the total one hundred and seventy-six (176) student respondents.

Student respondents' age and experience

The next question was asked to determine the student respondents' age, which varied from 19 to 42 years. The mean age was 25 years with a standard deviation of 5.08 (median). Students were also asked to indicate their years of nursing experience before they began the four-year comprehensive programme. Responses differed from 0 to 18 years' experience. The mean experience was 2.3 years with a standard deviation of 4.06 (median).

4.3.2 Section 2: Theoretical teaching strategies

Educational facilities accessible at the college

This question was asked to determine which educational facilities students had access to at the college. From Table 4.12 (p. 66) it is evident that educational facilities least accessible to the students at the college, and showing a very low percentage, were:

- Videos/DVDs: 22% (n=39)
- Computer lab: 2% (n=3)
- Internet: 0.6% (n=1)
- Teaching CD discs: 5% (n=8)
- Video conferences: 0% (n=0)

Some student respondents selected the "None" option provided, implying that not one of the educational facilities supplied on the list of options were accessible to them at the college. These comprised 12% (n=21) of the responses.

Table 4.12: Responses of students on educational facilities accessible at the college (N=176)

EDUCATIONAL FACILITY	RESPONSE
Videos/DVDs	22% (n=39)
Computer lab	2% (n=3)
Internet	0.6% (n=1)
Teaching CD discs	5% (n=8)
Library facilities	45% (n=80)
Skills / simulation laboratory	44% (n=78)
Facilities for small groups	47% (n=82)
Video conferences	0% (n=0)
None	12% (n=21)

Student respondents were asked to what extent the aforementioned educational facilities were available to them at the college. They were requested to mark all options pertaining to the availability of each educational facility with an “X” in the space provided. Some respondents did not respond to each option, but left blank spaces. The researcher assumed that these were the options that were not available and they were coded accordingly. The response of every student was compared to what he or she answered in the previous question since they were similar questions. By verifying that the data of Table 4.12 corresponded with the data of Table 4.13 (p. 67), the researcher concluded that educational facilities were not accessible, and consequently not available, to students. From the data it was also evident that 73% (n=128) of the respondents felt that library facilities were available only at another institution.

From the literature reviewed it is clear that, for the successful implementation of OBE and PBL, students require access to computers and the Internet. These facilities should be available to students to enhance self-directed learning, which is an important component of PBL. According to Table 4.13 only 3% (n=5) of the student sample felt that a computer lab was available to them, and only 1% (n=2) of the student sample felt that the Internet was available to them. It is evident from the data illustrated in Table 4.13 that the following educational facilities were not available to the students:

- Videos/DVDs: 69% (n=121)
- Computer lab: 93% (n=164)
- Internet: 95% (n=168)
- Teaching CD discs: 85% (n=150)
- Video conferences: 92% (n=162)

Table 4.13: Responses of students on educational facilities available at the college (N=176)

ADDITIONAL FACILITY	RESPONSE		
	AVAILABLE	AVAILABLE AT ANOTHER INSTITUTION	NOT AVAILABLE
Videos/DVDs	23% (n=40)	9% (n=15)	69% (n=121)
Computer lab	3% (n=5)	4% (n=7)	93% (n=164)
Internet	1% (n=2)	3% (n=6)	95% (n=168)
Teaching CD discs	12% (n=21)	3% (n=5)	85% (n=150)
Library facilities	11% (n=20)	73% (n=128)	16% (n=28)
Skills/simulation laboratory	53% (n=94)	7% (n=12)	40% (n=70)
Facilities for small group	53% (n=94)	6% (n=11)	40% (n=71)
Video conferences	2% (n=3)	6% (n=11)	92% (n=162)

Teaching strategies utilised by nurse educators in the classrooms

The next question was asked to ascertain which teaching strategies nurse educators utilised in the classroom. Student responses are illustrated in Table 4.14.

Table 4.14: Teaching strategies utilised by nurse educators in the classroom from the students' perspectives (N=175)

TEACHING STRATEGIES	HOW OFTEN UTILISED IN CLASSROOM		
	RARELY / NOT AT ALL	50% OF THE TIME	MOST OR ALL OF THE TIME
Formal lectures	15% (n=27)	34% (n=60)	50% (n=88)
Core lectures	34% (n=60)	34% (n=59)	32% (n=56)
Group discussions	9.5% (n=17)	30% (n=52)	60% (n=106)
Small group activities	24% (n=43)	32% (n=56)	43% (n=76)
Self-directed learning	30% (n=52)	30% (n=53)	40% (n=70)
Simulations	68% (n=120)	21% (n=37)	10% (n=18)
Videos/DVDs	92% (n=161)	6% (n=10)	2% (n=4)
Role-play	86% (n=152)	10% (n=18)	3% (n=5)
Work books	38% (n=67)	24% (n=43)	37% (n=65)
Projects	62% (n=109)	27% (n=47)	11% (n=19)
Assignments	36% (n=63)	42% (n=74)	22% (n=38)
Case studies	57% (n=100)	30% (n=52)	13% (n=23)
Portfolios	22% (n=38)	30% (n=53)	48% (n=84)
Research articles	80% (n=141)	16% (n=28)	3% (n=6)

From the above data student responses suggest that the following teaching strategies were utilised most of the time in the classroom.

- Formal lectures: 50% (n=88)
- Group discussions: 60% (n=106)
- Small group activities: 43% (n=76)
- Self-directed learning: 40% (n=70)
- Portfolios: 48% (n=84)

It is reassuring that group discussions were used most of the time in the classroom since this forms an important part of PBL.

Teaching aids utilised by nurse educators in the classrooms

This question was asked to determine the teaching aids nurse educators utilised in the classroom. Table 4.15 indicates the students' response:

Table 4.15: Teaching aids utilised by nurse educators in the classroom from the students' perspective (N=174)

TEACHING AIDS	RARELY / NOT AT ALL	50% OF THE TIME	MOST / ALL OF THE TIME
Posters	61% (n=107)	21% (n=37)	18% (n=32)
Whiteboard	31% (n=54)	28% (n=49)	42% (n=73)
Overhead projector	26% (n=46)	16% (n=29)	57% (n=101)
Training CD discs	94% (n=166)	1% (n=2)	6% (n=8)
Videos/DVDs	92% (n=162)	6% (n=11)	2% (n=3)
Power Point presentation	43% (n=75)	19% (n=33)	39% (n=68)
Models	62% (n=109)	19% (n=33)	19% (n=34)
Research articles	86% (n=151)	10% (n=18)	4% (n=7)

The data clearly illustrates the following teaching aids were rarely utilised:

- Posters: 61% (n=107)
- Training CD discs: 94% (n=166)
- Videos/DVDs: 92% (n=162)
- Models: 62% (n=109)
- Research articles: 86% (n=151)

The data shows the following teaching aids were utilised most or all of the time:

- Whiteboard: 42% (n=73)
- Overheard projector: 57% (n=101)

When nurse educators utilise various teaching aids the students stay focused and interested. Many of the teaching aids utilised rarely by nurse educators can be easily incorporated into their lectures to illustrate concepts visually to learners, thereby enhancing their understanding of the learning content. By utilising these teaching aids in their own time, students support SDL. The use of research articles is fundamental to the practice of nursing and learners should be exposed to scientific research studies to encourage evidence-based practice when they become registered nurses.

Utilisation of multimedia when giving assignments

Students were asked to indicate whether or not they were encouraged to utilise multimedia when given assignments, and if they were provided with any multimedia. Though 80% (n=140) indicated that they were encouraged to utilise multimedia, only 6% (n=11) indicated that multimedia was actually provided for utilisation when given assignments.

Students were then asked to indicate how they were provided with multimedia. According to Figure 4.14 82% (n=9) of the students felt they were referred to the library, and 64% (n=7) indicated that they were referred to the Internet. Some of the student respondents indicated that nurse educators provided them with more than one multimedia aids.

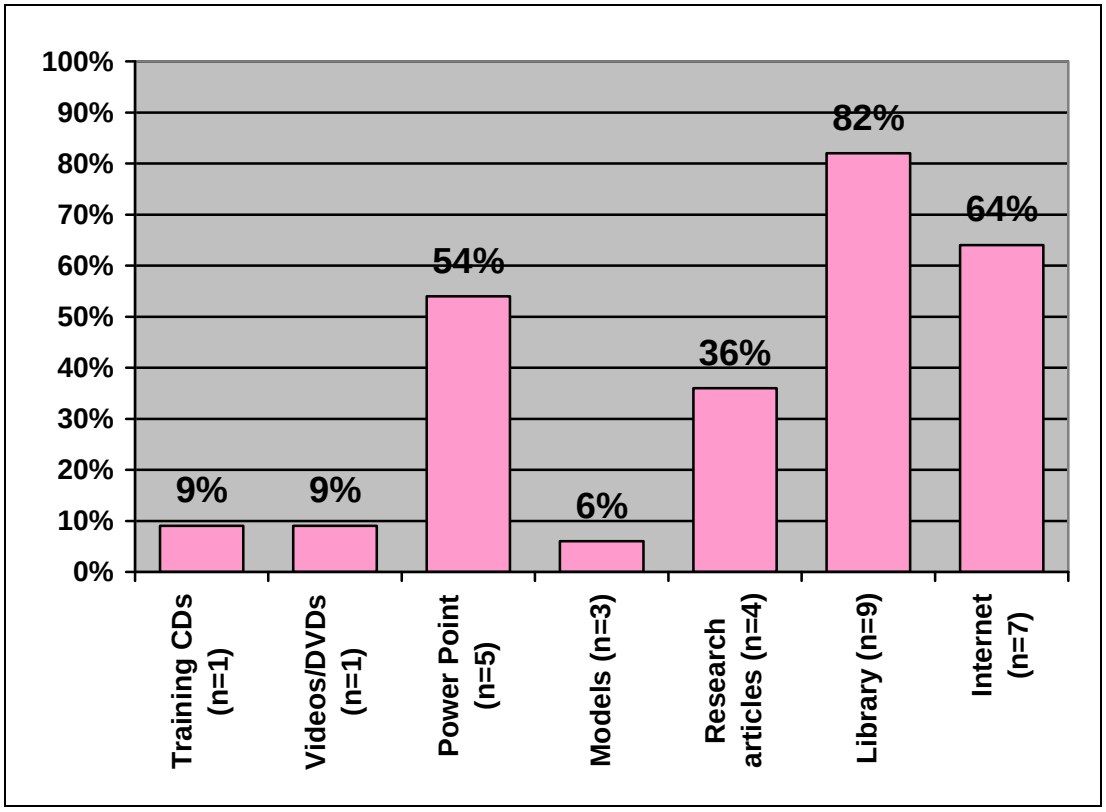

Figure 4.14: How nurse educators provided for students to utilise multimedia (N=11)

Case Studies

The next question pertained to case studies. Students were asked whether case studies were used to develop their problem-solving skills in the classroom. In their response 69% (n=122) of the students indicated that case studies were used and 31% (n=54) indicated that case studies were not used.

According to Figure 4.15 36% (n=44) indicated that known patient studies were used, 19% (n=23) indicated that unknown patient studies were used and 57% (n=70) indicated that problem-based case studies were used.

Some student respondents indicated that more than one type of case study, for example both known and unknown case studies, were used by the nurse educators to develop students' problem-solving skills in the classroom.

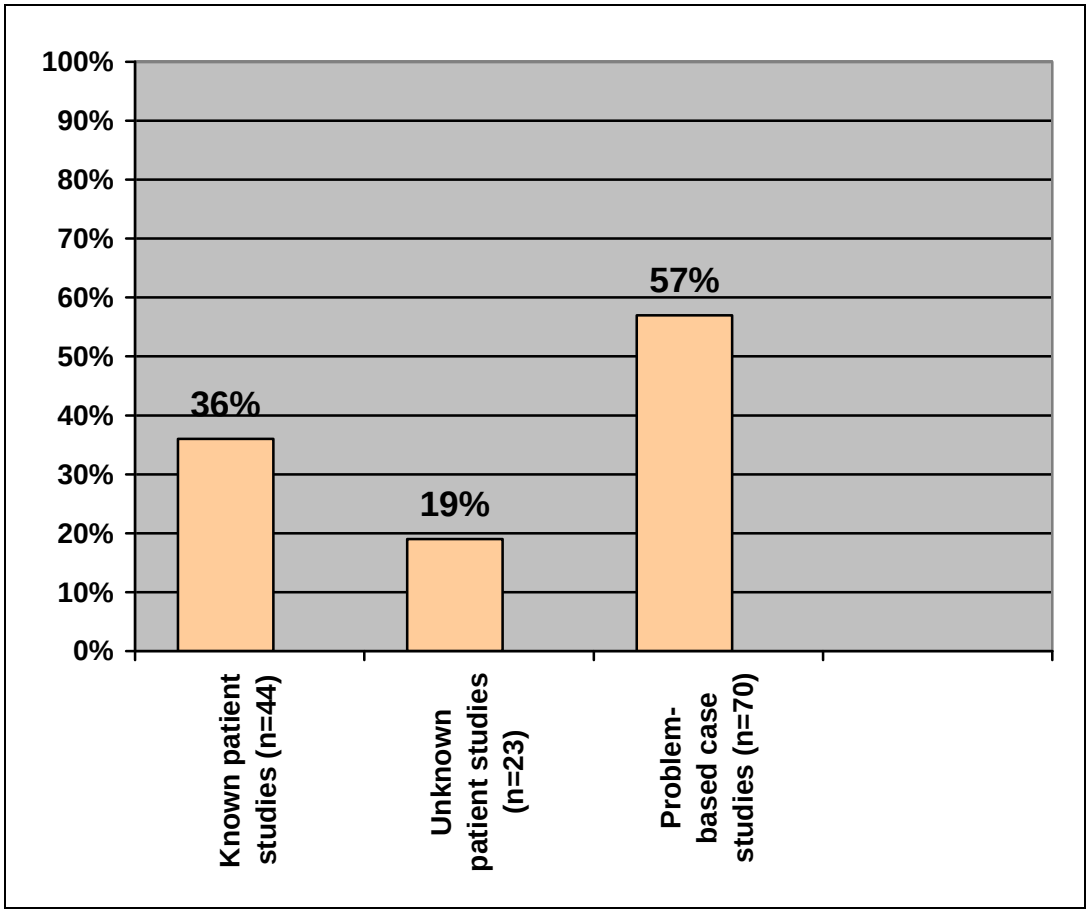

Figure 4.15: Type of case studies used in classroom (N=122)

Scenarios

Another important component within PBL is the use of scenarios. Students were asked to indicate whether or not scenarios were used in the classroom to develop their problem-solving skills. One hundred and seventy-five (175)

students responded to this question. It is reassuring that 94% (n=164) indicated that nurse educators did use scenarios in the classroom and only 6% (n=11) indicated that nurse educators did not.

4.4 DATA ANALYSIS STAGE 3: COMPARISON BETWEEN NURSE EDUCATOR RESPONSES AND STUDENT RESPONSES

In this study person triangulation was used. This involved collecting data from nurse educators and from students with the aim of validating data through multiple perspectives on the phenomena, Stage 3 of data analysis was done to validate the data by comparing the data collected from the nurse educators to that of the data collected from the students.

Educational facilities accessible at the college

Nurse educators and students were asked to indicate the educational facilities they had access to at the college. Their responses are compared in Table 4.16 (p. 74). It is evident that the nurse educators and students were in agreement that the following educational facilities were not accessible at the college:

- Computer lab
- Internet
- Teaching CD discs
- Video conferences

Table 4.16: Comparison between nurse educator responses and student responses on the educational facilities accessible at the college

EDUCATIONAL FACILITY	NURSE EDUCATORS RESPONSE (N=17)	STUDENTS RESPONSE (N=176)
Videos	53% (n=9)	22% (n=39)
Computer lab	0% (n=0)	2% (n=3)
Internet	0% (n=0)	0.6% (n=1)
Teaching CD discs	12% (n=2)	5% (n=8)
Library facilities	65% (n=11)	45% (n=80)
Skills / simulation laboratory	76% (n=13)	44% (n=78)
Facilities for small groups	41% (n=7)	47% (n=82)
Video conferences	0% (n=0)	0% (n=0)

Teaching strategies

According to the data illustrated in Table 4.17 (p. 75) nurse educators and students were in agreement that the following teaching strategies were utilised most or all of the time in the classroom:

- Formal lectures
- Group discussions
- Small group activities

Nurse educators and students also agreed that the Internet, videos and research articles were used the least as teaching strategies in the classroom.

Table 4.17: Comparison between nurse educator responses and student responses to teaching strategies utilised most or all of the time in the classroom

EDUCATIONAL FACILITY	TEACHING STRATEGIES USED MOST OR ALL OF THE TIME	
	NURSE EDUCATORS RESPONSE (N=17)	STUDENTS RESPONSE (N=176)
Formal lectures	59% (n=10)	50% (n=88)
Core lectures	35% (n=6)	32% (n=56)
Group discussions	59% (n=10)	60% (n=106)
Small group activities	41% (n=7)	43% (n=76)
Self-directed learning	24% (n=4)	40% (n=70)
Simulations	18% (n=3)	11% (n=18)
Videos	0% (n=0)	2% (n=4)
Role-play	6% (n=1)	3% (n=5)
Workbooks	35% (n=6)	37% (n=65)
Projects	12% (n=2)	11%(n=19)
Assignments	18% (n=3)	22% (n=38)
Case studies	6% (n=1)	13% (n=23)
Portfolios	35% (n=6)	48% (n=84)
Research articles	0% (n=0)	3% (n=6)

Teaching aids

Nurse educators and students were asked to indicate which teaching aids were utilised in the classroom by the nurse educators. According to Table 4.18 (p. 76) nurse educators and students were in agreement regarding teaching aids utilised most or all of the time in the classroom. The differences identified were, firstly, that 24% (n=4) of nurse educators and 57% (n=101) of student respondents indicated that the overhead projector was utilised most of the time. Secondly, 53% (n=9) of nurse educators and

39% (n=68) of student respondents indicated that Power Point presentations were utilised most of the time.

Table 4.18: Comparison between nurse educators' responses and students' responses to teaching aids utilised most or all of the time in the classroom

TEACHING AIDS	NURSE EDUCATOR RESPONSES (n=17)	STUDENT RESPONSES (n=176)
Posters	24% (n=4)	18% (n=32)
Whiteboard	47% (n=8)	42% (n=73)
Overhead projector	24% (n=8)	57% (n=101)
Training CDs	0% (n=0)	6% (n=8)
Videos/DVDs	0% (n=0)	2% (n=3)
Power Point presentation	53% (n=9)	39% (n=68)
Models	29% (n=5)	19% (n=34)
Research articles	6% (n=1)	4% (n=7)

Utilisation of multimedia when giving assignments

Nurse educators and students were asked to indicate whether or not they encouraged students to utilise multimedia when given assignments. Comparing the data reflected that 71% (n=12) of the nurse educator responses indicated that they did encourage students to utilise multimedia when given assignments. Student respondents agreed with this as an 80% (n=140) response indicated that nurse educators did encourage them to utilise multimedia. On the other hand, only 41% (n=7) of the nurse educators indicated that they actually provided students with multimedia and, according to the students, only 6% (n=11) felt that nurse educators provided them with multimedia.

Case studies and scenarios

Nurse educators and students were asked to indicate if case studies and scenarios were used to develop the students' problem-solving skills. According to the data illustrated in Figure 4.16 nurse educators and students were in agreement, thus validating the data received from the nurse educators.

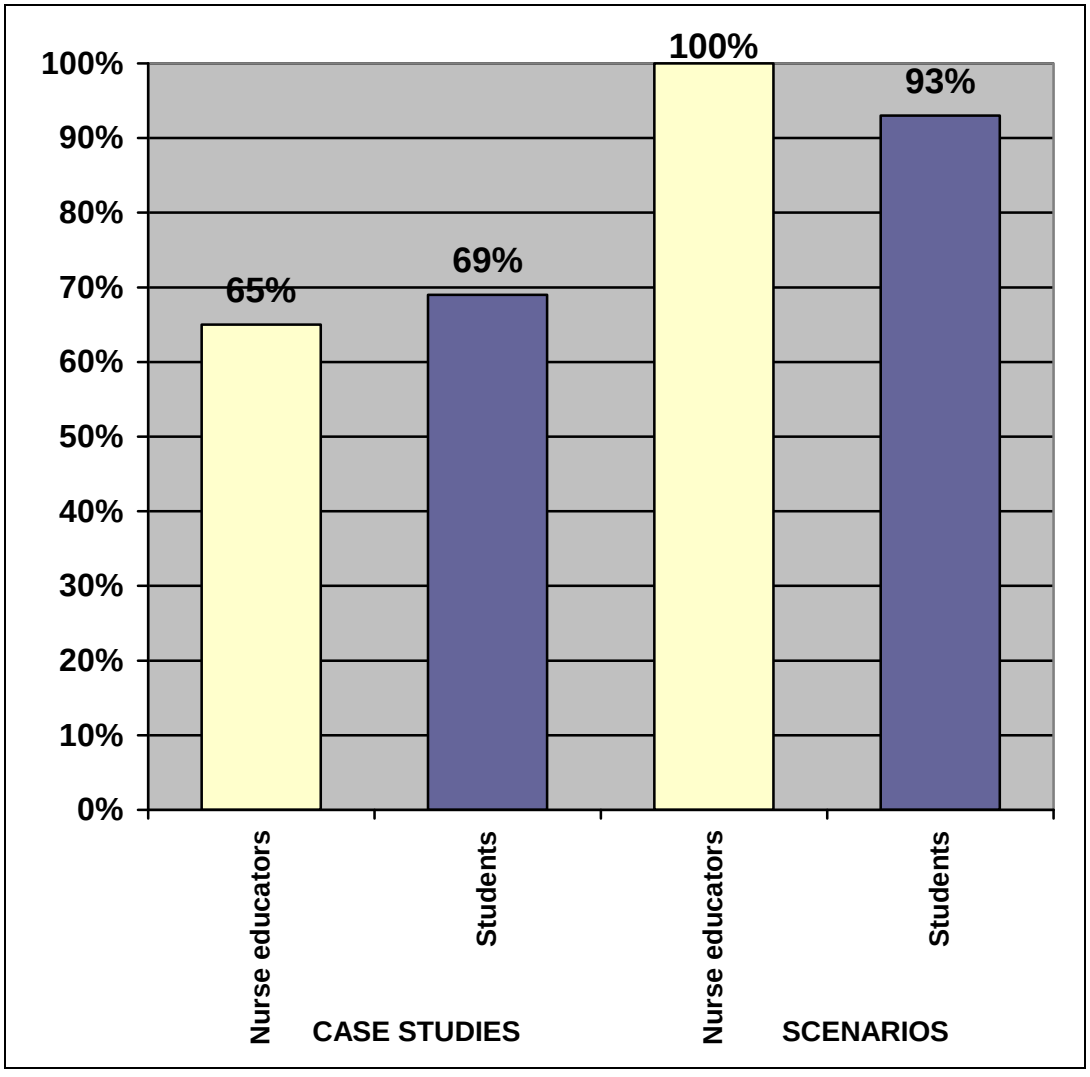

Figure 4.16: The compared responses of nurse educators and students on the utilisation of case studies and scenarios

4.5 CONCLUSION

In Chapter 4 the researcher analysed the data and explored the views of the nurse educators relating to their competence in OBE and PBL teaching strategies in various ways. Person triangulation was used in the study and data were also collected from nursing students with the aim of validating the data. Nursing students' responses were also analysed and compared to that of the nurse educators. Responses were illustrated in pie diagrams, figures and tables to facilitate understanding.

In Chapter 5 the research findings from both the literature review and the respondents' answers will be summarised, implications will be highlighted and shortcomings will be discussed. Recommendations for future studies will also be included in Chapter 5.

CHAPTER 5
SUMMARY OF THE FINDINGS, RECOMMENDATIONS, LIMITATIONS OF THE STUDY AND CONCLUSIONS

5.1 INTRODUCTION

In Chapter 4 the data were analysed, interpreted and discussed according to the arrangement of the questions in the questionnaire. Analysis of the data comprised of three different stages: Stage 1: Nurse educators questionnaire, Stage 2: Students questionnaire and Stage 3: Comparison of nurse educators' and students' responses to validate the data. In this chapter, the researcher will summarise the data, draw conclusions and make recommendations regarding teaching strategies for theory content in OBE and PBL. Recommendations for future research will also be made and limitations regarding this study will be highlighted.

5.2 PURPOSE AND OBJECTIVES OF THE STUDY

The purpose of this study was to explore the extent to which teaching strategies for theory content, utilised by nurse educators at a nursing college in Gauteng, complied with an outcomes- and problem-based nursing education programme and to make suggestions with regard to the appropriate teaching strategies if problems were identified.

Conclusions will be based on the findings of the research study. The conclusions and recommendations will be linked to the research questions and objectives as presented in Chapter 1.

5.3 SUMMARY OF THE RESULTS

Summary of the results will be discussed according to the arrangement of the questions in the questionnaire.

5.3.1 DATA SUMMARY STAGE 1: NURSE EDUCATORS QUESTIONNAIRE

Year of study nurse educators are responsible for

Teaching strategies differ according to the developmental level of the students. First stage students are neophytes and need more assistance and guidance when compared to the fourth stage students. First stage students are inexperienced regarding nursing and need the intensive support and accompaniment of the nurse educators during the first year of their training. Hence, a more traditional approach to education is not uncommon. Prinsloo (2003:35) states that PBL becomes more effective during the second and third year of training. During the fourth year students study speciality subjects, namely Midwifery and Psychiatry. In view of this, the foundation for PBL must be laid during the second and third year of training so that, by the time students reach the final year, their attainment of critical cross-field outcomes should already be evident within their formative assessment results.

According to Figure 4.1 (p. 41) responses varied according to the year stages that nurse educators were responsible for. The highest percentages 35% (n=6) of respondents were nurse educators responsible for the third stage. Third stage learners are senior learners who are accustomed to

nursing training, therefore, it is expected of them to be more self-directed and receive less formal lecturing than first and second year learners.

Subjects nurse educators teach

Theoretical teaching strategies differ depending on the type of subject facilitated, for example Anatomy and Physiology are very factual subjects, and nurse educators' means of facilitating learning could differ. According to Figure 4.2 (p. 42) it is evident that the majority of the nurse educators taught General Nursing Science with a response of 35% (n=6). PBL teaching strategies could effectively be utilised in General Nursing Science. The use of case studies, for example, will enhance the students' problem-solving skills and will be especially effective with the learning content of various medical conditions.

Highest Qualifications

Nurse educators were also asked to indicate their highest qualification from the list provided. The SANC (1993) requires that nurse educators should be registered and hold either a diploma or a degree in Nursing Education to be able to teach nursing students. The researcher wanted to establish if SAMHS Nursing College complied with this regulation as stipulated by the SANC. According to Figure 4.3 (p. 43) the data show that 71% (n=12) of the nurse educators who responded had a Baccalaureate degree in Nursing Education. Only one nurse educator did not have a post basic nursing education qualification.

Years of nursing education experience

Responses differed from twenty-six (26) years' experience to a minimum of one (1) year experience. Of the nurse educators, 76% (n=13) had more than five (5) years of nursing education experience. This implies that they

were competent in facilitating students' learning. The mean experience is 11.5 years with a standard deviation of 6.4 (median).

Curriculation for OBE

According to Figure 4.4 (p. 44) it is reassuring to note that 76% (n=13) of the nurse educators had been exposed to curriculation for OBE, indicating that nurse educators had the necessary knowledge regarding OBE.

Planning of OBE curriculum

It is reassuring that 59% (n=10) of the nurse educators indicated that they had been involved in the planning of the current curriculum. Only 41% (n=7) was not involved.

Training of nurse educators regarding OBE and PBL

The literature reviewed and discussed in Chapter 2 revealed that, for PBL to be implemented successfully, nurse educators should be trained and knowledgeable regarding PBL. According to Table 4.1 (p. 45), nurse educators who received in-service training regarding OBE constituted 65% (n=11). Those who received similar training regarding PBL constituted 47% (n=8).

Training of nurse educators regarding multimedia in nursing education

The graph in Figure 4.5 (p. 46) clearly illustrates that 82% (n=14) of the respondents received training during their education as a nurse educator on how to use multimedia.

Computer skills

It is evident from the literature studied that, in the modern world with the ever-increasing use of information technology and Internet services, nurse educators are required to be computer-literate to be able to practice PBL. Table 4.2 (p. 47) shows that nurse educators utilised computer programmes such as Microsoft Word 65% (n=11) of the time.

The training received by nurse educators corresponds to the statistics of how often they utilised the computer. It is reassuring to see that the majority of nurse educators received training in Microsoft Word, a response of 94% (n=16), followed by training in Microsoft Power Point with a response of 41% (n=7).

Educational facilities accessible at the college

It is evident from Table 4.3 (p. 49), indicated by a nil response [0% (n=0)], that the following educational facilities were not accessible at the college:

- Computer lab
- Internet
- Video conferences

Only 12% (n=2) of the respondents indicated that teaching CD discs were accessible to the nurse educators.

Educational facilities available to the students at the college

Nurse educators were then asked to what extent the aforementioned educational facilities were available to the students at the college. According

to Table 4.4 (p. 50) it is evident that, with a response of 0% (n=0), the following educational facilities were not available to students at the college:

- Computer lab
- Internet
- Video conferences

Only 18% (n=2) of the respondents indicated that teaching CD discs were available to the students. The data from Table 4.4 (p. 50) correlates with that of Table 4.3 (p. 49), confirming that educational facilities not accessible to nurse educators, were also not available to the students at the college.

From the literature studied on OBE and PBL it is clear that, for the successful implementation thereof, students require access to computers and the Internet and these facilities should be made available to students to enhance self-directed learning, as it is an important component of PBL.

Teaching strategies planned and used by nurse educators

In Table 4.5 (p. 51) the data clearly illustrate that formal lectures were still very much utilised by nurse educators as a teaching strategy with a 76% (n=13) response. Only 12% (n=2) indicated that they utilised research articles, which is a concern as it is regarded as an essential part of OBE and PBL.

On the other hand, 82% (n=14) of the nurse educators indicated that they utilised group discussions, 88% (n=15) utilised small group activities and 76% (n=13) utilised self-directed learning. This is reassuring since all these teaching strategies are aspects vital for implementing OBE and PBL successfully.

According to Table 4.6 (p. 53) nurse educators utilised formal lectures and group discussions most or all of the time with a 59% (n=10) response, whereas research articles and videos were not utilised at all [0% (n=0)].

Though nurse educators at SAMHS Nursing College did utilise some OBE and PBL strategies, the inordinate use of traditional teaching strategies are disturbing. According to Table 4.5 (p. 51) formal lectures were planned for 88% (n=15) of the time. This is unsettling since formal lecturing is a traditional teaching strategy and of less importance in an OBE approach to teaching. In addition, the use of research articles was not planned for by the nurse educators. This is another concern as evidence-practice forms an integral part of nursing education today and can be of assistance in PBL strategies to enhance theory and practice correlation.

Nurse educators also indicated that they planned for group discussions, small group activities and SDL, all of which are teaching strategies essential for OBE and PBL. On the other hand, portfolios and workbooks which are also essential teaching strategies for OBE and PBL, were not planned for by the nurse educators.

Teaching aids

According to Table 4.7 (p. 54) teaching aids used most or all of the time in the classroom were whiteboards [47% (n=7)] and Microsoft Power Point presentations [53% (n=9)].

The data according to Table 4.7 (p. 54) also illustrate that the following teaching aids were rarely utilised by nurse educators:

- Videos: 88% (n=15)
- Training CD discs: 76% (n=13)
- Research articles: 76% (n=13)

The above teaching aids could be used to visually illustrate concepts to learners, enhancing understanding of the learning content. Learners can utilise these during their own time thus supporting SDL. The use of research articles is fundamental to the practice of nursing and learners should be exposed to scientific research studies to encourage evidence-practice when they become registered nurses.

Utilisation of multimedia when giving assignments

Figure 4.8 (p. 56) shows that 71% (n=12) of the nurse educators encouraged students to utilise multimedia. However, according to Figure 4.9 (p. 57), only 41% (n=7) of the nurse educators actually provided students with some multimedia when giving assignments. If encouraged by the nurse educators, students become accustomed to review the literature themselves and engage in SDL.

How do nurse educators provide students with multimedia?

Nurse educators were asked to indicate how they encouraged or provided students with multimedia. Nurse educators' responses were coded into important themes. The following themes were identified and illustrated in Figure 4.9 (p. 57):

- Requests from students: Nurse educators only provided for multimedia when requested by a student.
- Referrals: Nurse educators referred students to the library or specific textbooks.
- Computer or Internet: Nurse educators advised students to search websites for information.
- Resources: Nurse educators provided resources, for example models, CD discs and posters.

Case studies

Nurse educators were asked whether or not they used patient or case studies to develop students' problem-solving skills. According to the responses, 65% (n=11) indicated that they made use of patient or case studies. These statistics are reassuring since case studies develop students' critical thinking skills and thus encourage them to solve problems.

Scenarios

Another important component within PBL is the use of scenarios. Nurse educators were asked to indicate whether or not they used scenarios to develop students' problem-solving skills. All seventeen (17) respondents (100%) indicated that they did. This is reassuring since the use of scenarios stimulates critical thinking through problem-solving techniques.

Cognitive skills

The data in Table 4.8 (p. 59) illustrate that 76% (n=13) of the respondents indicated that critical thinking skills is a cognitive skill necessary for PBL. Similarly, 76% (n=13) indicated that integrating theory and practice is an essential component with which to enhance PBL. However, only 47% (n=8) respondents believed that SDL skills are an important aspect for successful PBL. According to the literature reviewed, SDL is an essential part of PBL.

In Table 4.9 (p. 60) the data illustrate that nurse educators preferred to utilise case studies [76% (n=13)] and projects [65% (n=11)] when developing a student's cognitive skills. Workbooks were utilised the least with a response of 29% (n=5).

Competency in OBE

According to Figure 4.12 (p. 63), 47% (n=8) of nurse educator respondents indicated medium competence in utilising OBE educational strategies and an equal number [47% (n=80] indicated that they felt highly competent. Nurse educators indicated that a lack of training and in-service training were reasons why they felt only moderately competent in utilising OBE and PBL teaching strategies. Figure 4.11 (p 61) shows that 67% (n=2) also felt only moderately competent due to the lack of facilities, resources and support.

Utilisation of OBE educational strategies

In the last question nurse educators were asked to indicate whether they utilised OBE educational strategies in the classroom. According to Figure 4.12 (p. 63) 18% (n=3) indicated that they utilised OBE educational strategies all the time and 47% (n=8) indicated utilising it most of the time. It is disconcerting that not even 50% of the nurse educators utilise OBE educational strategies most of the time.

Table 4.11 (p 63) indicates an excessive workload, the lack of facilities and an inconducive environment as reasons given by nurse educators of why they only utlised OBE educational strategies 50% of the time or less.

5.3.2 DATA SUMMARY STAGE 2: STUDENTS QUESTIONNAIRE

Study year of student respondents

The student respondents were distributed fairly and evenly among the different levels of the comprehensive programme. It is obvious from Figure 4.13 (p. 64) that the first stage student respondents comprised the highest percentage, 30% (n=52), of the total one hundred and seventy-six (n=176) student respondents.

Student respondents' age and experience

Student respondents' ages ranged from 19 to 42 years. The mean age was 25 years with a standard deviation of 5.08 (median). Students were asked to indicate their years of nursing experience before they began the four-year comprehensive programme. Responses differed from 0 to 18 years' experience. Mean experience was 2.3 years with a standard deviation of 4.06 (median).

Educational facilities accessible at the college

According to Table 4.12 (p. 66) the following educational facilities were accessible least of all to the students at the college:

- Videos: 22% (n=39)
- Computer lab: 2% (n=3)
- Internet: 0.6% (n=1)
- Teaching CD discs: 5% (n=8)
- Video conferences: 0% (n=0)

Students were asked to what extent the educational facilities were available to them at the college. The data from Table 4.13 (p 67) correlate with that of the previous Table 4.12 (p. 66). Educational facilities not accessible to students, were also not available to the students. From the data it was also evident that 73% (n=128) of the respondents indicated that library facilities were only available at another institution.

According to Table 4.13 (p. 67) only 3% (n=5) of the student sample felt that a computer laboratory was available to them and only 1% (n=2) of the student sample felt that the Internet was available to them. These statistics are of concern. From the literature studied on OBE and PBL it is clear that,

for the successful implementation thereof, students require access to computers and the Internet. These facilities should be made available to students to enhance self-directed learning, which is an important component of PBL.

It is evident from the data illustrated in Table 4.13 (p. 67) that the following educational facilities were not available to the students:

- Videos: 69% (n=121)
- Computer lab: 93% (n=164)
- Internet: 95% (n=168)
- Teaching CD discs: 85% (n=150)
- Video conferences: 92% (n=162)

Teaching strategies utilised by nurse educators in the classrooms

Student responses suggested that the following teaching strategies were utilised most of the time in the classroom:

- Formal lectures: 50% (n=88)
- Group discussions: 60% (n=106)
- Small group activities: 43% (n=76)
- Self-directed learning: 40% (n=70)
- Portfolios: 48% (n=84)

It is reassuring that group discussions, regarded is an important component of PBL, were used most of the time in the classroom.

Teaching aids utilised by nurse educators in the classrooms

The students' responses are illustrated in Table 4.15 (p. 69) and clearly show that the following teaching aids were rarely utilised:

- Posters: 61% (n=107)
- Training CD discs: 94% (n=166)
- Videos/DVDs: 92% (n=162)
- Models: 62% (n=109)
- Research articles: 86% (n=151)

Table 4.15 (p. 69) further indicates that the following teaching aids were utilised most or all of the time:

- Whiteboard: 42% (n=73)
- Overheard projector: 57% (n=101)

When nurse educators utilise various teaching aids the students stay focused and interested. Many of the teaching aids utilised rarely by nurse educators can easily be used to visually illustrate concepts to learners, thereby enhancing understanding of the learning content. By utilising these during their own time, students support SDL. The use of research articles is fundamental to the practice of nursing and learners should be exposed to scientific research studies to encourage evidence-based practice when they become registered nurses.

Utilisation of multimedia when giving assignments

In the next question students were asked to indicate whether or not they were encouraged to utilise multimedia when given assignments and whether or not they were provided with any multimedia. Though 80%

(n=140) indicated that they were encouraged to utilise multimedia, only 6% (n=11) were actually provided with the multimedia to utilise when given assignments. Students were asked to indicate how they were provided with multimedia. According to Figure 4.14 (p. 71) 82% (n=9) of the learners felt they were referred to the library and 64% (n=7) indicated that they were advised to use the Internet. These statistics are unsettling since, according to Table 4.13 (p. 67), the Internet and computer laboratory were not available to the students.

Case Studies

Students were asked whether or not case studies were used to develop their problem-solving skills in the classroom and 69% (n=122) responded that case studies were used, while 31% (n=54) responded that case studies were not used. These statistics are reassuring since case studies develop the students' critical thinking skills and thus encourage them to solve problems.

Scenarios

Another important component within PBL is the use of scenarios. Students were asked to indicate whether or not scenarios were used to develop their problem-solving skills in class. It is reassuring that 94% (n=164) student respondents indicated that nurse educators in the classroom used scenarios. Only 6% (n=11) indicated that it was not used. This is reassuring since the use of scenarios stimulates critical thinking through problem-solving techniques.

5.3.3 DATA SUMMARY STAGE 3: COMPARISON BETWEEN NURSE EDUCATOR RESPONSES AND STUDENT RESPONSES

Person triangulation, which was used in this study, involved collecting data from nurse educators and from students with the aim of validating data through multiple perspectives on the phenomena. Data analysis Stage 3 was done to compare the data from nurse educators and students to validate the data.

Educational facilities accessible at the college

Nurse educators and students were asked to indicate the educational facilities they had access to at the college. According to the compared responses in Table 4.16 (p. 74) it is evident that the nurse educators and students were in agreement and that the following educational facilities were not accessible at the college:

- Computer lab
- Internet
- Teaching CD discs
- Video conference

Teaching strategies

According to the data illustrated in Table 4.17 (p. 75) nurse educators' and students' responses corresponded, showing that the following teaching strategies were utilised most or all of the time in the classroom:

- Formal lectures
- Group discussions
- Small group activities

Nurse educators and students also agreed that the Internet, videos and research articles were used least as teaching strategies in the classroom.

Teaching aids

Nurse educators and students were asked to indicate which teaching aids nurse educators utilised in the classroom. According to Table 4.18 (p. 76) nurse educators' answers were consistent with those of the students regarding teaching aids utilised most or all of the time in the classroom. The differences identified were, firstly, that 24% (n=4) of nurse educators and 57% (n=101) of student respondents indicated that the overhead projector was utilised most of the time. Secondly, 53% (n=9) of nurse educators and 39% (n=68) of student respondents indicated that Power Point presentations were utilised most of the time.

Utilisation of multimedia when giving assignments

Nurse educators and students were asked to indicate whether or not they encouraged students to utilise multimedia when given assignments. The data compared as follows: 71% (n=12) of nurse educator responses indicated that they did encourage students to utilise multimedia when given assignments. Student respondents showed a similar result with an 80% (n=140) response, indicating that nurse educators did encourage them to utilise multimedia. On the other hand, only 41% (n=7) of the nurse educators actually provided students with multimedia. The student response to this effect indicated that only 6% (n=11) felt that nurse educators provided them with multimedia.

Case studies and scenarios

Nurse educators and students were asked to indicate if case studies and scenarios were used to develop the students' problem-solving skills. Figure 4.16 (p 77) shows that both the nurse educators and students agreed that case studies and scenarios were used. This validated the data received from the nurse educators.

5.4 RESEARCH QUESTIONS AND OBJECTIVES

5.4.1 RESEARCH QUESTION 1

Are nurse educators effectively implementing theoretical teaching strategies in an outcomes- and problem-based nursing education programme?

- **CONCLUSION**

Nurse educators did utilise some OBE and PBL strategies, but the high level of the utilisation of traditional teaching strategies raises concern.

5.4.2 RESEARCH QUESTION 2

Are nurse educators experiencing problems when implementing outcomes-based and problem-based teaching strategies?

- **CONCLUSION**

Nurse educators who only utilised OBE educational strategies 50% of the time or less, indicated that reasons for this included excessive workloads, the lack of facilities or an inconducive environment. Nurse educators indicated that a lack of training and in-service training were reasons why

they felt only moderately competent in utilising OBE and PBL teaching strategies. Some also felt only moderately competent due to lack of facilities, resources and support.

5.4.3 RESEARCH OBJECTIVE 1

Establish which teaching strategies have been planned for in the outcomes- and problem-based nursing education programme of a nursing college in Gauteng.

- **CONCLUSION**

Formal lectures were planned for 88% (n=15) of the time. This is of concern since formal lectures is a traditional teaching strategy and of less importance in an OBE approach to teaching. In addition, the use of research articles was not planned for by the nurse educators. This is disturbing since evidence-based practice forms an integral part of nursing education today and can be of assistance in PBL strategies to enhance theory and practice correlation. Nurse educators also indicated that they planned for group discussions, small group activities and SDL, all teaching strategies essential for OBE and PBL. On the other hand portfolios and workbooks, which are important teaching strategies for OBE and PBL, were not planned for by the nurse educators.

5.4.4 RESEARCH OBJECTIVE 2

Establish whether nurse educators use the teaching strategies planned for in the outcomes- and problem-based nursing education programme.

- **CONCLUSION**

It is evident from the data analysed that nurse educators did utilise the teaching strategies they had planned for. Nurse educators at SAMHS Nursing College did utilise some OBE and PBL strategies, yet the use of traditional teaching strategies were high.

The teaching aids utilised in the classroom from the nurse educators' and students' perspectives were the white board and the overhead projector. Teaching aids rarely utilised by nurse educators were videos, training CD discs and research articles. With today's advanced technology many concepts can easily be illustrated to students by making use of these teaching aids. Students can utilise these at their own time and pace to gain a better understanding of the subject content and, in this way, support SDL.

5.4.5 RESEARCH OBJECTIVE 3

Establish whether the planned teaching strategies comply with the outcomes- and problem-based nursing education programme.

- **CONCLUSION**

Teaching strategies planned for and utilised by nurse educators that don't comply with OBE and PBL education programmes, are formal lectures and simulations. Nurse educators should use workbooks, portfolios and case studies to facilitate student learning instead of using traditional methods of teaching, which are teacher-centred.

5.4.6 RESEARCH OBJECTIVE 4

Establish the possible reasons why nurse educators are experiencing problems when implementing the outcomes- and problem-based nursing education programme.

- **CONCLUSION**

Excessive workloads, the lack of facilities and/or an inconducive environment were reasons indicated by nurse educators of why they only utilised OBE educational strategies 50% of the time or less. Nurse educators also gave the lack of training and in-service training as reasons for why they felt only moderately competent when utilising OBE and PBL teaching strategies. Some also felt only moderately competent due to lack of facilities, resources and support.

5.5 RECOMMENDATIONS

- All nurse educators, irrespective of their years of experience in nursing education, should receive continuous training regarding OBE and the implementation of PBL strategies. The nurse educators could implement self-development principles to develop themselves professionally and personally.

- It is suggested that the nursing college have a formal staff development programme to ensure that nurse educators are knowledgeable regarding OBE and PBL teaching strategies, and for them to acquire effective facilitation skills.

- The nursing college should encourage nurse educators to do Nursing Education research to ensure professional growth and knowledge within their speciality field.

- It is recommended for institutions to have a quality assurance department to assess the quality of the education and training of nursing students at their institution.

- Only nurse educators who comply with SANC requirements and have relevant and applicable qualifications should be recruited by nursing colleges.

- Nursing colleges should ensure optimum staffing to prevent excessive workload.

- The continuous training of nurse educators and the implementation of PBL strategies should be supported by the availability and access to educational and technological resources and facilities. Without the necessary resources, it is nearly impossible to follow an OBE learning approach.

- Planning and budgeting by middle and top management should be implemented to ensure availability of resources. The conditions of the teaching environment should be assessed and upgraded.

5.6 LIMITATIONS OF THE STUDY

The following limitations were identified in this study:

- The research findings can only be generalised to SAMHS Nursing College since only this college was used for data collection. Nursing colleges are different settings with diverse problems and the availability of resources varies from institution to institution.

- Nursing education qualifications should have been individually specified in the questionnaire. Respondents should have been able to indicate whether they had specialised in Nursing Education or Nursing Administration since some BCUR IetA qualifications can include both, indicating that some respondents did not necessarily specialise in nursing education and their highest qualifications was a diploma.

- Respondents should have been given more open-ended questions, as this would have allowed for them to explain their views regarding the implementation of OBE in more detail.

- More questions pertaining to the possible challenges faced by nurse educators and students with the implementation of OBE and PBL should have been included in the questionnaire. This would have ensured a better understanding of the reasons why nurse educators did not utilise OBE and PBL teaching strategies.

5.7 VALUE OF THIS STUDY

Nurse educators at SAMHS Nursing College did utilise some OBE and PBL strategies, yet the use of traditional teaching strategies were excessively high. Computer facilities and the Internet were not accessible or available to students at SAMHS Nursing College. From the literature studied on OBE and PBL it is clear that, for the successful implementation thereof, students require access to computers and the Internet. These facilities should be made available to students to enhance self-directed learning, which is an important component of PBL. This study was of value since it helped to identify the problems, and implementing the recommendations could solve these problems.

Although the research was a small-scale study and conducted at only one nursing college in Gauteng, findings can be considered useful to all nurse educators. Problems identified during this study which relate directly to the implementation of theoretical teaching strategies in the OBE and PBL approach to learning, can be prevented in nursing schools or colleges were they *have not* yet been encountered. In nursing schools or colleges where problems addressed in this study *have* been identified, the results of this study can be utilised to improve nursing education proactively at these institutions.

5.8 CONCLUSIVE STATEMENT

From various discussions with colleagues and managers at SAMHS Nursing College where this study was conducted, it was apparent that nurse educators were experiencing problems with implementing OBE due to a variety of reasons. This included a lack of computer skills and training, outdated library facilities, non-implementation or unavailability of educational tools such as the Internet and the lack of resources.

The question raised at the beginning of this study was whether nurse educators can overcome the problems identified in the previous paragraph and still manage to utilise OBE teaching strategies in the classroom, or do they resort once again to traditional strategies? From the literature study done for this research different teaching strategies were discussed. Teaching strategies utilised within an OBE and PBL approach were highlighted and it was determined that resources are crucially necessary for the successful implementation of OBE.

The researcher is of the opinion that the significance of this study would be of more value if the following had been elaborated on:

- More detail from the respondents regarding their views on the implementation of OBE by providing more open-ended questions.

- The possible challenges faced by nurse educators and students when implementing and when planning to implement OBE could have been explored more in-depth if additional questions pertaining to this aspect were asked.

To enable more fruitful future investigations, the researcher suggests in-depth qualitative studies be conducted to explore the challenges faced by nurse educators and students. It is important that nurse educators make use of OBE- and PBL-based teaching methods when facilitating learning. It is the nurse educator's responsibility to educate him or herself with regards to facilitation and he or she should take decisive steps and rise to the challenge. Furthermore, it is the responsibility of the nursing school or college to ensure that the nurse educators employed are suitably qualified and that quality assurance within the college is implemented effectively, with regular quality checks and evaluation of training provided by nurse educators.

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APPENDIX A

LETTER OF EXPLANATION

PARTICIPATION INFORMATION LEAFLET AND INFORMED CONSENT

TITLE

THE UTILISATION OF THEORETICAL TEACHING STRATEGIES WHEN USING AN OUTCOMES- AND PROBLEM-BASED NURSING CURRICULUM

You are invited to take part in this research study**.** This information leaflet is to help you to decide if you would like to participate. If you have any questions regarding this study please do not hesitate to ask the researcher. Your participation is appreciated and important for the improvement of nursing education standards.

WHAT IS THE PURPOSE OF THIS STUDY?

The purpose of this study is to explore the extent to which theoretical teaching strategies utilised by nurse educators at a nursing college in Gauteng comply with an outcomes- and problem-based nursing curriculum.

WHAT IS EXPECTED OF YOU DURING THIS STUDY?

You are expected to complete a research questionnaire. The researcher will be available to answer questions you might have regarding the questionnaire.

HAS THIS STUDY RECEIVED ETHICAL APPROVAL?

The study protocol was submitted to the Research Ethics Committee of the University of Pretoria, Faculty of Health Science. The faculty has granted written approval. Written approval was also granted by SAMHS Nursing College.

WHAT ARE MY RIGHTS AS A PARTICIPANT IN THIS STUDY?

Your participation in this study is entirely voluntary and you can refuse to participate.

MAY ANY OF THESE STUDY PROCEDURES RESULT IN DISCOMFORT OR INCONVENIENCE?

Except for the time to complete the questionnaire, which is estimated to be about 20 minutes, there is no known discomfort or inconvenience related to this study. We appreciate your time.

WHAT ARE THE RISKS INVOLVED IN THIS STUDY?

There are no risks involved in participation in this study.

SOURCE OF ADDITIONAL INFORMATION

If you have any questions regarding this study, please do not hesitate to approach the researcher or her supervisor at the following contact numbers:

Researcher: Mrs A. van Wyngaarden: (012) 674 6437/ 082 461 3887
Supervisor: Dr. S.M. Meyer: (012) 354 2125/ 9

CONFIDENTIALITY

All information obtained during the course of this study is strictly confidential. Data that may be reported in scientific journals will not include any information that identifies you as a participant in this study. No identifying information is to be included on the questionnaire to ensure anonymity.

INFORMED CONSENT

Completion of the questionnaire will imply consent.

APPENDIX B

QUESTIONNAIRE NURSE EDUCATORS

Questionnaire (Nurse educators)

Please indicate by using an "X" next to the appropriate answer.

Questionnaire number

For office use only V1 ☐

Section 1: Demographic factors

1. What year of students are you responsible for in the four-year comprehensive course (R425)?

1st	1
2nd	2
3rd	3
4th	4

V2 ☐

2. Which subjects do you teach in the four-year comprehensive course (R425)?

General Nursing Science	1
Community Nursing Science	2
Physiology/ Pharmacology	3
Psychiatric Nursing Science/ Psychology	4
Midwifery	5

V3 ☐
V4 ☐
V5 ☐
V6 ☐
V7 ☐

3. What is your highest nursing education qualification?

Nursing Education Masters	1
Nursing Education Degree	2
Nursing Education Diploma	3

V8 ☐

4. How many years of experience do you have in nursing education?

_____**years**

V9 ☐

Section 2: Theoretical teaching strategies

1. Have you ever been involved in **curriculation** for outcomes-based education?

Yes	1
No	2

V10 ☐

2. Were you involved in the **planning** of the current curriculum in use? V11 ☐

Yes	1
No	2

3. What training have you received regarding **outcomes-based education**?

Train the Trainer	1
Formal post basic Nursing Education after implementation of OBE	2
In-service training	3
Facilitation course	4
Assessor's course	5
No training received	6

V12 ☐ V13 ☐ V14 ☐ V15 ☐ V16 ☐ V17 ☐

Other:_____

_____

V18 ☐ V19 ☐

4. What training have you received regarding **problem-based learning**?

Train the Trainer	1
Formal post basic Nursing Education after implementation of OBE	2
In-service training	3
Facilitation course	4
Assessor's course	5
No training received	6

V20 ☐ V21 ☐ V22 ☐ V23 ☐ V24 ☐ V25 ☐

Other:_____

_____

V26 ☐ V27 ☐

5. What training have you received regarding the use of **multimedia**?

During education as an nurse educator	1
Formal post basic Nursing Education after implementation of OBE	2
In-service training	3
Formal short courses	4

V28 ☐ V29 ☐ V30 ☐ V31 ☐

Other:_____

_____

6. How often do you utilise the following computer programmes?

	1 Not at all	2 Rarely	3 50% of the time	4 Most of the time	5 All the time
Microsoft Word					
Microsoft Power Point					
Microsoft Excel					

V32 ☐
V33 ☐
V34 ☐

7. What training have you received regarding computer skills?

Microsoft Word	1
Microsoft Power Point	2
Microsoft Excel	3

V35 ☐
V36 ☐
V37 ☐

8. Please indicate the educational facilities you have access to at the college?

Videos	1
Computer lab	2
Internet	3
Teaching CDs/discs	4
Library facilities	5
Skills/ simulation laboratory	6
Facilities for small group discussions	7
Video conferences	8

V38 ☐
V39 ☐
V40 ☐
V41 ☐
V42 ☐
V43 ☐
V44 ☐
V45 ☐

Other:_____

_____

V46 ☐
V47 ☐

9. To what extent is the abovementioned media (8) available to the students at the college?

	1. Available at the college	2. Available at another institution	3. Not available	
Videos				V48
Computer lab				V49
Internet				V50
Teaching CDs/discs				V51
Library facilities				V52
Skills/ simulation laboratory				V53
Facilities for small group discussions				V54
Video conferences				V55

10. What **teaching strategies** have you **planned** for in your micro-curriculum?

Formal lectures	1	V56
Core lectures	2	V57
Group discussions	3	V58
Small group activities	4	V59
Self-directed learning	5	V60
Simulations	6	V61
Videos	7	V62
Role-play	8	V63
Workbooks	9	V64
Projects	10	V65
Assignments	11	V66
Case studies	12	V67
Portfolios	13	V68
Research articles	14	V69

Other:_____

_____ V70 V71

11. What **teaching strategies** are you **utilisng** in the classroom?

Formal lectures	1	V72
Core lectures	2	V73
Group discussions	3	V74
Small group activities	4	V75
Self-directed learning	5	V76
Simulations	6	V77
Videos	7	V78
Role-play	8	V79
Workbooks	9	V80
Projects	10	V81
Assignments	11	V82
Case studies	12	V83
Portfolios	13	V84
Research articles	14	V85

Other:_____ V86

_____ V87

12. Please indicate **how often** you utilise the following **teaching strategies** in the classroom.

	1 Not at all	2 Rarely	3 50% of the time	4 Most of the time	5 All the time	
Formal lectures						V88
Core lectures						V89
Group discussions						V90
Small group activities						V91
Self-directed learning						V92
Simulations						V93
Videos						V94
Role-play						V95
Workbooks						V96
Projects						V97
Assignments						V98
Case studies						V99
Portfolios						V100
Research articles						V101

13. Please indicate how often you utilise the following **teaching aids** in the classroom.

	1 Not at all	2 Rarely	3 50% of the time	4 Most of the time	5 All the time	
Posters						V102
Whiteboard						V103
Overhead projector						V104
Training CDs/discs						V105
Videos/ DVDs						V106
Power Point presentations						V107
Models						V108
Research articles						V109

14.	Do you encourage students to utilise any multimedia when giving assignments? Yes 1 No 2	V110 ☐
15.	Do you provide students with any multimedia when giving assignments? Yes 1 No 2	V111 ☐
16.	If you answered "Yes" to Questions 14 and 15 please indicate how. _____ _____	V112 ☐ V113 ☐ V114 ☐ V115 ☐
17.	Do you use patient or case studies to develop students' problem-solving skills in class? Yes 1 No 2	V116 ☐
18.	If yes, indicate the type of studies you use: Known patient studies 1 Unknown patient studies 2 Problem-based case studies 3	V117 ☐ V118 ☐ V119 ☐
19.	Do you use scenarios to develop students' problem-solving skills in class? Yes 1 No 2	V120 ☐

20. Which cognitive skills, in your opinion, need to be developed to enhance problem-based learning?

Critical thinking skills	1	V121
Self-directed learning skills	2	V122
Integrating knowledge around theoretical and practical issues	3	V123
Problem-solving skills	4	V124
Group skills	5	V125

Other:_____ V126
_____ V127

21. Please indicate which multimedia, in your opinion can be utilised to develop cognitive skills.

Simulations	1	V128
Videos	2	V129
Role-play	3	V130
Workbooks	4	V131
Projects	5	V132
Assignments	6	V133
Case studies	7	V134
Portfolios	8	V135
Evidence-based practice/ research articles	9	V136

Other:_____ V137
_____ V138

22. Please indicate on the scale below how competent you feel in utilising OBE educational strategies?

Low	1	V139
Medium	2	
Highly	3	

23. If you indicated **"Low"** or **"Medium"** please indicate why. V140

_____ V141

_____

24.	Do you utilise OBE educational strategies in the classroom? 1 Not at all | 2 Rarely | 3 50% of the time | 4 Most of the time | 5 All the time	V142 ☐
25.	If not utilised “Most of the time” or “All of the time” please indicate why not. _____ _____ 11 of 11	V143 ☐ V144 ☐

Thank you for your participation.

APPENDIX C
QUESTIONNAIRE STUDENTS

Questionnaire (Students)

Please indicate by using an "X" next to the appropriate answer.

Questionnaire number

For office use only

V1 ☐

Section 1: Demographic factors

1. What year of study are you currently busy with in the four-year comprehensive course (R425)?

1st	1
2nd	2
3rd	3
4th	4

V2 ☐

2. How old are you?

_____**years**

V3 ☐

3. How many years of experience do you have in nursing?

_____**years**

V4 ☐

Section 2: Theoretical teaching strategies

4. Please indicate the educational facilities you have access to at the college?

Videos	1
Computer lab	2
Internet	3
Teaching CDs/discs	4
Library facilities	5
Skills/ simulation laboratory	6
Facilities for small group discussions	7
Video conferences	8

V5 ☐
V6 ☐
V7 ☐
V8 ☐
V9 ☐
V10 ☐
V11 ☐
V12 ☐

Other:_____

_____

V13 ☐
V14 ☐

5. To what extent is the above-mentioned media (8) available to the students at the college?

	1. Available at the college	2. Available at another institution	3. Not available	
Videos				V15
Computer lab				V16
Internet				V17
Teaching CDs/discs				V18
Library facilities				V19
Skills/ simulation laboratory				V20
Facilities for small group discussions				V21
Video conferences				V22

6. Please indicate how often nurse educators utilise the following **teaching strategies** in the classroom.

	1 Not at all	2 Rarely	3 50% of the time	4 Most of the time	5 All the time	
Formal lectures						V23
Core lectures						V24
Group discussions						V25
Small group activities						V26
Self-directed learning						V27
Simulations						V28
Videos						V29
Role-play						V30
Workbooks						V31
Projects						V32
Assignments						V33
Case studies						V34
Portfolios						V35
Research articles						V36

7. Please indicate how often nurse educators utilise the following **teaching aids** in the classroom.

	1 Not at all	2 Rarely	3 50% of the time	4 Most of the time	5 All the time	
Posters						V37
Whiteboard						V38
Overhead projector						V39
Training CDs/discs						V40
Videos/ DVDs						V41
Power Point presentations						V42
Models						V43
Research articles						V44

8. Are you encouraged to utilise any multimedia when given assignments? V45 ☐

Yes	1
No	2

9. Are you provided with any multimedia when given assignments? V46 ☐

Yes	1
No	2

10. If you answered "Yes" in Questions 8 or 9 please indicate how.

Training CDs/discs	1	V47 ☐
Videos/ DVDs	2	V48 ☐
Power Point presentations	3	V49 ☐
Models	4	V50 ☐
Research articles	5	V51 ☐
Library	6	V52 ☐
Internet	7	V53 ☐

11. Are patient or case studies used to develop your problem solving skills in class? V54 ☐

Yes	1
No	2

12. If "Yes", indicate the type of studies used:

Known patient studies	1	V55 ☐
Unknown patient studies	2	V56 ☐
Problem-based case studies	3	V57 ☐

13. Are scenarios used to develop your problem-solving skills in class? V58 ☐

Yes	1
No	2

Thank you for your participation.

APPENDIX D

LETTER TO REQUEST PERMISSION FOR THE RESEARCH PROJECT

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

RESTRICTED

Telephone: 012 674 6437
Fax: 012 674 6347
Enquiries: Capt A. van Wyngaarden

Nursing College
Private Bag X 1022
Thaba Tshwane
0143
30 October 2007

Director Nursing

REQUEST FOR PERMISSION TO CONDUCT RESEARCH IN SAMHS NURSING COLLEGE FACILITIES: RESEARCH TOPIC: The utilization of theoretical teaching strategies when using an outcomes- and problem-based nursing curriculum.

1. I, 89765663PE Capt A. van Wyngaarden am presently studying for the M Cur Advanced Nursing Education Degree at the University of Pretoria.

2. Your written approval is required to be able to conduct research within SAMHS Nursing College facilities. Approval is currently awaited from the University of which a copy will be forwarded on receipt. Include please find a copy of my research proposal.

3. The aim of the study is to investigate what teaching strategies nurse educators at a Nursing College in Gauteng are currently utilizing where an outcomes- and problem-based nursing curriculum has been implemented. If it is established that the strategies used for teaching are not appropriate, suggestions to change the situation can be made, which may improve nursing education and assist nurse educators to execute their tasks.

4. If permission is granted then I will ensure that:

   a. All information with regards to the college will be treated as confidential.
   b. SAMHS Nursing College name will not be mentioned in the research without written consent from the organisation.
   c. SAMHS Nursing College will receive a copy of the complete research, when the tertiary institution finally approves it, where applicable.
   d. I will comply with the legal requirements regarding respondent's rights and confidentiality.

5. Your positive consideration will be highly appreciated.

A Wyngaarden

(A. VAN WYNGAARDEN)
FOURTH STAGEFACILITATOR: CAPT

Comments: Approved

(J.F.M. MABONA)
OFFICER COMMANDING SAMHS NURSING COLLEGE: COL

Comments: Approved. Ethical conduct must be maintained. The request must be shared with D Nursing.

Madlala.
(N.C. ~~MDLALA~~-MSIMANGO)
DIRECTOR NURSING: BRIG GEN

AVW/AVW

DISTR

For Action

Office of the SG
Director Nursing

For Info

OC SAMHS Nursing College

APPENDIX E

LETTER OF PERMISSION SAMHS

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

sa military health service

Department:
Defence
REPUBLIC OF SOUTH AFRICA

Telephone: (012) 367 9151
Facsimile: (012) 367 9173
Enquiries: Brig Gen N.C. Madlala-Msimango

Office of the Surgeon General
Private Bag X102
Centurion
0046
29 November 2007

M Cur Advanced Nursing Education Degree section
University of Pretoria

Dear Sir/Madam

REQUEST FOR PERMISSION TO CONDUCT RESEARCH IN SAMHS NURSING COLLEGE FACILITIES: RESEARCH TOPIC: THE UTILISATION OF THEORETICAL TEACHING STRATEGIES WHEN USING AN OUTCOMES- AND PROBLEM-BASED NURSING CURRICULUM

1. Permission is hereby given to 89765663PE Capt A. van Wyngaarden to conduct research in the SAMHS nursing college facilities as indicated by the research topic.

2. She is currently studying with your institution.

3. Care must be taken to observe research ethics.

Brig Gen.

(N.C. MADLALA-MSIMANGO)
pp **SURGEON GENERAL: LT GEN**

World-class Clinical Service

APPENDIX F

APPROVAL FROM FACULTY HEALTH SCIENCES RESEARCH ETHICS COMMITTEE

University of Pretoria

31 Bophelo Road
HW Snyman South Building
Level 2, Room 2.33

P O Box 667
Pretoria
0001

Faculty of Health Sciences Research Ethics Committee
University of Pretoria
Tel: 012 354 1677 **Fax to E-Mail:** 086 6516047
E-Mail: deepeka.behari@up.ac.za
Date: 3/01/2008

Number	:	**S267/2007**
Title	:	Theoretical teaching strategies in an outcomes- and problem-based nursing education programme
Investigator	:	A van Wyngaarden, Department of Nursing Science, University of Pretoria (SUPERVISORS: DR S M MEYER / MS C E VAN VELDEN)
Sponsor	:	**None**
Study Degree:		**M. Cur Advanced Nursing Education**

This Student Protocol has been considered by the Faculty of Health Sciences Research Ethics Committee, University of Pretoria on 3/01/2008 and found to be acceptable.

Advocate AG Nienaber	(female)BA(Hons) (Wits); LLB; LLM (UP); Dipl.Datametrics (UNISA)
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Dr N K Likibi	MB.BCh.; Med.Adviser (Gauteng Dept.of Health)
Snr Sr J. Phatoli	(female) BCur (Et.Al) Senior Nursing-Sister
Dr L Schoeman	(female) Bpharm, BA Hons (Psy), PhD
Dr R Sommers	(female) MBChB; M.Med (Int); MPhar.Med;
Prof C W van Staden	MBChB; Mmed (Psych); MD; FTCL; UPLM; Dept of Psychiatry
Prof TJP Swart	BChD, MSc (Odont), MChD (Oral Path) Senior Specialist; Oral Pathology
Dr AP van der Walt	BChD, DGA (Pret) Director: Clinical Services, Pretoria Academic Hospital
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Dr S I Cronje	DD (UP) – Old Testament Theology
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