Teaching strategies to facilitate active learning in a private nursing education institution

by

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DECLARATION:

In accordance with Rule G5.6.3, I hereby declare that the above-mentioned treatise/dissertation/thesis is my own work and that it has not previously been submitted for assessment to another University or for another qualification.

SIGNATURE: [Signature]

DATE: 27.01.2017
I dedicate this research study to my late parents,

Mohammed Choonara

&

Koolsom Choonara

You were the best parents any child could wish for

May the Almighty grant you both Jannatul-firdous Insha-Allah
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ABSTRACT

Nurse educators are the custodians of nursing education and are faced with the task of providing quality nursing education in a way that inspires and enhances learning. The approach to teaching has moved away from the traditional teacher centre approach to a more student centred, active learning approach. Nurse educators are faced with many challenges, such as creating a learning environment that is conducive to a new and diverse generation of students who have different needs, learning styles and expectations. It is therefore important that the nurse educators strive to enhance the overall learning experience by incorporating teaching strategies that engage students as active participants in the learning process.

This study followed a quantitative, descriptive, exploratory and contextual research design in order to determine the activities, educational resources and teaching strategies used to facilitate active learning in a private nursing education institution. The target population was comprised of student nurses registered at the private nursing education institution. The data was collected by means of a self-administered questionnaire from 721 participants at learning centres throughout the country. The statistician used Statistica Version 12 to obtain both a descriptive and a statistical summary of the data. Descriptive statistics were used to describe the common features of the data used and the findings were discussed and summarized in tables and graphs. The ethical principles of informed consent, confidentiality and anonymity, beneficence, non-maleficence, veracity and justice have been maintained throughout this study. This study was conducted in one private nursing education institution in South Africa and only focussed on student nurses.

The findings were that the greater majority of the students were encouraged to actively participate in the classroom. Students voiced their preference regarding the activities and teaching strategies utilized. There is disparity and inequality regarding the availability of educational media, resources and facilities. A variety of teaching strategies were utilized in the classrooms of the private NEI, but the use of technology based teaching strategies was limited. Information obtained from nurse educators could provide clarity on their use of teaching strategies to facilitate active learning in the classroom or at least highlight gaps in their knowledge that could help to facilitate training for nurse educators.
Based on the findings of the study, recommendations for nursing practice, research and nursing education were made. The main recommendations for nursing education include the continuation of active learning activities given by the nurse educators in the classroom. Nurse educators to take cognisance of the students’ preferences and justify their selection of teaching strategies. The private NEI should ensure the availability and accessibility of educational resources, multimedia and facilities that are essential in teaching students to become self-directed, independent practitioners. Opportunities should be made available for nurse educators to attend seminars or workshops on the use of technology-based teaching strategies and undergo training in the utilization of different strategies that can enhance active learning. This could be included as a mandatory module of the nurse educators’ continuous professional development.

**Keywords:**

Participative learning
Students
Classroom
Teaching methods
Innovative learning
Innovative teaching strategies
Millennials
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<tbody>
<tr>
<td>AACN</td>
<td>American Association of Colleges of Nursing</td>
</tr>
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<td>AC</td>
<td>Associated classroom</td>
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<td>ASHE</td>
<td>Association for the Study of Higher Education</td>
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<tr>
<td>CA</td>
<td>Critical analysis of journal articles</td>
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<td>CE</td>
<td>Clinical examples</td>
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<td>CHE</td>
<td>Council for Higher Education</td>
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<td>CINAHL</td>
<td>Cumulative Index to Nursing and Allied Health Literature</td>
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<td>CS</td>
<td>Case studies</td>
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<td>DB</td>
<td>Debates</td>
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<td>DM</td>
<td>Demonstrations</td>
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<td>DoH</td>
<td>Department of Health</td>
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<td>FUNDISA</td>
<td>Forum of University Nursing Deans in South Africa</td>
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<td>GA</td>
<td>Games</td>
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<td>GD</td>
<td>Group discussion</td>
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<td>Logic puzzles</td>
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<td>MEDLINE</td>
<td>Medical Literature Online</td>
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<td>MM</td>
<td>Mind mapping</td>
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<tr>
<td>N/ST</td>
<td>Narratives/ Story telling</td>
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<tr>
<td>NEI</td>
<td>Nursing education institution</td>
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<tr>
<td>NLN</td>
<td>National League for Nursing</td>
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<td>NLNAC</td>
<td>National League for Nursing Accrediting Commission</td>
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<td>NQF</td>
<td>National Qualifications Framework</td>
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<tr>
<td>ODA</td>
<td>Operating Department Assistance</td>
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<td>PAL</td>
<td>Peer assisted learning</td>
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<td>QAA</td>
<td>Quality Assurance Agency for Higher Education</td>
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<td>RD</td>
<td>Reflection dialogue</td>
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<td>Reflective journals</td>
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<td>SANC</td>
<td>South African Nursing Council</td>
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<td>Self-administered questionnaires</td>
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<td>South African Qualifications Authority</td>
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CHAPTER 1

OVERVIEW OF THE RESEARCH STUDY

1.1 INTRODUCTION

Nurse educators have an unwritten social contract with society to produce nurse graduates who are able to demonstrate a positive attitude towards others, function independently, utilize critical thinking and problem solving skills and who possess comprehensive knowledge, demonstrate decision making skills and can make sound clinical practice judgements. Nurse educators are faced with many challenges such as creating an environment that is conducive to learning while still meeting the demands of a rigorous program. In the classroom environment, nurse educators are confronted with a diverse group of individuals with different socio-economic backgrounds, age, language, personalities, cultures, beliefs, traditions as well as different learning styles and different levels of digital or language literacy. Individuals may also vary from neophytes who have just completed their matriculation certificate to older students who have past nursing experience. It is a known fact that people learn better when they are active in the process of learning, so it is therefore important for nurse educators to select appropriate teaching strategies that will encourage active engagement of all students in all learning environments e.g. classrooms.

1.2 BACKGROUND OF THE STUDY

In recent years, the approach to teaching has moved away from the traditional teacher centred approach to a more student centred, active learning approach (Revell & McCurry, 2010:272). The attention has been focussed on understanding how students learn. It is also important in nursing where students are expected to link prior knowledge with new knowledge in order to make rational decisions in clinical practice (Taie, 2014:11). Students should be encouraged to think at a higher cognitive level whilst participating in the activities to foster deeper understanding and promote active and critical thinking (Haack, 2008:395). It requires nurse educators to allow the students to challenge the course content through their interactions with their peers or themselves (Wrye, 2012:141).
1.2.1 Teacher centred approach

In the teacher centred approach, the role of the educator is to be the fountain of knowledge and to convey information to students “on a platter” (Fraser, 2012:1). The students feel distanced from the content presented to them by the so-called experts and take little or no ownership of learning the reasons for doing things. They often struggle to integrate the content into their existing knowledge base or practice (Clynes, 2009:22). Very often, students resort to rote learning just to pass exams or tests. If asked why they behave or react in a certain way to a specific situation, they will respond that it is because the lecturer told them to do it that way.

The educator thus plays the main role and decides what, when, where, how and by whom the information will be taught, with the student being a passive recipient of the educators’ knowledge and wisdom (Ahmed, 2013:22; Bradshaw & Lowenstein, 2007:110; Zohrabi, Torabi & Bayboudi, 2012:18). The educator is responsible for designing, presenting or strictly adhering to the curriculum. They set tasks, dictate the teaching methods and formulate the different forms of assessment (Ahmed, 2013:22; Attard Di Ioio, Geven & Santa, 2010:8). The educator is the students’ chief source of information and there is an expectation that the educator has all the answers, thus students feel that they have no control over their own learning and do not actively participate in the learning process (Ahmed, 2013:22; Attard, et al., 2010:8; Clynes, 2008:22; Michel, Cater & Varela, 2009:55). The educator is the transmitter of knowledge (Al-Zu'be, 2013:25) whilst the student is placed in the role of a spectator, so they don’t question the content or the authenticity of the application (Story & Butts, 2010:291). No independent discovery, application to the present context or innovative practices take place (Clynes, 2009:22), resulting in the students becoming followers who are not able to function independently (Meyer & van Niekerk, 2008:63). It is not unusual to see the desks and chairs arranged into neat rows facing the chalkboard and the educator lecturing in the front of the classroom while students are focused on taking notes (Hackathorn, Solomon, Blankmeyer, Tennial & Gargcynski, 2011:40; Toh, 1994:12; Wright, 2011:93).

A limitation of the teacher centred approach is its inability to hold the students’ attention and it is therefore not uncommon for students to lose concentration, drift off to sleep or become distracted and either engage in conversations or play games on
their phones during teaching sessions (Dorestani, 2005:1; Michel et al., 2009:55). In traditional classrooms there is little or no noise due to the fact that it was originally thought that a noisy classroom means that the educator is unable to control their class. Whilst the educator is giving the information, the students write it down, resulting in a relatively quiet classroom (Al-Zu'be, 2013:25; Zohrabi et al., 2012:20). A study conducted by Steward, Brown, Clavier and Wyatt (2011:5) suggests that educators who are passionate and spend more time on classroom teaching are more likely to utilize teaching strategies that engage students in the learning process.

1.2.2 Student centred approach

In contrast to the teacher centred approach, the student centred, active learning approach moves away from the traditional approach towards one that places the student at the centre of the learning process and places the emphasis on the student learning rather than the teachers teaching (Attard et al., 2010:9; Michael, 2006:160; Sleem & Gheith, 2012:4467; Wohlfarth, Sheras, Bennett, Simon & Pimentel, 2008:67; Zohrabi et al., 2012:18). There is a shift in focus from the educator to the students, with the students taking a shared responsibility in their own learning. This encompasses what they learn, how they learn, why they learn something and when they learn it, thus making the students active participants in the learning process (Ahmed, 2013:22; Attard et al., 2010:9; Jones, 2007:2). The educator’s role is that of a facilitator and guide rather than as an instructor and/or the main source of knowledge (Al-Zu’be, 2013:24; Attard et al., 2010:9). Weimer (2002) as cited by Wright (2011:93) pointed out that in the student centred classroom, the role of the educator changes from the “sage on the stage” to the “guide on the side” who views the students not as empty vessels to be filled with knowledge, but rather as enquirers to be guided along their educational journey. The educator guides the students, taking cognisance of their interests, needs, learning styles and uses this to direct their learning appropriately (Al-Zu’be, 2013:24; Jones, 2007:2), thus providing the students with opportunities to learn independently and from one another and coaches them in the skills they need to do so effectively (Michael, 2006:160).

A student centred classroom environment promotes learning at a higher level, which includes analysis, synthesis and evaluation (Dutra, 2013:2). The environment is one in which the students are encouraged to ask questions and be inquisitive, putting the
focus on what the students are doing and helping them to learn from their practical experiences. Through introspection and discussions with their peers and educator, they are able to reflect on what they’ve learnt (Attard et al., 2010:9; Michael, 2006:160; Ramsey & Fitzgibbons, 2005:335). Lecture notes and power point presentations have been replaced with a more active, engaging, collaborative style of teaching. Now groups of peers debate treatment modalities and examine relevant case studies (Wohlfarth et al., 2008:68). Students no longer solely rely on their educator for direction, guidance or words of approval, instead they are afforded the opportunity to explore, discover on their own as well as support, collaborate, share and compare their ideas with their peers and educator (Al-Zu'be, 2013:28; Attard et al., 2010:9; Jones, 2007:2). The desks and chairs are arranged in circles or small groups rather than in straight rows that face the educator. This new arrangement allows the students to work independently, in pairs or in groups (Jones, 2007:2; Toh, 1994:12). The class is noisy as students are busy with numerous activities such as brainstorming and sharing their ideas, voicing their opinions, discussing their answers or interacting with the educator (Jones, 2007:2). Abbott, (2013: para. 8) pointed out that one of the basic features of student centred learning is that the learning process is not restricted to the traditional classroom. Students are now given the freedom to make choices about their own learning environment and have the opportunity to study at any time and from anywhere, even through online courses. To summarise, Chickering and Gamson (1987:4) state that;

“Learning is not a spectator sport. Students do not learn much just by sitting in classes listening to teachers, memorizing pre-packaged assignments, and spitting out answers. They must talk about what they are learning, write about it, relate it to past experiences and apply it to their daily lives. They must make what they learn part of themselves”.

1.2.3 Generational diversity

A typical classroom in nursing colleges at the moment, consist of students of different generations, each with their own viewpoints, learning styles and needs (Billings & Halstead, 2012:16). Nurse educators are challenged to use a variety of teaching strategies that will meet the different learning styles, namely visual, auditory, cognitive and kinaesthetic, in order to accommodate all the students’ (Boctor, 2013:97). Visual students prefer methods of learning that include pictures,
videos and flowcharts with step-by-step directions. Auditory learners enjoy listening to lectures while cognitive learners like to read, write and put information into their own words. The kinaesthetic learners prefer a hands-on approach to learning and enjoy activities such as role playing and demonstrations (Bastable, 2008:137; Boctor, 2013:97).

In nursing, students have a responsibility to master an extensive volume of information relating to different disciplines as set out in the curriculum within a relatively short period of time. This is often the reason why they resort to rather memorizing facts without internalizing the information (Bowles, 2006:1). The nurse educator has to take cognizance of the differences in students learning history, age and learning styles and be prepared to accommodate the different needs of the student by creating an active learning environment that is versatile, thought provoking, motivating, fascinating, captivating, and involve the students in the learning process. This has to be done so that they are capable of applying the pertinent information in their everyday professional lives and clinical practice (Michael, 2006: 163; Royse & Newton, 2007: 265). The National League for Nursing (NLN) (2012: para. 1-10) describes core competencies for nurse educators, with competencies 1 and 2 relating to the facilitation of learning and learner development. It suggests, as mentioned above, that nurse educators be aware of the impact that teaching strategies have on the individual learning styles of students and must create a learning environment with adequate resources that will meet the unique individual needs of the diverse student population (Billings & Halstead, 2012:11; NLN, 2012: para. 3-4).

Skiba and Barton (2006: para. 3) suggested that a population can be classified into age groups based on the era when they were born. Educators need to understand this as it impacts on the way in which they facilitate learning when addressing a diverse group of students.

For the purpose of this study, the classification of the age groups will include baby boomers (born 1940s-1960s); generation X (born 1960s-1980s) and the millennials who were born between the 1980s-2000 (Codrington & Grant-Marshall, 2004:1). Different age groups respond differently to varying teaching methods e.g. baby boomers were accustomed to the lecture method of teaching and depended on their
lecturers for information. They prefer taking notes rather than having to learn via the internet (Johnson & Romanello, 2005:214). Clynes (2009:25) found that the interaction of these students during a lecture was very limited. In general, baby boomers see technology as something that is “nice to have,” but not necessary because they managed without it in the past (Mangold, 2007:21). The author further states that this group wants to know the “what” and “how” before learning the “why” and tend to be more process oriented rather than outcome oriented (Mangold, 2007:23). They prefer structured environments and clear guidelines (Bell, 2013: 208). They are also achievement oriented, focusing on their grades and what they need to do to accomplish a good grade (Johnson & Romanello, 2005:214).

Generation X often prefers working through a task on their own and in their own way. How the task is completed is not important, what is important is that the task gets completed (Paterson, 2010:70). This generation is very flexible and want learning to be fun. They learn through active methods and enjoy visual learning with clear, simple images to illustrate the point (Paterson, 2010:71). They prefer self-directed learning, role playing and immediate feedback. It is also important to their self-esteem to be in a learning environment where they can demonstrate their expertise (Bell, 2013: 208). Information should be presented in a direct expert manner, thereby enabling them to absorb the information quickly and easily (Johnson & Romanello, 2005:214). The X Generation is described as being culturally independent, resourceful, and comfortable with technology, preferring diversity and speed (Borges, Manuel, Elam & Jones, 2006: 572).

On the other hand, the millennial generation (sometimes called the Y-Generation), who are born between 1980 and 2000 are used to doing things differently and prefer the interactive nature of technology and media (Revell & McCurry, 2010:272). The ‘millennials’ are technologically savvy and are capable of multi-tasking. Therefore it is not unusual for this generation of students to be switching between numerous activities and technologies at any given time i.e. conversing on Instant Messenger, composing a homework assignment on computer, listening to an iPod, and answering a cell phone. Ironically they often have difficulty focusing on just one activity at a time (Boctor, 2013:96; Mangold, 2007:23; Oblinger & Oblinger, 2005:20; Pardue & Morgan, 2008:75; Skiba & Barton, 2006: para. 5). The utilization of digital
media and e-learning programs to facilitate learning would be perfect for this group of students (Mangold, 2007:22). The ‘millennials’ expect immediate answers as they are used to using the internet and having access to information 24/7. They are very resourceful and prefer to get a journal or article straight off the Web rather than searching for it in a library (Johanson, 2012:175; Johnson & Romanello, 2005:214). They respond best to experiential activities such as trial-and-error tests, group activities and enjoy role playing. Problem-based activities, case studies, scenarios, simulations, student presentations and peer collaborations are all useful learning methods (Bell, 2013: 209; McCurry & Martins, 2010:277; Revell & McCurry, 2010:272).

The use of group discussions and small group work promotes active engagement between the students during the learning process (Johnson, 2011:20). An innovative teaching strategy such as gaming, creates a competitive environment, promotes interest and increases the motivation of students (Royse & Newton, 2007:266). In a study by Johnson (2011:28), it was found that the utilization of active learning strategies in the classroom provided opportunities for the students to co-operate and collaborate with their peers when accomplishing goals or solving problems and thus enhanced their motivation and improved their self–confidence.

There is no specific teaching strategy that will be the preferred learning method when teaching a classroom of diverse students (Royse & Newton, 2007:266). Johnson and Romanello (2011:214) posit the use of different teaching strategies, activities and educational resources to accommodate the learning styles and needs of the diverse student population. Nurse educators should therefore adapt and develop their teaching strategies to be interactive, stimulating, provide experiential learning opportunities and which will facilitate active learning in order to meet the generational diversity and learning needs of the students in the classroom (Bell, 2013:208; Boctor, 2013:96; Elam, Stratton & Gibson, 2007: 24; Paterson, 2010:72).

1.2.4 Transformation of nursing education

The American Association of Colleges of Nursing (AACN) encourages nurse educators to understand learning and to apply that knowledge in determining both what to teach and how to teach (AACN, 2005:21). The focus should not only be on
the content or the “what” students are learning, but of equal importance is the process or “how” learning takes place. The AACN as well as the National League for Nursing Accrediting Commission (NLNAC) acknowledges that critical thinking is an essential competency of nursing graduates and advocate the incorporation of innovative teaching and learning strategies as a means to enhance the learning ability of a diverse student population (AACN, 2005:14-37; NLNAC, 2012:11).

The National League for Nursing (NLN) in addition, urges that nurse educators move away from the current practice, which focuses on content, to a more processed approach of teaching and learning (NLN, 2003: para. 33). The NLN further challenged nurse educators to validate the underlying assumptions of current teaching practices, whilst the AACN proposed that research be conducted on various educational strategies in order to understand the phenomena of teaching and learning better (AACN, 2005: 20; NLN, 2005: para. 4). The NLN’s 2005 position statement, ‘Transforming Nursing Education’, states the importance of involving students as active participants in the educational process and of taking cognisance of individual learning needs (NLN, 2005: para. 1). Recommendations made by the NLN in this document, include nurse educators taking the lead in innovation and basing their teaching practices on current research findings (NLN, 2005: para. 22).

Recently, changes were made to the health and higher education policy. Nursing education no longer falls under the Department of Health (DoH), but instead has been moved to the Ministry of Education, as provided for by the Higher Education Act No. 101 of 1997. This has been instrumental in the transformation of nursing education in South Africa and has resulted in nursing education being recognised as having the same higher education status as other professions (Mekwa, 2000:275; Ricks & Van Rooyen, 2013:23). The Higher Education Act (101 of 1997: chapter 1.1:8), defines higher education as “all learning programmes leading to a qualification that meets the requirements of the Higher Education Qualifications Framework”. Nursing education institutions (NEIs) are required to meet the requirements for registration with the Department of Higher Education and Training, as well as meeting the accreditation criteria of the Council for Higher Education (CHE) and Umalusi (Council for General and Further Education and Training).
In July 2011 the Minister of Health, Dr Aaron Motsoaledi, appointed a special Ministerial Task Team on Nursing Education and Training to develop a detailed strategy and plan for nursing education and training reform. This resulted in the development of the Nursing Education and Training Strategic Plan 2012/13 – 2016/2017, in which Strategic priority 2.2 (DOH, 2012:39) recommends that a core competency for prospective nurse educators should include teaching and learning methodologies as well as knowledge of technology as an education tool. The strategic plan further emphasizes the integration of theory and practice using clinical (case studies), problem-based learning and work-based learning (DOH, 2012:87). In addition the Forum of University Nursing Deans in South Africa (FUNDISA) encourages the creation of research projects involving innovative teaching and learning strategies (Van Rooyen, 2012:148).

Ricks and Van Rooyen (2013:25), state that nurse educators should incorporate teaching strategies that enhance learning and effectively prepare nurses to function as independent, critical thinking practitioners who are able to reflect on practise and who are equipped to meet the ever changing demands of the healthcare system. Nursing education institutions (NEIs) should prepare graduates who can practise as independent practitioners and who demonstrate critical, analytical and reflective thinking. They should have the ability to meet the needs of the population (South African Nursing Council, 2005:16). With the transformation of nursing colleges in South Africa as institutions of higher education, the focus is no longer on the teacher and teaching but rather on the student and learning.

1.3 ACTIVE LEARNING

Active learning is not a new concept and had been mentioned as early as 1916 by John Dewey, who emphasized the importance of experiential learning in the classroom and student centred learning (Ord, 2012:63). According to Dewey, the role of the teacher should be that of a facilitator and guide and the content should be presented in a way that allows the learner to relate the information to prior experience (Novack, 2005: para. 47). The learner does not assume a passive role as the teacher and the learner are both partners in the learning process. The teacher guides the learners to independently discover the meaning of the content being taught (Novack, 2005: para. 47). Farrell (2010: para. 7) states that for centuries,
educational philosophers such as Rosseau (1762), Piaget (1951) and Kolb (1984) encouraged learning through play i.e. practical and sensory experiences, in order to promote abstract reasoning and understanding of complex concepts. Active learning is purposeful instruction which guides the students towards learning outcomes and involves them through doing meaningful learning activities, which enables them to reflect on their actions, thus stimulating them to use their intellect during the learning process (Beng, 2005: para. 2; Bonwell, 1991:3). Thaman, Dhillon, Saggar, Gupta and Kaur (2013:27) refer to active learning as an environment that provides the learners with the opportunity to talk, listen, read, write and reflect on the content through practising activities such as simulation, role play, informal small group discussions and case studies. Uys and Gwele (2005:183) describes active learning as:

“learning where students move away from being passive recipients of knowledge, to being active participants doing most of the work, learning through experience, engaging in problem–solving activities and knowledge–construction exercises, as well as in the application of what has been learned, with teachers facilitating and directing the process of learning”.

Students are involved in the learning process, which includes the integration of ideas, knowledge, skills and the completing of tasks and activities given to them by the instructors (Bell & Kahrhoff, 2006:1). Beattie and Rhoads (2005:7) add that in active learning, the nurse educator allows the student to take charge of the learning process. They become active participants who take responsibility for their own learning and think about what they are doing (Naderi & Ashraf, 2013:95; Prince, 2004:1). Tasks could range from short writing exercises to complex group exercises in which students are required to integrate theory and practice with real life situations (Faust & Paulson, 1998:4). Felder and Brent (2009:2) refer to active learning as anything that students are requested to do in a classroom, excluding watching, listening and writing notes.

Active learning can also include activities both in and beyond a classroom setting (Dengler, 2008:482). In their report to the Association for the Study of Higher Education (ASHE), Bonwell and Eison (1991:7) discuss numerous strategies such as debates, drama, role playing, simulation and peer teaching to promote active learning. Felder and Brent (2009:3) posit the use of activities like think-pair-share,
concept tests and thinking-aloud pair problem solving as useful techniques to assist students in solving problems or when analysing cases.

The main elements associated with active learning, include engaging the students in activities which encompasses reading, discussing and writing; exploring attitudes and values, encouraging higher order thinking such as analysis, synthesis and evaluation (Bonwell, 1991:2; Prince, 2004:1). This means that more emphasis is placed on the development of skills as opposed to the mere transmission of information (Bonwell, 1991:2). Active learning enables the students to be hands on and allows them to assimilate the knowledge more effectively, as opposed to the passive learning style of traditional teaching methods (Logan & Plumlee, 2012:73). In the active learning classroom, the nurse educator creates scenarios, opportunities for discussion, debate, questioning and relates experiences that allow students to be more critical, to revise and improve their own thinking and reasoning whilst interacting with their peers (Farrell, 2010: para. 8).

One study revealed that practice tests and clinical examples were valuable teaching strategies that promoted active learning in medical–surgical nursing practice by providing opportunities for students to engage in self–assessment, integration of theory and practice, reflective learning and could be used in different settings such as the classroom or even as an on–line self–study course (DuHamel, Hirnle, Karvonen, Sayre, Wyant, Colobong Smith, Keener, Barrett & Whitney, 2011:462). Zingone, Franks, Guirguis, George, Howard-Thompson and Heidel (2010:5) describe active learning methods that were utilized in an ambulatory care elective course and which were found to be effective in encouraging immediate application of knowledge in the classroom. These methods helped in developing team work, communication and critical thinking skills. Devraj, Butler, Gupchup and Poirier (2010:6) indicated that pharmacy student’ experienced increased confidence, knowledge, skills and understanding of health literacy concepts after completing active learning exercises in the classroom such as role playing, brainstorming, group discussion and the creation of educational material. It was suggested by Sheriff and Chaney (2006:55) that implementing active participation as a teaching strategy in a nursing research course would be beneficial for students to work directly with research subjects in that it increases their understanding of the research process and the importance of
reading and critiquing articles and its relevance to nursing practice. In a study done by Youngblood and Beitz (2001:39) it was suggested that nurse educators should utilize active teaching strategies such as student led group presentations and portfolios in order to promote critical thinking skills in students.

The AACN is in agreement with all these studies and therefore also recommends that nurse educators utilize innovative strategies to engage students in the understanding and application of research findings from nursing and other disciplines in their practice (Phillips, 2014:199). It is therefore important that nurse educators strive to enhance the overall learning experience by incorporating teaching strategies that increase their motivation, stimulate higher thinking processes, promote collaboration and engage students as active participants in the learning process (Majeed, 2014:290).

1.4 PROBLEM STATEMENT

The private Nursing Education Institution (NEI), where this study was conducted, is managed centrally at a national level. It has seven learning centres and four associated classrooms, located in different provinces around South Africa. A Learning Centre (LC) is described as a regional site or campus of the private NEI, which educates and trains students (Van Niekerk & Wylie, 2013:1). An associated classroom (AC) refers to a facility that is located in a different town but is administered by a particular LC and meets the educational and training requirements of the private organization (Van Niekerk & Wylie, 2013:1).

A relational resource-based model on nursing education is used by this private organization, which means that there is a central nursing support unit which is responsible for the following systems: the management system, a communication and administrative system, and most importantly a central teaching and learning system. Policies, procedures and guidelines that govern nursing education are therefore developed centrally (Life College of Learning, 2015:3).

An outcome-based approach is utilized by the private NEI and it emphasizes that students are active participants in their own learning process and not merely passive recipients of knowledge (Naicker, 2013:10). Gosling and Moon (2001:7) state that
the outcome-based approach to teaching is popular at an international level and adopted by national quality and qualifications authorities such as the Quality Assurance Agency for Higher Education (QAA) in the UK, the Australian and the New Zealand Qualification Authorities.

In South Africa, the South African Qualifications Authority (SAQA), Act (58 of 1995), provides for the establishment and implementation of the National Qualifications Framework (NQF), which forms the framework for a national learning system that integrates education and training at every level (Meyer & van Niekerk, 2008:4). There is an increasing emphasis on the teaching role of the nurse educators as well as the presumption that the outcomes will be assessed at both the institutional and programme levels (Billing & Halstead, 2012:2). According to Jacobs, Vakalisa and Gawe (2011:2) and Meyer and van Niekerk (2008:16-32), an outcome-based approach does not focus on programme content but on what the student should be able to do at the end of their training. This can be accomplished by using teaching strategies and learning activities that encourage the active participation of learners.

The researcher, who manages one of the LCs run by the private NEI, has observed that most of the staff members there are from the baby boomer generation. As discussed previously, this generation is very comfortable with the traditional methods of teaching. The nurse educators, at this particular LC, complained that the students had a short attention span, were easily distracted, failed to read the assigned work allotted to them and were therefore inadequately prepared for class. The researcher realized that the generation gap that exists between the ‘baby boomers’ and the ‘millennials’ provided a challenge to the nurse educators.

The NEI allows nursing education students from the local university to do their practical modules at the LC. These nursing education students utilized new teaching strategies when teaching the students. Examples of the teaching strategies they used are case studies, concept mapping and the pause procedure i.e. where the nurse educator paused for two minutes. During this time the students were required to work in pairs to discuss and rework their notes without any interference from the nurse educator. The think-pair-share strategy was also utilized, where students viewed a video clip and thereafter the nurse educator posed a question. Students were instructed to think about the question and write their response down and then
share their response with a partner. Thereafter the students were invited to share their answers with the whole class. This exercise encouraged the students to utilize reflective thinking and to formulate their thoughts before sharing them with others.

The students, after being exposed to the “new styles” of teaching, verbalized the need for the nurse educators to utilize a wider variety of teaching techniques as this facilitated their participation in the learning process. The researcher thus realized that the younger generation (millennials) challenge the traditional teaching and learning environment and want to learn by being actively involved in the learning process.

As a result, the researcher was thus motivated to embark on a journey to establish which teaching strategies were being utilized at the private NEI and whether these strategies were successfully enhancing active learning and promoting student engagement or not. If not, is it due to limited application of these strategies and what can be done to improve the situation.

1.5 RESEARCH QUESTIONS

Based on the above statements the researcher wanted to address the following research questions:

- What activities, educational resources and teaching strategies are used to enable active learning in a private nursing education institution?
- What can be done to facilitate active learning in a private nursing education institution?

1.6 RESEARCH AIM

The aim of the study was therefore to investigate what activities, educational resources and teaching strategies were used to enable active learning in a private nursing education institution and based on the data obtained from the study to make recommendations to facilitate active learning in LCs.

1.7 RESEARCH OBJECTIVES

The research objectives for this study were to:
• Explore and describe what activities, educational resources and teaching strategies were used to enable active learning in a private nursing education institution.

• Make recommendations to facilitate active learning in a private nursing education institution.

1.8 CONCEPT CLARIFICATION

Concept clarification is the meaning assigned to objects, events or phenomena and includes the abstract characteristics of the subjects or the theoretical meaning of a concept being studied (Brink, van der Walt & van Rensburg, 2012:27; Grove, Burns & Gray, 2013:689; Polit & Beck, 2012:549).

1.8.1 Facilitate

The word facilitate mean to make an action or process easy or easier or to help something run more smoothly and effectively (Merriam–Webster dictionary online; Oxford learners’ dictionary online). Facilitation also means the induction of discussion and critical debate about what is the present situation and where changes (improvements) need to be made (Billings & Halstead, 2012:408). In this research study, facilitate is described as assisting nurse educators to enhance their teaching practices so that students can become actively engaged in their own learning.

1.8.2 Active learning

The term ‘active learning’ was discussed extensively in the preceding sections. With reference to this research study, active learning will be defined as any “instructional activity that gets the students involved in doing things and thinking about what they are doing” and will include the process of gathering information and ideas, enhancing the overall learning experience by adding forms of experiential learning and creating opportunities for reflective dialogue (Fink, 2003:17; Weigel & Bonica, 2014:21).

1.8.3 Private higher education institution

Private higher education institution refers to any institution that provides higher education on a full-time, part-time or distance basis and which is registered or provisionally registered as a private higher education institution with the Department
of Higher Education and Training in terms of the Higher Education Act 101 of 1997 of South Africa (Higher Education Act 101 of 1997: section 1.1:9). This research study considers private higher education institution to be an institution that is registered or provisionally registered with the Department of Higher Education and Training.

1.8.4 Teaching strategy

Bastable (2008:637) defines a teaching strategy as an overall plan of action for instruction that can anticipate possible barriers and the resources required to achieve specific behavioural objectives. It encompasses the manner in which information is conveyed and brings the learner into contact with what it is that has to be learnt (Bastable, 2008:430). In this study, teaching strategies refer to the activities and methods of instruction, including the educational resources that the nurse educators use to facilitate active learning with the nursing students.

1.9 THEORETICAL FRAMEWORK

John Dewey had a profound effect on progressive education and campaigned for an educational system that was learner centred. He believed that the learners should be actively involved in their own learning and that learning should take place in an environment that caters for their individual needs and characteristics, which ultimately leads to intellectual growth (Novack, 2005:4). This active involvement of the learner in the learning process and their interaction with fellow students contributes to the independence of the learner. He also pointed out that the best learning is through personal experience i.e. learning by doing, experimenting, encountering and solving problems, as this enables the learner to reflect on their actions and to learn from the process (Novack, 2005:7). According to Dewey, the role of the teacher should be that of a facilitator and guide and that the content should be presented in a way that allows the learner to relate the information to prior experience. Billington supports this view and states that the learning environment should support the uniqueness and different needs of each learner, thus encouraging them to be creative and to become active participants in the learning process and allowing them to become self – directed learners (Billington, 1996: para. 9).
As previously mentioned Dewey advocated that the students reflect on their actions and encouraged the interaction of students with others. This vision is also evident in Finks Model of Holistic Active Learning, which the researcher used as a point of departure. According to Fink (2003:16) a students’ ability to retain knowledge increases if they acquire it in an active rather than a passive manner. The three components of active learning identified in Fink’s model include; information and ideas, experience and reflective dialogue. Fink (2003:18) suggests that educators utilize different methods when introducing important information and ideas to the students. This could include getting the students to read specific sections of the textbook prior to coming to class or requesting that they research the specific topic online in order to prepare for the classroom discussion. Experience, as referred to in Fink’s model, can either be achieved through “doing” or “observing”. Direct doing takes place in authentic environments, whilst indirect doing includes the utilization of strategies such as role playing, analyzing case studies and simulation (Fink, 2003:18). The direct “observing experience” occurs when the student, for example, watches a doctor perform a tonsillectomy, whilst the indirect “observing experience” could be the student viewing a video on YouTube of a patient describing his/her experience post tonsillectomy (Fink, 2005:2). Both online doing and observing experience occurs when the students are assigned tasks that need to be completed using the internet i.e. are given a website address at which they can access information (Fink, 2003:18). Reflective dialogue is categorized as either dialogue with one self or dialogue with others (Fink, 2005:1). This is where students reflect on the meaning of their learning experience. Dialogue with self requires the student to think reflectively about their learning and this can be accomplished by assigning the student the task of developing a learning portfolio where they can write about what they have learnt in a specific module and how this knowledge has influenced their lives (Fink, 2005:1). Dialogue with others occurs during peer group interactions and small group discussions where the students are required to share their experiences, answer questions or debate a topic that has been assigned to them (Fink, 2005:2).

A self-administered questionnaire was used and developed from the literature, with a focus on the three components of active learning identified in Fink’s Model of Holistic Active Learning namely: information and ideas, experience and reflective dialogue. Finks model will be discussed in further detail in Chapter two of this research study.
“One must learn by doing the thing, for though you think you know it, you have no certainty until you try” (Sophocles, 5th c. B.C.).

1.10 RESEARCH METHODOLOGY

In this study, a quantitative, descriptive, exploratory and contextual research design was used in order to meet the research objectives. The target population comprised of student nurses that are registered at a private nursing education institution. Data was collected by means of a census method using a self-administered questionnaire. The researcher conducted a pilot study at one of the AC with the aim of identifying and correcting any errors and ambiguities present in the self-administered questionnaire. Statistica Version 12 was used by the statistician to obtain both a descriptive and a statistical summary of the analysed data. Descriptive statistics were used to describe the common features of the data using the mean and standard deviation. The findings were discussed and then presented through the use of tables and graphs. Validity and reliability were maintained in order to ensure quality results. The ethical principles of informed consent, confidentiality, anonymity, beneficence, non-maleficence, veracity and justice have been implemented and maintained throughout this study.

Based on the findings of the study, recommendations for improving nursing practice, research and nursing education are made.

1.11 CONCLUSION

Chapter 1 provided an introduction to the study. The research problem was described and the study objectives and questions were outlined. The theoretical framework was also presented. A short description of the research methodology was provided and mention was made of the study population and the means of which data was collected. This is further discussed in chapter 3. The next chapter, chapter 2, discusses the literature review in detail.
CHAPTER 2
LITERATURE REVIEW

2.1 INTRODUCTION

A literature review is defined by Grove, Burns and Gray (2013:707) as the process of locating, analysing and synthesizing information on a topic in order to create a picture of what is known and not known about a particular situation or research problem. Polit and Beck (2012:732) refer to a literature review as a critical summary of the existing knowledge regarding a topic of interest and as a tool which is used to assist the researcher to put the research problem in context. The purpose of the literature review is to become familiar with the current extent of knowledge regarding the research problem, to learn how others have described the problems they encountered, to narrow the focus of the research and to ensure that the research is not duplicated (De Vos, Strydom, Fouché & Delport, 2011:93). The literature review in this case, assisted the researcher to develop a data collection instrument, such as a questionnaire (Brink, van der Walt & van Rensburg, 2012:154).

The researcher began the literature review by searching for the following key words and terms: Active learning, active learning strategies, innovative learning, and innovative teaching strategies. The literature that was searched included the following; Databases on the World Wide Web, namely: Ebscohost, Academic Search Complete, CINAHL with full text (Cumulative Index to Nursing and Allied Health Literature); MEDLINE (Medical Literature Online); Health Source – Consumer Edition; Health Source – Nursing Academic Edition; Masterfile Premier, Google and Google Scholar.

The search provided valuable information on different teaching strategies that are relevant to this study.

Chapter 2 begins by discussing teaching strategies that are used to promote active learning and that require the student to do or observe learning experiences. Further discussions focus on teaching strategies that engage the student in the process of reflection and then the researcher examines the literature in order to explain the ways in which technology is incorporated in the teaching-learning environment and
how it promotes active learning. The chapter then concludes with a discussion regarding the educational resources required to promote active learning in the teaching–learning environment.

2.2 TEACHING STRATEGIES THAT PROMOTE ACTIVE LEARNING

Jacobs, Vakalisa and Gawe (2011:156) define a teaching method as a way of teaching that uses a definite plan, whilst Bastable (2008:637) defines a teaching strategy as an overall plan of action for a teaching–learning experience that utilizes different methods of instruction to achieve specific learning outcomes. The terms teaching method and teaching strategy are used interchangeably in the literature. For example, Chabeli (2010:1) and Sakiyo and Waziri (2015:56), refer to concept mapping as a teaching method whereas Reddy and Subbaiah (2014:1) and Kotcherlakota and Zimmerman (2013:252) refer to it as a teaching strategy. Demonstration is referred to as a teaching method by Iline (2013:48) whilst Quinn and Hughes (2007:231) refer to it as a teaching strategy. For the purpose of this study, teaching strategies will refer to the activities and methods of instruction, including the educational resources that nurse educators use to facilitate learning by the students.

There are a number of teaching strategies that can be used in the classroom to engage learners in the learning process. For example, games, case studies, problem–solving, group discussions, concept mapping, simulations, role playing and any other activity that require the students to use their knowledge, promote reasoning and apply lessons learnt (Everly, 2013:148; Weigel & Bonica, 2014:22).

In Chapter one, Finks model of active learning was briefly discussed. The researcher used this model as a guide to obtain pertinent information regarding teaching strategies that are used to facilitate active learning. For the purpose of this study, the teaching strategies identified in the literature review have been categorized using the three elements of Finks model, acquiring information and ideas; experience and reflective dialogue.
2.2.1 Acquiring information and ideas

Fink (2003:21) states that although students receive information and ideas by listening to a lecture or reading a textbook, this learning process is a passive one. To make the learning process more active, the author suggests that students could be given pertinent sections of the content to read prior to attending class. Students can then discuss the content in class or even debate the worth of the information. Students could also be advised to access specific websites that have content related to the course, encouraging them to seek out the information themselves, thus learning to be self-sufficient when looking for information. The nurse educator could create a course-specific website, which students could access for information. Ideas regarding the content could then be posted, for instance by using a blog (Fink, 2003:21). A pre-class assignment can include critical thinking questions which require students to apply, analyse and evaluate the content in order to reach a conclusion. This exercise provides the educator with an opportunity to identify gaps in knowledge, to dispel misconceptions and to provide immediate feedback to the students (Towle & Breda, 2014:111).

Erasmus (2013:30) found that by assigning pre-reading material and activities to students, more time was available for the educator to explore and implement new strategies such as concept mapping, critical reasoning and other exercises that can be used to improve their communication skills. According to Poorman and Mastorovich (2016:283) a homework assignment could for instance include the following activities: reading selected sections from the textbook regarding interventions for a specific patient condition; prioritizing, highlighting or underlining the most important aspect of each page; meeting in small groups to discuss, compare and justify what they identified as important from what they read, and lastly, reaching consensus in the group regarding the priorities of the patient’s care. This type of assignment provides students with the opportunity to reflect on what they have read, determine their ability to prioritize important information, increase metacognitive awareness and improve critical thinking (Poorman & Mastorovich, 2016:284).

Other examples of pre-class activities include interviewing an individual, completing a survey, answering questions related to a case study, finding pictures on a web,
visiting a healthcare agency and then sharing the information collected with your peers and reflecting on the information obtained (Bowles, 2006:3). Assigned reading material, listening to podcasts, watching lectures prior to attending class resulted in increased involvement of students in their own learning and allowed additional time for interactive discussions, group work, presentations and the answering of students questions regarding their homework assignments (Pilato & Ulrich, 2014:544).

In an introductory biology course, students were given pre-class worksheets or narrated PowerPoint videos to complete. It was found that the performance of those students in the examination, which included the content of the pre-class activities, increased and improved the learning outcomes by 21% (Moravec, Williams, Aguilar-Roca, & O'Dowd, 2010:479). The authors attribute the improvement to the fact that there is now more time being made available to actively engage the students in the application of the knowledge acquired prior to the lecture. This theory is supported by the feedback received from students, where they stated that pre-class activities assisted them to prepare for the lecture, as well as to review and therefore understand the class material better (Moravec et al., 2010:478).

In a study conducted by Knight and Wood (2005:306) students were required to post answers on a Course Web site relating to the content they covered during the week. It was found that assigning student’s reading and homework outside of class time was advantageous to both the students and the lecturer. For the students, it resulted in them taking ownership of their own learning and assisted in the understanding and application of the concepts, whilst the lecturer benefitted by knowing in advance which concepts the students were struggling with and could subsequently prepare activities to address the problems identified in the contact sessions (Knight & Wood, 2005:306).

2.2.2 Learning experience (doing/observing)

According to Fink’s model, experience includes either “direct observing or indirect observing” or “direct doing or indirect doing”. (Fink, 2005:2). An ‘observing experience’ occurs when the student listens or watches another person demonstrating an activity related to their course matter. An indirect observing experience occurs when the student views a video clip of an activity e.g. removal of
sutures. In the case of a “doing” experience, the student actually conducts the activity themselves. The nurse educator can utilize case studies, role-playing and simulation activities to engage the students in the "doing" process (Fink, 2003:18). For the purpose of this study, the researcher classified the doing/observing learning experiences to include lectures, case studies, concept mapping and simulations (encompassing role play, demonstrations, games, puzzles and models).

2.2.2.1 Lecture

The lecture is one of the oldest and most frequently used strategies of teaching and can be described as a method whereby the nurse educator verbally presents the content or disseminates the information directly to the groups of students (Bastable, 2008:431; Billings & Halstead, 2012:266). There is however concern that nurse educators, in the current healthcare setting, have not upgraded their teaching methods to include reflecting practices and innovative strategies that are able to enhance the students’ levels of thinking (Dutra, 2013:1). Some of the disadvantages of the traditional lecture method is that it is monotonous, teacher centred (Winstone & Millward, 2012:32), creates passive learners (Majeed, 2014:290), provides little or no feedback to students, does not make allowance for students diverse learning styles (Bastable, 2008:432), is not suited to higher levels of thinking and presumes that all students learn at the same rate (Bradshaw & Lowenstein, 2007:112). With the traditional "chalk and talk" method, student’s become restless and distracted and it is not uncommon to see them using their smartphones, texting friends or accessing Facebook or Twitter during the lecture (Ghosh, 2013:105). Studies have shown that a student’s attention span for listening to a speaker is approximately fifteen minutes, thereafter their focus decreases and this results in them only remembering 70% of what was said in the first ten minutes of the lecture and 20% of what was said in the last ten minutes of the lecture (Prince, 2004:4). Within one day, 80% of the information presented in the lecture has been forgotten (Bradshaw & Lowenstein, 2007:112). However, the lecture can be made more interactive by integrating active learning practices such as clarification pauses, one minute papers, think-pair-share, question and answer sessions and animations or comic strips.
2.2.2.1.1 Interactive lecture

Clarification pauses can be incorporated into a lecture to allow the students a moment to reflect on the content. The lecturer, after stating an important point or defining a key concept, stops talking for a moment, then poses a question, and thereafter clarifies any misconceptions (Faust & Paulson, 1998:5; Prince, 2004:3; Winstone & Millward, 2012:35). Techniques such as these aid in the development of active listening skills, promotes student engagement, enhances peer interaction, provides an opportunity to correlate theory with practice and allows them to compare and clarify any misunderstanding of the content (Graffam, 2007:40; Thaman, Dhillon, Saggar, Gupta & Kaur, 2013:27; Winstone & Millward, 2012:35).

A ‘One minute paper’ can be used at the end of a lecture. Students are requested to answer the following two questions: “What was the most important thing you learnt today?” and “What important point remains unclear to you?” (DeYoung, 2009:264). This requires students to write their understanding of the main points of the lecture, including the points that confused them the most, and then compare their list with their peers list. This strategy is useful because it requires the students to reflect on the lecture, encourages peer support and guidance, and provides the lecturer with feedback on what the students did not understand (Australian Catholic University, 2012:3). The one minute paper allows the nurse educators to obtain important information regarding the effectiveness of the lecture and in turn, helps the students to develop metacognitive skills (DeYoung, 2009:264).

Think-pair-share is another technique that can be integrated into a lecture to improve learning outcomes. Students are required to work on problems individually, and then discuss their answers in pairs before sharing their thoughts with the rest of the class. This activity incorporates individual thinking, group discussions and leads to improved learning (Felder & Brent, 2009:3; Thaman et al., 2013:29; Usman, 2015:42). It is a valuable strategy that encourages even shy students to participate, improves communication and peer interaction and fosters a community of leaders (Australian Catholic University, 2012:1). It encourages students to take ownership of their own learning instead of being dependent on the nurse educator (Usman, 2015:42).
'Questioning' is another technique that the nurse educator can use at different intervals of the lecture, for example, at the beginning to stimulate interest in the topic, during the lecture to stress important points or link previous knowledge to new information and at the end of the lecture in order to ensure that there is no misinterpretation of the subject content (Jacobs et al., 2011:173). Asking questions can help to assess the pre-knowledge of students, clarify concepts, evaluate the students’ progress in achieving the learning outcomes (Bastable, 2008:463), facilitate active participation and reinforce learning (Bruce, Klopper & Mellish, 2011:229). It encourages discussion and elicits different viewpoints, thereby stimulating critical thinking, enhancing problem solving skills and promoting the integration of theory and practice (Billings & Halstead, 2012:275). Graffam (2007:40) states that students tend to listen differently when they know that questions may be asked of them. Asking questions can initiate debates and also afford the educator the opportunity to gauge the strengths and weaknesses of the students.

The Socratic method of questioning is when an initial question is asked and based on the response from the student, further questions are then posed, which could lead to spontaneous discussions (Peterson, 2009:84). The author further suggests the following technique, which the nurse educator could utilize to help facilitate a Socratic discussion; ask the students to clarify and justify their answers, by playing the role of devil’s advocate and providing a counter argument, the student is then challenged to think critically (Peterson, 2009:85). Socratic questioning helps students to build on previous knowledge, uncover contradictions, distinguish between unfounded beliefs and logical beliefs and creates new levels of understanding (Fahim & Bagheri, 2012:1124). These thought provoking questions help students to explore and understand different viewpoints (DeYoung, 2009:225).

The nurse educator can also use a quiz to promote active participation among the students. Towle & Breda (2014:112) used multiple choice quizzes as an innovative teaching strategy to engage millennial students in their own learning. The multiple choice quizzes were based on modules, including delegation, negotiation, conflict resolution and prioritization. Students had to complete the quiz independently, review their answers and discuss it amongst their team before submitting it for grading. Each team could only submit one completed quiz and a rationale was required for
each answer. This required students to think critically and promoted team work and collaboration. It assisted in the understanding of different viewpoints and taught them both negotiation and conflict management skills. Quizzes are a useful tool that can help students to reflect on their learnings and make them aware of their own shortcomings (Towle & Breda, 2014:112).

The nurse educator can also make learning fun by using comic strips, comedy or animation during the lecture and then asking the students to analyse the comic strip in relation to the topic being discussed. The use of humour improves memory, helps students to focus their attention and strengthens social relationships (Bowles, 2006:6). It increases a student’s understanding of concepts (Gardner & Belland, 2012:467) and decreases tension, anxiety and stress (Story & Butts, 2010:291). Humour provides a break in content, which students would otherwise perceive as boring, and decreases class monotony (Billings & Halstead, 2012:271). It promotes the active participation of the students and prevents the “death by PowerPoint” situation whereby students are listening without actually absorbing anything (Baid & Lambert, 2009:549).

### 2.2.2.2 Case study

Case study can also be referred to as a case, case method, case-based or case study method (Ching, 2014:281; Popil, 2011:204). It could be based on complex real-life or fictional situations and includes the identification of problems, decision making, in-depth analysis and resolution seeking (Meyer & van Niekerk, 2008:179; Pilato & Ulrich, 2014:544). Doing case studies or analysing case histories assists in the development of problem-solving and critical thinking skills in a safe, non-threatening environment (Bastable, 2008:400; Majeed, 2014:291). It places the focus on the student instead of on the nurse educator (Dutra, 2013:1) and encourages interaction and collaboration between the student and the nurse educator (Popil, 2011:207). Case studies can be used to explore the student’s attitudes, beliefs and values (Bastable, 2008:400) as well as to develop their cognitive skills through the use of inductive and deductive reasoning to resolve medical situations (Meyer & van Niekerk, 2008:179). Analysing case studies promotes group discussion (Youngblood & Beitz, 2001:41) and stimulates enquiry and further learning (Bruce et al., 2011:204). The discussion of a clinical case related to a topic that was taught in
class promotes the clinical decision making skills of the students and encourages active learning (Majeed, 2014:290). The utilization of case studies as a learning tool can help the students to link theory with practice as they learn to apply and integrate knowledge, skills and experience to real-life scenarios (Bradshaw & Lowenstein, 2007:61; Ching, 2014:280).

Pilato and Ulrich (2014:544) used the case study method to conduct a study amongst honours level students that were registered for a financial accounting course. The students were presented with a real-life problem and had to analyse the case, make decisions, research solutions, discuss their findings within an assigned group of five members, participate in an in-class discussion, find solutions to the newly identified problems, write a reflection paper on the case and then formally present their case, including the analysis and solutions to their peers, their professors and delegates from external accounting firms. They found that this method of teaching motivated students to become active participants in the learning process, afforded them the opportunity to incorporate their personal experiences in practice, stimulated critical thinking as they had to apply the concepts learnt in class, and enhanced their presentation and research skills which are valuable assets in the business world (Pilato & Ulrich, 2014:552).

2.2.2.3 Concept mapping

Concept mapping, also known as mind mapping or nursing process mapping, is a descriptive term applied to an educational strategy in which students are required to express concepts and their relationships in a visual format. They do this by linking words, symbols or concepts from side to side or top to bottom (Bastable, 2008:621; Billings & Halstead, 2012:454; Bradshaw & Lowenstein, 2007:112; Meyer & Van Niekerk, 2008:133). Concept maps can be categorized into four main groups. These are; spider maps, which have a central theme with radiating subthemes; hierarchy maps, where the most important information is at the top and the least important is at the bottom; flow charts, which depict the information in a linear manner; and system maps, which are similar to flow charts, but includes inputs and outputs (All, Huycke & Fisher, 2003:313). Cross linking is an important characteristic of concept mapping as it portrays the interrelation of concepts from different areas by connecting the words or ideas by means of arrows or lines (Sakiyo & Waziri, 2015:57). The objective of
concept mapping should be clearly conveyed to the students so that it can be used as a learning tool to help direct the search of information (Kinchin, 2014:46).

In a study done by Khan, Ali, Vazir, Barolia and Rehan (2012:89), it was found that concept mapping is a valuable strategy for the development of a students’ knowledge base, for improving their problem solving abilities and decision making skills as well as improving their understanding of the relationship between concepts. These findings were consistent with the findings of other researchers, that is, as an active teaching strategy, concept mapping can be utilized by nurse educators to assist students in linking their prior knowledge with new learned facts (Chabeli, 2010:2). It also enhances their critical thinking and clinical reasoning skills (Clayton, 2006:197; Daley & Torre, 2010:446). When utilized, it improves the students’ ability to make sound, rational, independent decisions in practice because the students now understand the underlying concepts and relationships and how they influence each other better (Taie, 2014:11). Concept mapping provides the nurse educator with vital information and enables them to be able to identify gaps in the learning and thereby modify their lesson plans accordingly (Vanides, Yin, Tomita & Ruiz-Primo, 2005:29). Concept mapping requires the students to actively engage in the subject matter, thus improving their knowledge and skills and enhancing their learning abilities (Erasmus, 2013:31).

Another study, done by Kotcherlakota and Zimmerman (2013:253) showed that concept mapping, when combined with the fishbowl discussion, assisted students in a graduate nursing program to develop their areas of focus, organize complex information and challenge ideas and perceptions in a nontargeting way. It promoted their observation, listening and reflection skills and encouraged constructive feedback from their peers.

### 2.2.2.4 Simulation

In the past, as a part of a student’s clinical training, they were required to practise their skills on live patients. However, this method raised numerous concerns regarding not only the ethical implications of practicing on live patients, but also the quality of care being received by the patients. Also, not all the students were or could be afforded the same opportunity of practising on live patients, thereby unfairly
excluding some of the students from the experience (Bonnel & Smith, 2010:175). In addition to this, the number of student nurses has increased whilst the availability of clinical facilities and nursing faculties has decreased (Nehring & Lashley, 2009:528). These concerns have been addressed by introducing new technology in the form of simulation.

Simulation can be described as activities that imitate a real life situation using models or manikins, but which excludes the medico legal hazards that exist in the real life situations (Bastable, 2008:447; Billings & Halstead, 2012:352; Bruce et al., 2011:246). Simulation is a student-centred process with the educator as a facilitator providing support to the students throughout the simulation and debriefing process (Jeffries, 2005:98). It is beneficial because pauses can be introduced to stimulate discussion or to ask pertinent questions about procedures. In order to achieve the student learning outcomes the nurse educator must ensure that the objectives of the simulation are clearly understood and that the students are given pertinent information regarding the amount of time required to complete the activity and the role of the student in achieving the outcome expectations (Jeffries, 2005:100). The debriefing session that takes place after the simulation experience, provides the opportunity for the students to recall, review, reflect on and contemplate the experience and how they would react to a similar situation in a real-world setting (Rutherford-Hemming, 2012:134). Simulation provides a safe and non-threatening environment for students, where they can integrate theory with practice whilst simultaneously developing their cognitive, affective and psychomotor skills without the fear of causing harm to an actual patient (Bonnel & Smith, 2010:176; Meyer & Van Niekerk, 2008:175).

The National League for Nursing, (NLN, 2015:3) advocates the use of simulation as an evidence-based strategy to facilitate experiential learning that fosters critical thinking and clinical reasoning skills, thus bringing thinking and doing together. This is an effective teaching and learning strategy in which students are afforded the opportunity to practice a skill repeatedly and until they are considered to be proficient, before performing it on a real patient. It improves their self-confidence and enhances their ability to apply their knowledge in a real life situation (Cant & Cooper,
Simulation accommodates the diverse styles of learning, and provides a platform for students to work both individually and as a team (Jeffries, 2005:98).

A simulation-based workshop was conducted for 33 medical students and yielded the following results: 64% of the students indicated that they learnt behavioural skills required for teamwork, 33% felt that they learnt how to approach a medical emergency systematically, 36% indicated that their application of theoretical knowledge in a clinical setting was improved (Weller, 2003:1).

Bruce et al. (2011:246) stated that the utilization of simulation laboratories is valuable for teaching and assessing the clinical competence of students. The authors further suggested the incorporation of technology, such as close-circuit television cameras and microphones in order to monitor and record the activities (Bruce et al., 2011:244). These recordings can then form part of a digital library, which students can use for self and peer evaluation and review at any time (Bruce et al., 2011:244).

Simulation resources can be categorised as either low or high fidelity simulation and is based on the degree to which the resource accurately imitates reality (Billings & Halstead, 2012:353; Bonnel & Smith, 2010:176). An example of a low fidelity simulation is the use of a partial task trainer, which is an interactive model used to teach specific skills on selected areas of human anatomy (Jeffries, 2005:97). Students can, for instance, be taught to perform a venepuncture on a model of a plastic arm. This is a valuable simulation experience as it allows the student the opportunity to practice the skill in a safe environment and to learn from the errors they make (Billings & Halstead, 2012:355). Simulators such as ‘SimMan’ and ‘SimBaby’ are examples of high fidelity patient simulators, which can be used when teaching advanced life-support skills or to practice the assessment of a new-born baby respectively (Bantz, Dancer, Hodson-Carlton & Van Hove, 2007:275; Bruce et al., 2011:243). The ‘SimBaby’ has multiple capabilities, such as auscultative lung, heart and blood pressure sounds, oxygen saturation levels, which can be displayed on the computer screen and can be used to teach students about Apgar scoring or to demonstrate the actions that need to be taken when encountering an infant that is choking (Bantz et al., 2007:275). Some of the advantages of using the high fidelity patient simulator include students being able to learn how to critically analyse
situations, implement actions, evaluate the appropriateness of their actions and learn from their experiences without causing harm to a real patient (Bonnel & Smith, 2010:177).

Anatomically correct models can be two dimensional, i.e. in the form of pictures or slides, or three dimensional e.g. casted models. These models can be utilized in simulation to demonstrate to students the different bones of the skeleton or the anatomical relationships and functions of the different organs in the body (Fredieu, Kerbo, Herron, Klatte & Cooke, 2015:183; Nehring & Lashley, 2009:529). Models of the eye, ear, heart, joints and pelvic organs allow the learner to observe, examine, handle, assemble and disassemble the individual parts so as to see how they fit together and operate under normal circumstances. This would otherwise be impossible without the use of these teaching aids (Bastable, 2008:487). Students could be assigned the task of building their own models, for example creating a model of the ear using cost effective materials (Mellish, Brink & Paton, 1998:198).

The use of models as teaching aids promotes the active participation of students and enhances their learning experience because they receive immediate feedback from the nurse educator or their peers. Another advantage of these teaching aids is that they also meet the learning styles and requirements of the kinaesthetic students, who prefer the hands-on approach to learning (Bastable, 2008:488).

2.2.2.4.1 Demonstrations

Demonstration as a teaching strategy is a visual presentation (Jacobs et al., 2011:171) used to show student nurses how to achieve something (Billings & Halstead, 2012:268). Demonstrations make use of real life equipment and/or manikins to visually represent and explain facts, concepts and procedures (Quinn & Hughes, 2007:231). It can take place in a simulated environment or in real life situations where students are taught not only how to perform the psychomotor skill, but also why it should be done (Bruce et al., 2011:213). Following the demonstration of the skills, the students should be afforded the opportunity to practice what they saw and in this way they can learn through doing it themselves (Quinn & Hughes, 2007:232).
Khan et al. (2012:85) conducted a study to determine the perceptions of 2\textsuperscript{nd}, 3\textsuperscript{rd} and 4\textsuperscript{th} year nursing students regarding the effectiveness of teaching-learning strategies used in clinical education on improving their knowledge base, skills and attitudes. The demonstration strategy was used regularly in either the skills laboratory or in a clinical situation. Data for their study was collected through the use of a questionnaire and the resulting findings revealed that the demonstration technique was the most effective strategy for improving the students' knowledge (43.2% agreed), skills (62.2% agreed) and attitudes (51.4% agreed). Feedback received from the students regarding the demonstration strategy indicated that the use of equipment and visual presentation of the clinical situation enhanced their knowledge and critical reasoning skills. It improved not only their psychomotor skills, but their time and self-management skills as well and brought about a shift in their attitudes to becoming more empathetic towards their patients (Khan et al., 2012:87).

Kelly, Lyng, McGrath and Cannon (2009:293) developed a series of twelve instructional videos demonstrating clinical skills that replaced the lecture demonstration element for teaching aseptic techniques. This was done to improve the way in which teaching skills are taught to undergraduate nursing students. These videos were available to the students online and students were instructed by their lecturers to view the videos prior to attending practice sessions. Positive feedback received from the students included: 54.6% indicated that they could view the videos over and over again to ensure that they understood the skills, 35.4% felt that it was beneficial as they could view it in their own time and learn at their own pace, 21.5% felt that it was good for pre-class preparation whilst 13.1% felt it was useful for revision purposes. However, the negative views of the students included: 18.5% felt that they could not ask questions as no nurse educator was present when they were viewing the videos at home, 17.7% stated that they had problems accessing the videos from their homes and 13.8% indicated that they preferred the demonstration method.

Salyers (2007:1) developed a skills laboratory course using a web-enhanced approach to address the problem of psychomotor deficiencies observed in nurses. The quasi-experimental study included a control and an experimental group. The control group had to attend a 3 hour weekly session, which included a traditional
lecture on the content related to the skills, observe the educator demonstrating the skill, practise the skill, receive minimal feedback on their performance and complete assigned reading and assignments outside of the class (Salyers, 2007:4). On the other hand, the experimental group were taught the skills using a web-based approach where they were also required to attend a 3 hour weekly session, observe the educator demonstrating the skill, practise and refine the skill, receive continuous feedback on their performance and were able to access the course syllabus, lecture and other support material on line. The experimental group had only 36 hours to learn the psychomotor skills in comparison to the control group, who had to learn the same skills through homework assignments in addition to attending lectures. The findings of the study indicated that although the experimental group performed better (mean = 90.91; standard deviation = 6.85) than the control group (mean = 87.93; standard deviation = 7.10) on the final psychomotor skills examination, it was not significantly better (Salyers, 2007:7).

2.2.2.4.2 Role play

Role play is another teaching strategy that can be used in simulation. Role play can be described as a method whereby students are assigned a specific role as a character (Bastable, 2008:449) and are given the freedom to act out probable clinical situations spontaneously in a non-threatening environment (Billings & Halstead, 2012:458; Jacobs et al., 2011:206). This technique enhances active student participation and interaction, promotes creativity and encourages peer review (Billings & Halstead, 2012:459). It provides opportunities to explore attitudes and bridges the gap between understanding and feeling (Bastable, 2008:451).

In a study conducted by Dawood (2013:38), it was found that role playing helped the students to integrate the theory and practice of psychiatric nursing, promoted team work, enhanced communication skills, improved self-confidence and provided them with the skills needed to cope in real life situations. Similar results were found by Vapalahti, Marttunen and Laurinen (2013:28), namely that role play simulation improved the team work, cooperation, communication and argumentative problem solving skills of social work students in preparation for their future work.
White (2015:11) used a mock trial simulated role playing activity to depict the importance of learning through active participation and found that this method is effective in acquiring, retaining and transferring new knowledge whilst simultaneously challenging nurses to provide evidence-based on practice to support changes in clinical practice. Role playing can be used to develop the quality of empathy in students (DeYoung, 2009:147) by helping them to understand opposing beliefs, explore feelings (Billings & Halstead, 2012:458), recognise and correct inappropriate behaviour and attitudes relating to cultural diversity and teach students to be tolerant and sensitive to different cultural practices (Bastable, 2008:450).

2.2.2.4.3 Games

Games are competitive in nature and have precise rules (Billings & Halstead, 2012:270). The goal, according to Bastable, (2008:443) is for the students to win the game by applying prior knowledge and skills learnt. Games can be used in education as an active learning strategy as it has the ability to change inactive learning materials into active learning experiences by getting the students to be active participants and players in the teaching-learning process (Gaikwad & Tankhiwale, 2012:238).

In a systematic review conducted by Blakely, Skirton, Cooper, Allum and Nelmes, (2008:259) it was suggested that gaming promotes an active learning style, enhances student enjoyment, promotes motivational learning and may even improve long – term retention of knowledge. Bastable (2008:444) agrees that playing games increases social interaction and thus influences affective behavioural and cognitive functioning.

Bhoopathi (2007:1497) found that educational games assisted mental health students to increase their test marks by six points in comparison to the students who did not participate in the game. Weigel and Bonica, (2014:29) recommended the use of games as an active learning strategy for Bloom’s taxonomy as it improves student engagement as well as their ability to retain information. Weaver (2003:181) proposes the utilization of games such as bingo, quizzes and races to enhance learning through actively involving the students in the learning process.
Games have the potential to stimulate interest in learning, reduce stress and anxiety and have a positive impact on learning outcomes (Royse & Newton, 2007:264). Other advantages to using games in the classroom includes the promotion of teamwork and collaboration within groups, the encouragement of creative thinking; the ability to change or update content to reflect current information and the provision for immediate feedback (LeCroy, 2006:382).

In a study conducted by Boctor (2013:99), a game called “Nursopardy” was devised to review the content covered in the Fundamentals of nursing discipline. It was found that a large volume of content was covered using the game and the combination of the visual, audio and competitiveness of the game successfully engaged students in the learning process.

Games can be designed in a manner that requires the active participation by a group of students or alternatively for a single student such as when doing word searches or completing crossword puzzles. In an undergraduate nursing research course, crossword puzzles or word games were used to communicate and reinforce the important terminology of the research process in a meaningful and fun way (Phillips, 2014:200).

Crossword puzzles were used as a self-learning tool to promote active learning and to help develop critical thinking skills in pharmacology students (Gaikwad & Tankhiwale, 2012:244). The authors found that this method was useful for revising previous work covered and that the students’ ability to remember drug names improved. Test scores were higher in the intervention group than in the control group, who were not exposed to this method of teaching and feedback received from the students indicated that they found it to be a challenging, useful, recreational tool for learning (Gaikwad & Tankhiwale, 2012:245).

However, in a study done by Ritzko and Robinson, (2006:46) where weekly crossword puzzles were assigned to undergraduate business students as an individual ‘game’ that had to be completed outside of class, only a minority of the students completed the crossword puzzles and indicated that they found this exercise to be useful in preparing for tests and reinforcing content learnt. The
authors concluded that students who do not perceive crossword puzzles as useful are unlikely to complete it (Ritzko & Robinson, 2006:46).

### 2.2.2.5 Other learning experiences

Other learning experiences include the use of prose and poetry writing, which provides students with the opportunity to freely express their experiences without the fear of being judged (Coleman & Willis, 2015:910). It also allows them to identify and explore their feelings about nursing practices, including feelings of vulnerability and questions about self-worth (Alibakhshi-kenari, 2015:4; Jack & Tetley, 2016:9). Learning activities such as art (drawing or painting) can be used to help students reflect their emotions, personal experiences and feelings regarding their first encounter with the death of a patient (Pimple & Dieker, 2010:237).

#### 2.2.2.5.1 Theory –practice integration

Nursing is an art and a science, hence it is important for students to be able to put into practice what they have learnt in the classroom. This is best achieved by creating an active learning environment (Khan et al., 2012:85; Wrenn & Wrenn, 2009:258). Dewey, in his article; “The relation of theory to practice”, explains the importance of integrating theory with practice and emphasizes that one should not be isolated from the other. He goes on to cite the example of teaching the theory of swimming without allowing the person to go near the water (Dewey, 1904/1974: para. 2-10). Activities such as role play, group discussions, case studies and group activities in the classroom help students to integrate theory with practice (Carelse & Dykes, 2013:9). Wrenn and Wrenn, (2009:262) found that asking students to view a video related to the topic presented in class, to keep a reflective journal and share personal experiences and anecdotes, enhances their ability to integrate theory with practice. Meyer and Van Niekerk, (2008:84) stated that activities such as assignments that include clinical problems, problem solving scenarios, reflection on learning and experience and the planning of individualized patient care using the nursing process are valuable methods of integrating theory with practice.
2.2.2.5.2 Student-led presentations

Student–led presentations, such as clinical rounds, are valuable as a teaching strategy because it promotes open communication between the nursing faculty and the students. Students are afforded the opportunity to discuss assessment data, share ideas and create and implement action plans for the treatment of the patients (Di Vito-Thomas, 2005:134). In addition, it promotes the development of critical thinking skills, improves the students’ understanding of the clinical situation and enhances their diagnostic reasoning skills (Youngblood & Beitz, 2001:42).

2.2.3 Reflective dialogue/Thinking about what they are doing

Fink’s model emphasizes the need for reflective dialogue and includes “dialogue with self” and “dialogue with others”. Dialogue with self occurs when the student thinks reflectively about a topic and questions what they have learnt, the significance of the new knowledge, their feelings about this process and how this learning can be incorporated in their daily lives (Fink, 2005:1). The nurse educator can encourage dialogue with self by asking students to keep a reflective diary where they record their thoughts, feelings and experiences. Students can write about what they are learning, how they are learning, and what role this new knowledge or learning process plays in their own life and how this makes them feel (Fink, 2003:18).

Dialogue with others on the other hand includes the students’ interaction with their peers, nurse educators, clinical staff and others i.e. the dialogue is not taking place between the students themselves (Fink, 2003:19). The nurse educator can encourage this process by utilizing teaching strategies such as brainstorming, debates, small group discussions and problem - solving activities that require students to interact with others in the learning process (Fink, 2003:20). For the purpose of this study the researcher identified the reflective dialogue learning experiences to include debates, peer teaching, group work/discussions, brainstorming, decision making exercises and reflection (keeping a reflective journal/diary).

2.2.3.1 Debates

Debates can be defined as a formal discussion consisting of two teams with opposing viewpoints and involves the use of logical arguments and inductive and
deductive reasoning skills (Billings & Halstead, 2012:267; Jacobs et al., 2011:196). Debates can be used as an active teaching strategy as it requires the student to not only master the content but also to conduct research on the topic to be discussed, develop critical thinking skills, enhance their communication skills and their ability to feel empathy (Kennedy, 2007:188). It improves problem solving skills, increases the students' confidence and enhances their ability to articulate their own thoughts based on evidence (Hall, 2011:7). It engages students through self-reflection and encourages them to learn from their peers (Northern Illinois University, 3). Their mental alertness increases as they are required to think on their feet and quickly process and articulate ideas and then provide a response (Snider, 2011:4). Debates require students to go beyond the passive nature of the traditional lecture format to become active participants in the learning of a specific topic. Students must be able to defend their own viewpoints while at the same time acknowledging the opposition’s arguments. They must plan counter-arguments and disprove the opposition’s standpoint using a logical line of reasoning (Hall, 2011:2). Case-based debates were used in the United States among medical graduates and it was found that this method was useful in enhancing diagnostic, management and self-directed learning skills (Jhaveri, Chawla & Shah, 2012:1045).

Anderson and Mezuk (2012:3) conducted a study, which spanned over a period of 10 years. The study investigated the relationship between students (debaters) who participated in a high school debate programme, such as the Chicago Debate League (CDL), and college readiness. Data was obtained from the Chicago Public School (CPS) and the Consortium on Chicago School Research (CCSR). It was found that debaters were 3 times more likely to graduate from high school and meet the requirements on the English, Reading and Science sections of the American College Test (ACT) than students who did not participate in debate. The findings showed that debate participation is associated with improved academic performance (Anderson & Mezuk, 2012:10).

2.2.3.2 Peer assisted learning (PAL)/Peer teaching

Peer assisted learning refers to “the use of teaching and learning strategies in which students learn with and from each other without the immediate intervention of a teacher” and includes student-led workshops, study groups, team projects, student-
to-student learning partnerships and peer feedback sessions in class (Boud, Cohen & Sampson, 1999:413). This approach was used in the clinical facilities at a New York college, where students were paired and instructed to review patient documentation and evaluate policies and procedures related to the quality of care. It was found that the active engagement between the students promoted critical thinking, fostered peer interaction and inspired reflection (Stevens & Brenner, 2009:52).

A systematic review was conducted on the value of peer assisted learning in undergraduate nursing education. Of the 1813 studies screened, only 18 were selected for review. Of these 18, 8 are qualitative studies, 6 are quantitative studies and 4 are mixed method studies (Stone, Cooper, & Cant, 2013:2). The results revealed that students developed autonomy when they accepted ownership and responsibility for their own learning. The interactive learning and active participation of students was enhanced. Peer assisted learning encouraged critical thinking, enhanced problem solving skills, improved communication skills and theory-practice integration. This approach is versatile and can be used in different situations, however anxiety experienced by the students was identified as a disadvantage when utilizing peer assisted learning (Stone et al., 2013:7).

The peer assisted learning approach (PAL) approach was introduced to undergraduate medical students studying Obstetrics and Gynaecology and was aimed at developing self-directed learning and team learning. The approach yielded the following results: 86%-95% of the students reported an improved ability to retain knowledge; 84%-92% stated that the psychological support given by their peers was valuable; 83%-97% expressed an improvement in their communication skills, their ability to understand concepts and being able to remember factual information (Gupta, Srivastava, Kunwar, Gupta, Gupta & Mahdi, 2016:2994).

PAL was also used in the first year of an undergraduate degree to encourage a cooperative approach through student-directed activities (Hammond, Bithell, Jones & Bidgood, 2010:202). The findings revealed that PAL assisted with the social aspects of learning and provided an opportunity for students to brainstorm ideas without the fear of embarrassment. However, the findings also revealed that PAL did not improve study skills, assignment preparation or help to clarify complex concepts. The
authors thus suggested that clear guidelines and workshops be used to provide support for the facilitation of group activities (Hammond et al., 2010:208).

In a similar study by Hodgson, Bearman and Schneider-Kolsky (2012:23) PAL was introduced to teach pathology for 2nd year students in an undergraduate course. Students had to prepare and present a disease to their class peers in small groups. Data was collected by means of a questionnaire and focus groups. The results indicated that presentation of the topics increased the student’s confidence and independent learning skills as they were actively involved in the process. However, students indicated that they did not learn much from their peers (passive listening) and their perception was that their peers would not cover key aspects of the topic, which was important for exam preparation. They therefore preferred the lecturer to give the presentations as they also indicated that they needed to have clearer guidelines and support for the teaching component of the PAL programme (Hodgson et al., 2012:25).

2.2.3.3 Group work / group discussions

A group discussion or meeting is a valuable teaching strategy where students get together to exchange ideas, opinions and information through guided discussions with one another and their teacher (Bastable, 2008:434; Billings & Halstead, 2012:276; Bruce et al., 2011:214). Meyer and Van Niekerk (2008:129) refer to group work as a variety of activities that include group discussions and project work. Depending on the size of the class it is recommended that the group should consist of not more than 10–15 persons arranged in a circle or semi-circle so that they can face each other (Bruce et al., 2011:214). Working together and interacting within the group to solve problems, promotes team work, encourages active the participation of group members, fosters group cohesion, develops critical thinking, promote spontaneous dialogue, prepares students for public speaking and improves their ability to defend and debate their viewpoints (Billings & Halstead, 2012:277; Bruce et al., 2011:214; Meyer & Van Niekerk, 2008:129).

Another study was conducted (Rahman, Jaddi, Jumani, Ajmal, Malik, & Sharif, 2011:93) to determine the effectiveness of this lecture method and discussion method on a student’s performance in social studies. The experimental group was
Kulkarni and Chillarge (2015:113) undertook a pilot study to determine the effectiveness of small group discussion methods in teaching Medical Microbiology. Fifty medical students participated in the study. Students were informed about the topic the day prior to coming to class so that they could prepare for the discussion. A pre-test was given, followed by the group discussion and thereafter students wrote the post-test. Students scored higher in the post test than the pre-test. The authors concluded that group discussion promotes the interaction between students and allows the teacher to clarify points which the students are unsure of.

Davies (2009:567) reviewed the literature pertaining to group work as an assessment strategy in tertiary institutions. There are three basic models of groups; informal learning groups, formal learning groups and study groups. Some of the advantages of group work identified in the literature included the fact that it promotes active learning and deep learning as opposed to surface learning. It enhances problem-based learning among students, it can be implemented in large groups and it helps to develop leadership and communication skills. The problems associated with group work includes that some of the participants may be reluctant to participate in the assessment, the size of the group may be too large, and the possible absence of group cohesion and poor communication between varying ethnic groups (Davies, 2009:566).

In a literature review that was conducted by Chapman (2006:298), it is mentioned that small group work is increasingly being used in higher education nursing institutions and therefore it is important to ensure that the environment is conducive to learning. This can be achieved by ensuring that the students not only have the freedom to speak their minds without fear of reprisals, but also by showing respect
for and encouraging their differing values and viewpoints. There has to be a shift in the mind sets of the lecturers from the more traditional approach to teaching and learning to a contemporary approach (Chapman, 2006:298).

2.2.3.4 **Brainstorming sessions**

Brainstorming is a problem solving technique used to find solutions to problems. It can be used by the nurse educator either as a class exercise or within small groups (Jacobs *et al*., 2011:195; Quinn & Hughes, 2007:252). Brainstorming promotes active student participation, team work and increases the self-worth and self-confidence of the students (Jacobs *et al*., 2011:196).

2.2.3.5 **Projects**

A project can be defined as an out of class learner centred activity (Jacobs *et al*., 2011:196) which involves the investigation of a problem (Bruce *et al*., 2011:219) and can be done either individually or in a small group (Quinn & Hughes, 2007:248). It is a structured and planned activity and therefore the objectives, goals and guidelines must be given to the students prior to commencement of the project (Muller & Bester, 2016:513). Students learn to work as a group, it promotes self-assessment and group assessment, enhances problem solving skills, communication skills and decision making skills, which are all important attributes needed to be a successful nurse (Bruce *et al*., 2011:220; Quinn & Hughes, 2007:250).

2.2.3.6 **Narratives/story telling**

Student experiences can be narrated using different methods, such as giving verbal, written, audio or visual (video) accounts of their experiences. Stories describing students’ experiences are valuable and can be used as a source of narrative material for research (Wolf, 2011:262). By analysing student narratives, educators can gain insight and understanding to the challenges faced by students in clinical situations (Wolf, 2011:264). Post clinical conferences provide an opportunity for students to share their success stories, anecdotes and experiences with their peers and educators (Wolf, 2011:262). Educators should encourage students to engage in discussions and debates and should respond to the student’s stories and narratives in a constructive way, whilst simultaneously using the exercise as a means to
change personal perceptions and thinking from what is known to what is important and should be known (Billings & Halstead, 2012:232).

2.2.3.7 Problem-based learning

Problem solving as a teaching strategy is used to actively engage students in their own learning and enhance critical thinking and reasoning skills (Bruce et al., 2011:216). Problem-based learning (PBL) is a student centred teaching strategy that embraces adult learning, self-directed learning and experiential learning to initiate, motivate and focus knowledge construction (Bruce et al., 2011:200; Ribeiro, 2011:2). This method challenges a student or a group of students, to find solutions independently and to be able to clinically or otherwise justify their decisions (Hamdan, Kwan, Khan, Ghafar & Sihes, 2014:138; Pastirik, 2006:274). In PBL, the role of the nurse educator has shifted from that of a passive facilitator to being an active discussion leader who guides the student in the integration of theory and practice through the process of problem solving (Nettath, 2013:83).

Hand and Sibert, (2016:226), designed a learning activity to teach fourth year leadership and management students Root Cause Analysis. They did this by using medical error cases that were reported in the media or scholarly literature. Students were divided into groups of 5 or 6 and following the same principles of problem-based learning, they had to select a medical error case, summarize the main points of the case, share it with their peers in class and then identify the gaps that contributed to the occurrence of the medical error and develop strategies and actions to prevent the recurrence of the errors identified. Feedback received from the students was positive with 97% of them responding that they had the knowledge and skills to lead quality improvement initiatives in the nursing unit (Hand & Sibert, 2016:226).

In a study conducted by Pastirik (2006:266) PBL was implemented in a second year Baccalaureate nursing course using both classroom and on-line learning technology. The results revealed that PBL enhanced the autonomy of students as they had to take responsibility for their own learning. The transference of classroom knowledge to the clinical setting improved. Students’ communication skills improved as they had to present their findings both within their own allotted group and thereafter to the
entire class. The online website provided a means to post, retrieve and share course related information and allowed the nurse educator to monitor and evaluate the individual contributions made by the students.

In another study conducted by Nettath (2013:84) medical students’ perceptions towards PBL as a teaching learning method were evaluated. Prior to the study, the students were given a pre-test-based on a problem case scenario. The PBL process was facilitated by the instructor and included activities such as brainstorming sessions, group discussions and analyses of the problem, Internet searches and libraries were accessed for information, so that learning outcomes could be formulated. This was then followed by a post-test regarding the same problem scenario as the pre-test. The average score for the pre-test was 2.88 in comparison to the post-test score of 7.8. The result of the student perception questionnaire was 69.22%, which suggests that PBL is an effective teaching strategy. The limitations of this study however, included the small number of participants (13) and no comparison was made with traditional teaching methods (Nettath, 2013:85).

### 2.2.3.8 Scenarios

Scenarios are similar to case studies and problem-based learning, which requires the active participation of the students in identifying and analysing the problem, applying their existing knowledge, and finding solutions to the problems that were identified (Mau, 2009:12; Van Niekerk, 2008:136). It is a realistic and stimulating way of learning that promotes critical thinking (Gupta, Bhatti, Sadhotra, & Walia, 2016:1889).

In a study done by Hansen and Hunskaar (2011:2), a total of 88 nurses, who were working in 7 out-of-hours services casualty clinics in Norway, participated in a study evaluating their over the telephone triage abilities and other advice given to patients. Twenty written medical scenarios that were validated by an expert panel were used in the study. Each medical scenario was classified as acute, urgent or non-urgent. The nurses had to assess the scenario in terms of the degree of priority and then mark it accordingly, using the colours red, yellow or green. Among the acute cases 82% were correctly classified, 74% of the urgent cases were correctly classified and of the non-urgent cases, 81% were correctly identified. It could be concluded from
this study that nurse triage competence was safe for the patients and that the nurses possessed the necessary decision making skills that are required in a casualty clinic. However, the authors acknowledge that written case scenarios cannot fully substitute for triage that occurs in real life situations (Hansen & Hunskaar, 2011:6).

2.2.3.9 Decision making / Clinical reasoning

Johansen and O’Brien (2016:40) reviewed the literature-based on decision making and pointed out that nurses are required to make decisions on a daily basis, particularly decisions relating to ethical, policy, clinical practice and nonclinical issues. Decision making is an integral component of nursing practice and has the potential to affect patient care, safety and outcomes. The authors suggest that programs be developed to enhance decision making skills and explore different ways to make sound decisions (Johansen & O’Brien, 2016:46).

2.2.3.10 Reflection

Reflection and reflective learning is an essential part of experiential learning and is an important strategy needed to advance the professional development of nurses (Bruce et al., 2011:198; O’Connor & Hyde, 2007:291). Schön (1983) as cited by Bastable (2008:580) differentiates between reflection-on-action and reflection-in-action. Reflection-in-action occurs when the nurse reflects on the experience as it is happening so that changes can be made immediately, whereas reflection-on-action refers to reflection that takes place after the event or experience has occurred. Self-reflection requires students to think about what they have learnt, identify their strengths and weaknesses and set personal goals to overcome these shortcomings (Billings & Halstead, 2012:494). Being a reflective nurse requires taking the time to deliberate the work completed, evaluate whether the outcomes had been achieved, learn from these experiences and use this knowledge when encountering a similar situation (Erasmus, 2013:29). O’Connor and Hyde (2007:300) recommended that both the school of nursing and clinical practice enter into debates, discussions and collaboration to support reflective practice and reflective learning. They also suggested that reflective practice be included in the curriculum as well as being utilized as a teaching strategy that would help to stimulate critical enquiry and promote its use.
Ridley and Eversole (2004:181) found that when students were asked to conduct self-evaluations, they focussed on the clinical skills that they practised and had completed, but overlooked patient care. A self-reflection form was devised which included a list of terms illustrating the different roles and characteristics that could be used to assist the students in evaluating their development in the clinical practice. This was a worthy exercise and the authors reiterated that nurse educators have a fundamental responsibility to guide students to practice self-reflection and suggested that nurse educators themselves, also practice self-reflection (Ridley & Eversole, 2004:182).

The Faculty of Health Science staff of the University of Almeria designed a clinical seminar aimed at assisting the first year nursing students to cope with the stressful effects of their first clinical placement (Granero-Molina, Fernández-Sola, Castro-Sánchez, Jiménez-López, Aguilera-Manrique & Márquez-Membrive, 2012:442). The study yielded the following results: students that shared their clinical experiences with their peers and professors obtained the necessary emotional support needed to face stressful situations. It enhanced their ability to practise self-reflection and improved their communication, cognitive and psychomotor skills. (Granero-Molina et al., 2012:446).

2.2.3.10.1 Reflective diary/journal

Reflective journals are also referred to as reflective diaries, logs and clinical journals and they play an important role in the experiential learning process. It has been found that keeping a reflective journal promotes active learning and the brief written explanations of past situations can be used as a basis for active reflective (DeYoung, 2009:250; Quinn & Hughes, 2007:365). Billings and Halstead (2012:275) described reflective writing as a teaching strategy, which requires the students to critically analyse their clinical experiences and integrate these practical experiences with the theoretical content that they learnt in the classroom. It is also important that the students receive clear objectives and constructive feedback from the nurse educators (Billings & Halstead, 2012:275).

Asking students to keep a reflective diary or journal, as part of a course assignment, can yield valuable results for both the students and the educators. It allows the
students to reflect on what they are learning and how they are learning and to share their successes, fears, thoughts and reactions in clinical situations with patients with their peers and educators, whilst the educators on the other hand, can analyse the reflective journals to gain informative insight into the students learning. This helps the educator to ascertain where the students’ knowledge may be lacking and modify their teaching approaches accordingly. (Wolf, 2011:262).

2.2.3.10.2 Portfolios

Portfolios may be described as a record or collection of evidence, usually in written form, of both the procedures and processes learnt over time. It demonstrates a student’s achievements and knowledge gained (Billings & Halstead, 2012:272; Gaba, 2015:1152). Portfolios can be used for both the formative and summative assessment of nursing students, such as a program exit assessment, as a demonstration of competency as well as to support personal growth and professional development (Baitsaad, 2016:417; Ramey & Hay, 2003:32; Timmins & Dunne, 2009:331).

The practicing nurses’ portfolio is personally motivated and private and is a mandatory requirement when registering with a professional body in countries such as Australia, USA and the United Kingdom (Timmins & Dunne, 2009:331). Cangelosi (2008:126), in her study indicated that the portfolio can assist the nurse educator students in integrating theory with practice and can help them to reflect on what they have learnt during their graduate studies. It is a good tool to use when preparing for their first teaching post as a nurse educator. The student nurses portfolio can include documents such as learning agreements, a student’s reflective narrative accounts of their clinical practice, case studies covered, patient testimonials and descriptions of critical incidents. These together can be presented to the nurse educator for assessment (Baitsaad, 2016:417; Timmins & Dunne, 2009:331; Volante, 2013:51). Ramey & Hay (2003:35) stated that the most important part of a portfolio, electronic or otherwise, is the reflective component regarding the reviewing of the learning process, the compiling of the portfolio, the student’s development as an individual and their growth as a skilled professional.
Limitations of a portfolio on the other hand include difficulty to prove that the work is the student’s own, the possible lack of clear guidelines, (Timmins & Dunne, 2009:331) it is very time consuming and can be stressful when used for assessments (Baitsaad, 2016:417). These issues however, can be overcome by using an electronic or visually aided portfolio, which consists of photographs and recorded oral presentations (Timmins & Dunne, 2009:331).

2.2.3.10.3 Critical analysis of journal articles/ Literature reviews

A critique is a systematic way of objectively reviewing and analysing a research article, a proposal or a report in order to highlight both its strengths and weaknesses (Polit & Beck, 2012:724). A literature review provides the basis for the research study’s significance and applicability to practice (Boswell & Cannon, n.d:294).

Elements of a research critique could include, but not limited to; study rationale/purpose, research design, instrumentation, literature review, research question/hypothesis, study sample, data collection, data analysis, research results/findings and final recommendations (Brink, van der Walt & van Rensburg, 2012:79; Boswell & Cannon, n.d:293; Vance, Talley, Azuero, Pearce & Christian, 2013:70). Some of the benefits of inculcating the practice of critiquing research articles and conducting literature reviews in student nurses are: creating a research culture, developing research skills, enhancing professional development and improving evidence-based practices (Vance et al., 2013:74).

Cangelosi (2008:126) assigned nurse educator students the task of selecting a research article that describes an issue or a problem relevant to nursing education. When critiquing the article, students had to take cognisance of the following; the resulting impact on nurse educators and how the research findings could or couldn’t influence nursing education. The critiquing of the articles taught the students the relevance and the value of research and created an awareness of problems existing in nursing education. It also dispelled the notion that research is “something that is only done while at school”.

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2.3 USING TECHNOLOGY TO PROMOTE ACTIVE LEARNING

Technology has transformed the way students learn and it is therefore important for nurse educators to utilize innovative teaching strategies that can engage and motivate the students, especially the millennials, who are techno savvy and enjoy using technology as a learning medium (Bastable, 2008:516).

2.3.1 Digital gaming

In virtual and augmented reality, playing games has a very important part in prioritizing nursing care and can be played by individuals and groups. Digital gaming is an active learning tool that can be used as an additional e-teaching/learning resource, which promotes student discussion and the interaction between the students and their educators. It reduces stress, affords immediate feedback and provides a fun, nonthreatening learning environment (Kanthan & Senger. 2011:135).

Chia (2013:22) used a virtual game to reinforce knowledge of chronic obstructive pulmonary disease (COPD), thereafter students were required to apply the knowledge learnt in a simulated clinical setting. The study revealed that the virtual game and the practical simulated activity promoted active learning, enhanced integration of theory and practice and improved cognitive and psychomotor skills (Chia, 2013:22).

2.3.2 Digital story telling

Digital story telling uses multimedia such as computer-generated graphics, audio, video clips, music, a narrator’s voice and/or sound to tell a story. It has the potential to engage the student’s auditory and visual senses in a dramatic and powerful way (Robin, 2008:222; Suwardy, Pan & Seow, 2013:109; Yang & Wu. 2012:340).

Digital story telling can be categorised as personal narratives that revolve around personal experiences. These stories can present information or instructional material pertaining to different subjects such as art, maths or technology or they could examine historical events (Robin, 2008:224). As an instructional tool, storytelling can be used to introduce new content, facilitate discussion, help to make abstract content more understandable, enhance creativity, imagination, critical thinking and listening skills and create a neutral platform where students feel safe to discuss sensitive

In a study by Yang and Wu (2012:340), it was demonstrated that students who were exposed to digital storytelling, demonstrated a significant improvement in their abilities to listen, read and write in the English language. Qualitative feedback received from the interviews, indicated that digital story telling fosters collaborative learning, improves critical thinking and increases motivation (Yang & Wu, 2012:350).

2.3.3 Online learning / Web-based learning

Online learning/web-based learning also referred to as distance learning or E-learning, is a virtual learning environment that utilizes software to manage the interaction between the students and their educators through the use of discussion forums, chat rooms, e-mails, postings regarding course assignments etc. (Billings & Halstead, 2012:402; Häggström, Hofsten & Wadensten. 2009:178). Online learning can be designed as full web courses i.e. there is no face-to-face contact between the educator and the students or it may just be a web-enhanced or blended course, which combines contact sessions in the classroom or clinical setting with online learning (Billings & Halstead, 2012:402). This teaching strategy encompasses a student centred approach, because it promotes active learning and affords the students the opportunity to attend college in spite of work and family responsibilities. Students in remote geographical areas can complete courses without having to relocate (Hathaway, 2014:3). The advantages of these learning options includes that the students can take ownership of their own learning, searching for information is made easy, their ability to solve problems independently improves, there is flexibility regarding study times i.e. they can study at their own pace and they are able to communicate with their educator and classmates at any time of the day, thus enhancing their digital skill (Häggström et al., 2009:182).

The Catholic University of America, in Washington, promoted active learning by using online discussion boards for senior case management courses. It was found that students were inclined to use more critical thinking skills and reflect on their
answers actively as opposed to in class discussions where students were hesitant to participate (Buckley, Beyna and Dudley – Brown, 2005:32).

2.3.4 Social media (Blogs, Facebook, Twitter)

Social media or networking using sites such as Facebook, Blogs or Twitter, acts as a platform for nurses to communicate and share information. It promotes interaction between students and educators and allows students to share their experiences and learnings with peers anywhere in the world (Billings & Halstead, 2012:415; Gorea, Gorea & Gorea, 2016:100). Nurses also use social media to express their feelings, thoughts and share events that occurred in their workplace (National Council of State Boards of Nursing, 2011:1).

The majority of the students already have Facebook accounts and can therefore be requested to create a Facebook page to introduce themselves to their class members. This type of platform can also be used to share class notes or work on assignments and class projects (Billings & Halstead, 2012:415). Twitter can be used in class to post questions and then receive multiple responses to their questions. It can also be used to send short messages to an individual or group, update assignments and share information (Billings & Halstead, 2012:415).

Grassley and Bartoletti (2009:209) stated that blogs can be used for online debates that pertain to clinical issues as well as for discussion forums to address classroom issues, to develop a portfolio, to enhance a student’s dialogue and engage a student in their own learning. Blogs are also useful in that they encourage self-reflection. Faculties can use blogs to help students prepare for examinations. They do this by posting questions on the blog, which students are then required to answer citing reasons for their reply (Grassley & Bartoletti, 2009:210).

2.3.5 YouTube

Burke and Snyder (2008:40) stated in their article, that for the millennial student, YouTube, an internet-based resource, can be used to integrate relevant content and to encourage them to reflect on the application thereof in different disciplines. On the other hand, for the baby boomers, YouTube provides the experience of learning through using new technology. Different formats of learning equip the students with
technological skills, which they could use later in their careers. The advantages of using YouTube includes: it is easy to upload videos etc., you can view and share video clips, it is a free teaching resource, links can be clipped into PowerPoint presentations, it provides the educator with ready to use information and it saves the educator a lot of time. It can be used to initiate discussions and debates in the classroom (Burke & Snyder, 2008:40).

Burke, Snyder and Rager (2009:3) conducted a pilot study to explore the perceptions and the uses of YouTube among college-level health education faculties. The survey instrument was posted on Survey Monkey and emails were sent to 59 faculty members, inviting them to partake in the research study. The response rate of 40.7% (24) was received. The findings of this study indicated that faculty members who used YouTube, found it to be an effective teaching learning tool. Usage of YouTube was low in participants new to teaching and those amongst those over the age of 50 years; however they expressed their willingness to utilize this technology, if trained, in the future.

2.3.6 Wi-Fi

Billings and Halstead (2012:382) describe Wi-Fi areas, also known as hotspots, as local area networks that provide internet access in public places such as libraries, hotels, coffee shops etc. Most universities have wireless technology such as Wi-Fi that students can use to access the internet on their mobile devices e.g. iPhones, iPads or smart phones. They can then work on course assignments, submit and download data and access university information such as electronic journals wherever they are on the campus (Billings & Halstead, 2012:382). Many students and educators have become so accustomed to the availability of the resource, that they not only expect the resource to be available, but have difficulty functioning effectively when it is not.

2.4 EDUCATIONAL RESOURCES

The classroom environment, which consists of a diverse group of students with different needs and learning styles, should include a variety of educational multimedia that can be used by the nurse educators to facilitate the learning process. Educational multimedia, resources and facilities include models, posters, projectors,
films, videos, computer graphic software, such as Power Point and interactive whiteboards, facilities for videoconferencing and video streaming, libraries, computer and simulation laboratories (Bastable, 2008:502; Bruce et al., 2011:246; Meyer & van Niekerk, 2008:144). Hence, it is vitally important that these facilities and educational resources are readily available and accessible to both nurse educators and the students. The use of multimedia enhances the students learning experience, narrows the gap between theory and practice and can be used either independently or in group work (Meyer & van Niekerk, 2008:142). Multimedia is valuable when assigning project work to students as it compels them to utilize different study materials and resources (Meyer & van Niekerk, 2008:137).

Educational resources, such as computers and projectors, can be used in the teaching-learning environment. A projector is a device that uses projected light and a lens system to produce an image onto a screen. It can be used in conjunction with other resources, such as whiteboards, for group videoconferencing, to view videos, films, animations, images and clips from websites relevant to the course (Bruce et al., 2011:246).

Videos as an educational resource can be beneficial to both the nurse educators and the students, as it is readily available. It can be used to show videos or information to large groups of students simultaneously and allows the nurse educator the opportunity to stop the video at any point, pose a question and engage the students in class discussions (Bonnel & Smith, 2010:112). Billings and Halstead, (2012:494) suggests that after the viewing of a video clip relating to clinical scenarios/situations, the students can be assigned the task of reviewing, discussing or commenting, either verbally or in writing, on what they saw. These tasks help to equip the students with the necessary skills and knowledge needed to deal with similar problems when encountered in the clinical practice.

Videoconferencing on the other hand helps to maintain consistency and quality of teaching as students are exposed to the same teaching even though they may be in different locations. Both visual and auditory senses are used and it allows interaction to take place between the students and the nurse educator (Bastable, 2008:501).
The interactive whiteboard (IWB), also known as smart boards, are increasingly being used in the classroom and have a positive effect on the students learning process as it enhances interaction and collaboration between students and nurse educators by using visual media (Northcote, 2010:495). The interactions can be recorded and saved as a Pdf document, power point slides or the whole lecture can be recorded as a movie file (Türel & Johnson, 2012:382). The IWB can be used in technical subjects, such as mathematics, as it has the potential to make learning more engaging and stimulating for the students (Torff & Tirotta, 2010:379). The use of IWB technology can be beneficial to the students, as screenshots from web pages can be captured and incorporated into the teaching of the content (Türel & Johnson, 2012:382).

The library provides an important educational service and is essential in the teaching-learning process with its main purpose being to make available resources such as educational technology, journals and books which are not provided or assigned to the student as prescribed or recommended textbooks (Owoeye & Yara, 2011:66). Goodall and Pattern (2011:4) suggests that students, who read more, borrow books from the library and access electronic resources achieve better grades (Owoeye & Yara, 2011:66). However, digitization has led to a decrease in the usage of library facilities of late (Cheong, 2010:2).

A poster is an example of an educational resource that can be used in the teaching-learning environment. A Poster is a visual representation designed to convey information in such a manner that they attract attention and leave a lasting impression on the viewer (Bastable, 2008:489; Billings & Halstead, 2012:273). Making posters can serve as a group activity (Mellish et al., 1998:195) to transmit or reinforce information (Bastable, 2008:490). However, clear guidelines must be given regarding the content that is to be displayed on the poster and the method by which the poster will be evaluated (Billings & Halstead, 2012:273). Some of the advantages of using posters include fostering the creativity of students, it is a relatively inexpensive tool that is easy to make, it allows for feedback to be given by both peers and the nurse educator and the message can be conveyed to a large audience (Bastable, 2008:490; Billings & Halstead, 2012:273).
The private NEI has an intranet system, which is an internal network system that students can access through the computer laboratory. Ovid and primal pictures are two programmes which students can access via the intranet. Ovid is a comprehensive, integrated nursing and allied health portal for practice, education, research and administration. It provides access to online bibliographic databases, academic journals, and other products, predominantly in the area of health sciences. Primal pictures are interactive multimedia modules which offer the following features: structural views and 3D images of the different systems of the body, cross section anatomy, clinical videos, clinical texts, MRI images and interpretations, functional anatomy animations, interactive programs that allow the students to add, remove and reconstruct layers as well as to rotate and label any structure in the body (Wolters Kluwer Health, n.d.1). These resources can be utilized to facilitate active, self-directed learning, promote group discussions and integrate theory and practice.

An E-book is a digital book that is displayed on a computer screen. It is specifically designed for reading or as a personal digital assistant and may consist of text, graphics, animation, with or without audio visual content. Access can be restricted to specific students either directly or indirectly (Jeong, 2012:391; Walters, 2013:188). Statistics obtained from more than 360 American universities shows that 84% of the students read e books on their laptops or personal computers, 70% utilize the computers that are available for use in the library, 12% use e-book readers e.g. Kindles and 22% use other portable devices (Walters, 2013:188). E-books are easy to use, portable, light, easy to store and available 24 hours a day (Jeong, 2012:391).

The disadvantages associated with using E-books include eye fatigue, moving from one page to another can be tiresome, it can be difficult to find specific words and often it lacks an index and page numbers. Graphics or tables are harder to read on the screen, it is difficult to highlight important terms or phrases and some versions are unable to read on different devices e.g. Kindle books can only be read using a Kindle reader and it is expensive to purchase one of these (Jeong, 2012:391; Lopatovska, Slater, Beauregard, El Mimouni, Lange & Orlofsky. 2014:2; Walters, 2013:195).
2.5 CONCLUSION

The literature was reviewed in order to identify and gain insight into the different teaching strategies and resources that are available to promote active learning in the classroom. The benefits of using these varying strategies for the students, the nurse educators and the nursing profession as a whole were discussed. The literature revealed that it is important for the students to be active participants and to engage in their own learning process. It was found that this not only promotes the development of critical thinking skills, communication skills and problem solving skills, but it also prepares the students to function as independent practitioners in the nursing profession. The importance and advantages of incorporating varying teaching strategies that utilize technology for example, especially in teaching the millennial students who are technologically savvy, were identified.

The following chapter, Chapter 3, describes the research process utilized. It goes into detail regarding the research methodology, population, recruitment, data collection instruments and processes, including discussing the pilot study, data analysis, validity and reliability issues as well as the ethical considerations that were used in the research study.
CHAPTER 3
RESEARCH METHODOLOGY

3.1 INTRODUCTION

Chapter one presented an overview of the research study and chapter two a detailed description of the literature review, on the teaching strategies used to facilitate active learning. The research methodology is discussed in detail in chapter 3. It includes a description of the research design and research method i.e. population, conducting the census, the sample size, inclusion criteria, recruitment process, the pilot study, data collection and data collection analysis. A description of the data collection instrument, including its reliability and validity, is also addressed. The ethical aspects observed during the research study are also discussed.

3.2 RESEARCH DESIGN

The research design can be defined as a plan or blueprint showing how one intends to conduct the research study. It focuses on the purpose of the study, planning and implementing all the steps, the process followed in order to achieve the desired outcomes, how the answers to the research questions were obtained and focuses on the end product (De Vos, Strydom, Fouché & Delport, 2011:143; Grove, Burns & Gray, 2013:195; Polit and Beck, 2012:58). The research design is structured and organized and indicates how often data will be collected, the type of comparisons that will be made and where the study will take place (Polit and Beck, 2010:74). This study followed a quantitative, descriptive, exploratory and contextual research design in order to determine the activities, educational resources and teaching strategies used to facilitate active learning in a private NEI.

3.2.1 Quantitative

Quantitative research is defined as a systematic process that follows logical steps, which include defining the problem, selecting the concepts on which to focus and implements a specified plan of action (Polit & Beck, 2012:13). The definition is supported by Grove et al., (2013:25) when stating that quantitative research is concerned with objectivity, incorporates deductive reasoning, requires the use of
measuring instruments such as questionnaires, employs statistical analysis that generates numerical data and has the ability to generalize the findings when describing and examining the relationships among variables.

Below is a summary of the main characteristics of quantitative research.

**Table 3.1: Characteristics of a quantitative research method**

<table>
<thead>
<tr>
<th>Element</th>
<th>Characteristic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose</td>
<td>Explaining, predicting and controlling phenomena</td>
</tr>
<tr>
<td>Reality</td>
<td>Objective, empirical evidence</td>
</tr>
<tr>
<td>Role of researcher</td>
<td>Detached from the study and does not participate in the events under investigation</td>
</tr>
<tr>
<td>Reasoning</td>
<td>Incorporates logical, deductive reasoning to generate predictions</td>
</tr>
<tr>
<td>Focus</td>
<td>Is narrow and concise that is focus on a small number of concepts</td>
</tr>
<tr>
<td>Representatives</td>
<td>Large number of participants</td>
</tr>
<tr>
<td>Type of data</td>
<td>Numbers and statistics</td>
</tr>
<tr>
<td>Data collection</td>
<td>Use structured procedures and formal instruments to collect information</td>
</tr>
<tr>
<td>Data analysis</td>
<td>Analyses numeric information through statistical procedures</td>
</tr>
<tr>
<td>Conditions</td>
<td>Uses various control strategies to ensure that biases are minimized and precision and validity are maximized</td>
</tr>
<tr>
<td>Results</td>
<td>Generalizable findings that can be applied to other populations</td>
</tr>
<tr>
<td>Presentation of results</td>
<td>Narratives, graphs, figures, tables</td>
</tr>
<tr>
<td>Scientific method</td>
<td>Uses a set of logical, systematic steps to acquire information</td>
</tr>
</tbody>
</table>


The research study conducted was quantitative as it utilized a logical, systematic process to obtain information. The researcher focussed on a small number of
concepts, which included the activities, educational resources and teaching strategies currently used in a specific private NEI to facilitate active learning. It was logical to utilize a quantitative research method as the private NEI has a large number of students, but who are registered at the different Learning Centres (LC) and associated classrooms (AC) throughout the country. Quantitative research was appropriate for this study as it used a formal instrument to collect the data i.e. this research study made use of a self-administered questionnaire (SAQ) to collect data. The use of the quantitative research method enabled the researcher to identify the strengths and the shortcomings associated with the activities, educational resources and teaching strategies identified.

3.2.2 Descriptive

The descriptive study design is used to obtain more information about a specific phenomenon. It describes what exists and provides an outline of situations as they naturally occur. It may also be used to identify problems with current practices or to justify the use of current practices (Brink et al., 2012:112; Grove et al., 2013:214; Polit & Beck, 2012:227). The researcher decided on this approach as it provides valuable and first-hand information regarding the activities currently used by the nurse educators; the educational resources currently available at each LC and AC; as well as the teaching methods utilized to facilitate active learning. In this way, the researcher was able to obtain an overview of current practices utilized.

3.2.3 Exploratory

Exploratory research is aimed at gaining insight into a phenomenon of interest, including the underlying factors that are causing the phenomenon to occur. To do this, it focusses on the “what” question (De Vos et al., 2011:95; Polit & Beck, 2012:18). This approach can be used when there is insufficient information available to the researcher regarding a specific topic of interest.

The researcher elected to use an exploratory design as no previous study had been conducted at this particular NEI regarding the teaching strategies used to facilitate active learning. This enabled the researcher to gain insight into the educational resources that are available at each LC and AC, as well the current teaching strategies utilized by the nurse educators.
3.2.4 Contextual

The private NEI, where the study was conducted, is managed centrally at a national level and has seven LCs and four ACs situated in different geographical areas throughout South Africa. The LC and AC were defined in chapter one. The researcher is a manager at one of the LCs and wanted to determine which activities, educational resources and teaching strategies were being used at the other LCs and ACs. The researcher therefore opted to conduct the research study at this specific private NEI as opposed to the public nursing colleges or other private NEI's. Only students registered for the different programmes offered at the LCs and ACs of this private NEI were included in the research study. In chapter four, the researcher gives a detailed description of the programmes offered at the private NEI. The private NEI works on a block system. In a block system, the programme is divided into contact time frames, which are dedicated to either classroom teaching or clinical placement (Uys and Gwele, 2005:62). The data collection time-frame was scheduled in the March-April 2016 block period. The data collection method is discussed in detail in section 3.3.6 of this chapter.

Brink *et al.* (2012:59) refers to a research setting as the specific site where the information is collected and which is based on the type of data needed to address the research question. There are three settings where the research study can be conducted, namely; the natural, partially controlled and highly controlled settings. This can include one or many sites (Brink *et al*., 2012:59; Grove & Burns, 2013:373; Polit & Beck, 2012:49). An uncontrolled, real-life environment is deemed as a natural setting. The researcher does not change the environment and it is in this setting where descriptive studies are usually conducted (Brink *et al*., 2012:59; Grove *et al*., 2013:373; Polit & Beck, 2012:49). A partially controlled setting refers to an environment that has been modified in some way by the researcher, whilst a highly controlled environment is one that has been especially designed for the purpose of research e.g. a laboratory (Brink *et al*., 2012:59).

This study was naturalistic as the self-administered questionnaires were handed to the students in their natural environment, in this case, the classroom where they normally go for class and feel most comfortable. They could complete the self-administered questionnaire at their leisure, allocating them time to reflect on the
current teaching practices utilized and relate these to the questions asked in the questionnaire.

3.3 RESEARCH METHOD

The research method describes how the research study will be carried out and what the researcher will do to answer the research question(s) (Brink et al., 2012:199). The research method consists of the techniques used by the researcher to structure the study and to gather and analyse information in a systematic manner (Polit & Beck, 2012:741). In this study a self-administered questionnaire (SAQ) was used to collect data (See Annexure E) relating to the research objective, which was to explore and describe what activities, educational resources and teaching strategies are being used to facilitate active learning in a private nursing education institution. The SAQ is discussed in detail in section 3.3.3 of this chapter. Based on the findings of the study, the researcher made recommendations to the private nursing education institution regarding the facilitation of active learning. The section directly below discusses the population, census method, data collection instrument, recruitment process, the pilot study and the data collection and analysis methods.

3.3.1 Population

Population in research is defined as all elements including individuals, objects, events or substances having some common characteristic and meets the criteria for inclusion in a study (Brink et al., 2012:216; Grove et al., 2013:703). Polit and Beck (2012:744) describe the target population as the entire population in which the researcher is interested in and on which he/she would like to generalize the study results. For the purpose of this research study, the target population included all the students who are registered for the programmes that are offered at the seven LC and the four AC run by the private NEI. See table 3.2 below.
Table 3.2: Number of students registered at each LC or AC

<table>
<thead>
<tr>
<th>Learning Centre / Associated Classroom</th>
<th>Number of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Centre 1</td>
<td>113</td>
</tr>
<tr>
<td>Learning Centre 2</td>
<td>118</td>
</tr>
<tr>
<td>Learning Centre 3</td>
<td>97</td>
</tr>
<tr>
<td>Learning Centre 4</td>
<td>147</td>
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<tr>
<td>Learning Centre 5</td>
<td>127</td>
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<tr>
<td>Learning Centre 6</td>
<td>198</td>
</tr>
<tr>
<td>Learning Centre 7</td>
<td>123</td>
</tr>
<tr>
<td>Associated Classroom 1</td>
<td>22</td>
</tr>
<tr>
<td>Associated Classroom 2</td>
<td>26</td>
</tr>
<tr>
<td>Associated Classroom 3</td>
<td>22</td>
</tr>
<tr>
<td>Associated Classroom 4</td>
<td>18</td>
</tr>
<tr>
<td><strong>Total number of students</strong></td>
<td><strong>1011</strong></td>
</tr>
</tbody>
</table>

### 3.3.2 Census method

The Australian Bureau of Statistics (2013: para. 2) defines a census as a study of every unit, everyone or everything in a population and refers to it as a complete enumeration. The aspects to consider when conducting a census is the inclusion of all persons, place(s) where the census will be conducted and the specified period in which it will be conducted (Statistics South Africa, 2011. para. 2). Daniel (2012:52) suggests that a census method should be used when the researcher requires a total count of the population; credible results; when the population is heterogeneous; when gaining access to the population is difficult; the possibility exists that the nonresponse rate will be high and when there is a need to include a small subpopulation. The advantages of using a census method is that there is no sampling error as a true measure of the population is provided, base-line data obtained from the census can be used for future studies and in-depth information of sub-groups within the larger population can be obtained (Australian Bureau of Statistics, 2013: para. 4). A census method requires large numbers of participants.
and covers an entire population, which means that the larger the sample size, the more accurate the representation of the population it is likely to be (Polit & Beck, 2012:264). Sample size is defined as the number of people who are recruited and have consented to partaking in the research study (Grove et al., 2013:708; Polit & Beck, 2012:742). The student population at the NEI at the time of the study was 1011. The researcher used a census method and included all the students in the study, thus minimizing the risk of selection bias (Daniel, 2012:33). The LC and AC of the private NEI are situated in different geographical areas throughout South Africa; therefore it was more practical to utilize a census method for this research study (Daniel, 2012:55).

3.3.3 Data collection instrument

As a part of this research study, data was collected by means of a self-administered questionnaire (SAQ). A questionnaire is a document designed by the researcher and which comprises a list of questions focused on a specific topic in order to obtain information from participants’ regarding the topic (Grove et al., 2013:425; Polit & Beck, 2012:265). Questionnaires have the following advantages; they are cost effective, a larger and more diverse sample can be obtained, it can be distributed in person, via mail or via the internet, it offers the possibility of anonymity there is no interview bias as the researcher is not present when the questions are being answered (Polit & Beck, 2012:304).

The SAQ was developed in consultation with the researcher’s supervisors and with a statistician. It was based on information gained from investigating published research regarding the topic and from the literature review that was conducted on teaching strategies utilized to facilitate active learning. The researcher also reviewed other data collection instruments that were previously used by others in their research studies. Fink’s Model of Holistic Active Learning was used as a point of departure when developing the SAQ. The three components of active learning identified in Fink’s model were as follows; information and ideas, experience and reflective dialogue. The questions were developed in order to determine what type of activities were the nurse educators assigning to students with the aim of facilitating active learning e.g. were they possibly using pre-class reading as a tool, which would be classified in terms of Fink’s model under the component “information and ideas". The
questions were also designed to address the teaching strategies that are currently being utilized by the nurse educators to teach the different programs offered at the LCs and ACs. Teaching strategies such as simulation and demonstration are categorized under the component “experience” whilst reflection and reflective journals are classified in terms of Fink’s model, under the component “reflection”. The researcher also developed other questions with the purpose of getting answers pertaining to technology and non-technology-based teaching strategies, such as digital story telling (technology), mind mapping and role playing (non-technology). Close ended/dichotomous questions were asked to determine the availability of educational resources at each of the LCs and ACs. The researcher’s supervisors and the statistician were consulted throughout the development of the SAQ.

The SAQ used in the research study consisted of three sections.

**Section A: Biographical data**

The information obtained from this section included personal data, such as “age”, “gender” and “chosen programme of study”.

**Section B: Activities facilitating active learning**

This section included statements that could be used to assess the students’ level of agreement or disagreement regarding specific activities used at the LCs and ACs to facilitate active learning. The five point Likert scale was used and included the following response categories: “strongly disagree”, “disagree”, “neutral”, “agree” and “strongly agree”.

Rank-order questions were also used where the participants were required to rate activities along a continuum, such as least preferred to most preferred.

**Section C: Educational resources and teaching strategies**

In this section, there were items that examined the educational resources available as well as the teaching strategies utilized at the LC and AC. The five point Likert scale and rank-order questions were used as explained above.
The SAQ included close-ended/dichotomous questions, where the participants had to choose between two response alternatives i.e. yes or no. Data collected from close-ended questions are useful as they are more objective (Grove et al., 2013:427).

Open-ended questions were also included in the SAQ. Here the participants were required to give their written opinions regarding the individual and group activities, the resources and the teaching strategies utilized by the nurse educators. Open-ended questions give the participants the opportunity to provide responses in their own words and allows for creativity and self-expression (Polit & Beck, 2012:298). Data collected from open-ended questions are subjective, as participants are giving their own views and opinions (Grove et al., 2013:427).

3.3.4 Access to Learning Centres

Grove et al. (2013:707) defines the recruitment of research participants as the process of identifying potential subjects, approaching them to participate in the study and gaining their acceptance to participate.

The researcher met with all of the Learning Centre Managers (LCM) in November 2015 to request the participation of all the students under their management in the research study. A number of practical issues pertaining to the research study were also discussed and the researcher provided proof of ethical clearance by the following institutions: Faculty Postgraduate Studies Committee of Nelson Mandela University (See Annexure A) and the private NEI (See Annexure C). The researcher described the objectives of the study, identified the population that would be participating in the study, explained the role of both the participants and the LCMs and explained the method by which the SAQ would be delivered to the different sites. The researcher requested input regarding the best period to collect the data and as to which process should be followed when collecting the data. Each LCM that agreed to the study signed a confidentiality agreement in which they agreed to participate in the research study, pledged to fulfil their functions as outlined by the researcher and to ensure that all information obtained during the data collection process would be treated confidentially. They also agreed that students had the freedom to choose whether or not they wanted to participate in the research study.
They also assented that should they, the LCMs, become privy to any information regarding responses to the questionnaire, that they would not interfere or use the information in any way.

### 3.3.5 Pilot study

A pilot study is defined as a smaller version or trial run of the proposed research study. Its purpose is to identify potential problems and refine the methodology before commencing with the research study (Brink et al., 2012:216; Grove et al., 2013:46). The pilot study provided the researcher with valuable information regarding the feasibility of the study, it identified problems with the study design, pre-tested the data collection instrument and clarified all ambiguity related to the instructions, it determined whether the time allotted to complete the questions was sufficient, it sampled the population and demonstrated project costs for budgeting purposes (Brink et al., 2012:174; Grove et al., 2013:46; Polit & Beck, 2012:194). The pilot study alerted the researcher to potential problems that could be encountered during the main research study and assisted the researcher in finding ways to overcome these by implementing the necessary changes (De Vos et al., 2011:241).

The researcher conducted the pilot study at one of the AC, which did not form part of the main study. After ethical approval had been granted by the private NEI, consent was obtained from the LCM and nurse educators responsible for managing the AC. A date and time for conducting the pilot study was arranged with the nurse educators so as to minimize the interruption of classroom activities. Twenty two students were present at the AC on the agreed date. The researcher explained the aim and objectives of the research study and they were all requested to participate, but at their free will and with insurance of non-disclosure. Written consent was obtained from the twenty two students as they all agreed to participate in the pilot study. Thereafter the SAQ was completed by the sample pool of students.

From the results of the pilot study and consultation with the researchers’ supervisors and statistician, it was determined that minimal changes to the SAQ were required. In Section A: (Biographical data), the programme for the Diploma in Operating Department Assistance and year of study was included. In Section C: (Educational resources and teaching strategies), changes were made to the statement “Indicate
what educational resource(s) are available at the Learning Centre/associated classroom where you attend classes”. Instead the question was altered to read “Are the educational resource(s) listed below available at the Learning Centre/associated classroom where you attend classes?” The five point Likert scale depicting the level of agreement or disagreement with the statement “The nurse educator utilizes the following teaching strategies in the class” was removed and replaced with a close-ended question “Does the nurse educator utilize the following teaching strategies in the class”.

Brink et al. (2012:174) recommends that the data collected during the pilot study should not be included in the main study. Therefore the researcher did not include the findings of the pilot study that was conducted at one of the AC in the final research study results. However, the data collected during the pilot study will be kept along with the data from the main study under lock and key for the next five years.

3.3.6 Data collection method

Data collection is the precise, systematic gathering of information relevant to the purpose of the research study and is the process of questioning and addressing the research objectives (Grove et al., 2013:691; Polit & Beck, 2012:725).

All seven LC and three of the AC that participated in the main research study were allotted codes to ensure their anonymity. The 22 participants from the AC where the pilot study was conducted were excluded from Table 3.3
Table 3.3: Coding of LC and AC

<table>
<thead>
<tr>
<th>Learning Centre / Associated Classroom</th>
<th>Number of students registered at the LC/AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Centre 1</td>
<td>n = 113</td>
</tr>
<tr>
<td>Learning Centre 2</td>
<td>n = 118</td>
</tr>
<tr>
<td>Learning Centre 3</td>
<td>n = 97</td>
</tr>
<tr>
<td>Learning Centre 4</td>
<td>n = 147</td>
</tr>
<tr>
<td>Learning Centre 5</td>
<td>n = 127</td>
</tr>
<tr>
<td>Learning Centre 6</td>
<td>n = 198</td>
</tr>
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<td>n = 123</td>
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<tr>
<td>Associated Classroom 1</td>
<td>n = 26</td>
</tr>
<tr>
<td>Associated Classroom 2</td>
<td>n = 22</td>
</tr>
<tr>
<td>Associated Classroom 3</td>
<td>n = 18</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>989</strong></td>
</tr>
</tbody>
</table>

The data collection time-frame was scheduled for the March-April 2016 block period. However, due to unforeseen circumstances beyond the control of the researcher, the block period was moved to the month of May.

At the end of April 2016, the researcher consulted each LCM telephonically and followed up via email, reaffirming their role as well as the role of the students who agreed to participate in the research study. Data was then collected at the different LCs and ACs during the period 05th May to the 31st May 2016. Self-administered questionnaires (SAQ), informed consent and information letters, envelopes labelled “Consent forms” and envelopes labelled “Completed questionnaires” were all sent by the researcher via courier services to the LCM.

The last day and the last period of the block, the LCM addressed the students and informed them about the research study. A copy of the information letter explaining the aim of the study, the role of the participants and the ethical aspects that the researcher would adhere to, was handed to each student for their perusal (See Annexure F). They were then given the opportunity to ask questions. The LCM
explained to the students that their participation was voluntary and that they had the freedom to either accept or decline the request to partake in the study. They could withdraw from participating in the study at any time and there would be no adverse action taken against them. The students who did agree to participate in the study were requested to complete the written consent form (See Annexure G) and place it in the envelope labelled “Consent forms”. Students were also instructed not to write their name or the name of the LC/AC at which they studied on the SAQ, thus ensuring that anonymity and confidentiality was maintained. Thereafter, the participants were handed the SAQ. The participants were instructed that they could complete the SAQ in their own and without any influence from other participants (even though they were in the same room). On completion of the SAQ, the participants personally placed the SAQ in the envelope labelled “Completed questionnaires”. The envelope was then sealed by the LCM. The researcher arranged with a courier company to collect the sealed envelopes from each LC and AC. The courier costs were covered by the researcher.

There were 1011 students registered at the private NEI. The 22 students that participated in the pilot study were not included in the main study. Hence, a total of 989 SAQ were sent out to the LC/AC. A total of 721 completed SAQ were returned to the researcher. See table 3.4 below depicting the breakdown of the completed SAQ from the seven LCs and three ACs.

<table>
<thead>
<tr>
<th>Learning Centre / Associated Classroom</th>
<th>Number of SAQ sent</th>
<th>Number of SAQ returned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Centre 1</td>
<td>113</td>
<td>72</td>
</tr>
<tr>
<td>Learning Centre 2</td>
<td>118</td>
<td>113</td>
</tr>
<tr>
<td>Learning Centre 3</td>
<td>97</td>
<td>53</td>
</tr>
<tr>
<td>Learning Centre 4</td>
<td>147</td>
<td>59</td>
</tr>
<tr>
<td>Learning Centre 5</td>
<td>127</td>
<td>121</td>
</tr>
<tr>
<td>Learning Centre 6</td>
<td>198</td>
<td>144</td>
</tr>
<tr>
<td>Learning Centre 7</td>
<td>123</td>
<td>107</td>
</tr>
<tr>
<td>Learning Centre / Associated Classroom</td>
<td>Number of SAQ sent</td>
<td>Number of SAQ returned</td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>--------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>Associated Classroom 1</td>
<td>26</td>
<td>16</td>
</tr>
<tr>
<td>Associated Classroom 2</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>Associated Classroom 3</td>
<td>18</td>
<td>14</td>
</tr>
<tr>
<td><strong>Total number of SAQ</strong></td>
<td>989</td>
<td>721</td>
</tr>
</tbody>
</table>

### 3.3.7 Data analysis

Data analysis is the systematic organization and synthesis of research data conducted to reduce and give meaning to the resulting data (Grove et al., 2013:691; Polit & Beck, 2012:725). The information collected during the research study was captured by the researcher on an Excel spreadsheet. The format was agreed upon with the statistician before data collection and capturing took place. Once the data was successfully captured, it was handed over to the statistician. The statistician then imported the data into Statistica Version 12, which is a spreadsheet-based statistical analysis software package that is used to obtain both a descriptive and a statistical summarization of the data.

Descriptive statistics were used to describe the common features found among the data using the mean and standard deviation. This provided a detailed summary of the data that could then be interpreted by the researcher (Brink et al., 2012:190; Scott and Mazhindu, 2014:44). The findings were tabulated and depicted using graphs. A detailed description of the data analysis and the results is discussed in chapter four of this study.

### 3.4 METHODS USED TO ENSURE QUALITY OF THIS STUDY

When using self-administered questionnaires (SAQ), as in this study, the validity and reliability of the research instrument must be ensured as the researcher want the results to be meaningful and accurate (Brink et al., 2012:163; De Vos et al., 2011:173).
3.4.1 Validity

Validity refers to a quality standard that depicts the degree to which inferences can be made about the study and the level of accuracy of the measurement (Polit & Beck, 2012:744). Validity of the instrument establishes that it measures only that which it is supposed to by acquiring only the data that is pertinent to the topic (Scott and Mazhindu, 2014:33). The researcher read and re-read the questions of the SAQ to ensure that there was no ambiguity. The researcher’s supervisors were consulted and gave constructive feedback regarding their understanding of the questions. The statisticians assisted with and reviewed the SAQ for the sake of confirming both content and face validity and a pilot study was also conducted prior to the main research study.

3.4.1.1 Face validity

Face validity verifies that the instrument appears to measure the desired content and is based on the judgement made by experts in the field (Brink et al., 2012:166). To ensure that the SAQ met the criterion of face validity, the researcher gave the SAQ to two employees from a Higher Education Institution (who were not involved in the research study) to assess the questions for accuracy and relevance as recommended by Grove et al. 2013:694 and Scott and Mazhindu, 2014:33. The supervisors of the study are experienced nurse educators and were therefore also consulted.

3.4.1.2 Content validity

Content validity is an assessment of how well the instrument represents all the components of the variable to be measured and is mainly used in the development of questionnaires (Brink et al., 2012:166). The researcher ensured that the questions asked in the SAQ were related to the teaching strategies used to facilitate active learning as well as being based on other research findings from the literature review conducted. The experts and supervisors also assessed the SAQ in this regard.

3.4.2 Reliability

Reliability consists of two main concepts; the first is that of stability (consistency over time) and the second, internal consistency. To ensure consistency over time the
researcher ensured that the questions were carefully worded i.e. the questions are not time-related (Scott and Mazhindu, 2014:32). The internal consistency of the questionnaire is related directly to the manner in which the questions focus on the phenomenon of interest, which in the case of this study, are the teaching strategies used to facilitate active learning. This means that the respondents will give similar answers, if the questionnaire is internally consistent. The researcher used the Likert scale when collecting data and therefore the Cronbach’s alpha reliability coefficient was calculated (Grove et al., 2013:544).

3.5 RESEARCH ETHICS

The researcher has a dual ethical responsibility. Firstly to the individuals who participate in the research study and secondly to the discipline of science to ensure that the reporting of the research is accurate and honest (De Vos et al., 2011:143). The following aspects relating to research ethics, namely informed consent, privacy and confidentiality, beneficence, non-maleficence, veracity, justice and gaining permission to conduct the research study are discussed below.

3.5.1 Informed consent

Informed consent refers to the approach used to ensure that the participant voluntarily agrees to participate in the research study and that he/she fully understands what the study entails (Brink et al., 2012:213). In terms of the National Health Act (61 of 2003: section 6.2:12; section 7.3:13) informed consent means that the person has the legal capacity to give the consent and has been informed about the procedure in a language that he/she understands, taking into account the persons level of literacy. In this study the correct procedure was followed regarding the implementation of informed consent. All of the participants who participated in the study were 18 years of age or older and could therefore legally consent. Prior to the commencement of this research study each participant was handed an information letter which explained the aim of the study, their role in the study and the ethical aspects that the researcher would have to adhere to. The participants were not coerced or forced to participate in the study and could discontinue with the study at any time without fear of prejudice or victimization.
3.5.2 Confidentiality and anonymity

Confidentiality means that the researcher will not disclose any information provided by the participants and that the information provided will be for research purposes only (Pera & van Tonder, 2011:335). The anonymity of the participants was ensured as they were not required to write their names, the name of the LC or AC or any other personal information on the SAQ and therefore neither staff members nor the researcher would be able to trace any responses back to a particular student. Confidentiality was further ensured as each of the LCM involved in the data collection process signed a confidentiality agreement prior to the commencement of the research study. The LCMs were also asked not to read the responses from the students. For further assurance of confidentiality, the students were asked to put their SAQ straight into a marked envelope themselves once they had completed it.

3.5.3 Beneficence

Beneficence is one of the elemental ethical principles of research, which states that the researcher has a duty to ensure that maximum benefits are obtained from the research (Polit & Beck, 2010:121). The private NEI will benefit from the research study as the analysis of data and the results will reveal what teaching strategies are currently utilized in LCs and ACs nationally and recommendations will be made, based on extensive research, as to what strategies are best at stimulating active learning. Students will also benefit when the guidelines developed in this study are implemented in each of the LC and associated classrooms. The students' active participation in class should improve and therefore their learning and satisfaction with the courses should improve as well.

3.5.4 Non-maleficence

Students are regarded as vulnerable and therefore the researcher has an obligation to avoid, prevent or minimize harm (Polit & Beck, 2010:121). Harm and discomfort encompasses the physical as well as the psychological or emotional aspects (Polit & Beck, 2012:123). In this research study the participants were not exposed to psychological harm as the questions in the SAQ did not require any sensitive or personal information.
Students are also a vulnerable population by virtue of the fact that they are a captive audience and could be abused or threatened by people in power. The principle of non-maleficence was upheld as no student was forced or coerced to participate in this research study and all students were given the opportunity to withdraw from the study at any time should they wish to do so. Confidentiality and anonymity was also upheld (also in the report to the NEI) at all times.

3.5.5 Veracity

Veracity implies the telling of the truth and includes the objective communication of information (Pera & van Tonder, 2011:87). The researcher honoured this principle by fully disclosing the purpose of the study to the LCM’s and participants. The participants were given sufficient and appropriate information and all questions were answered honestly. The data was collected and analysed accurately, honestly and without any manipulations.

3.5.6 Justice

The term justice refers to the participant’s right to fair selection and treatment (Brink et al., 2012:36; Polit & Beck, 2010:124). This principle was upheld as the researcher ensured that the same questionnaire was couriered during the month of April to all seven LC and all three associated classrooms. All students were granted the equal opportunity to participate in the study irrespective of their level of training, programme being studied, race, beliefs, culture or religion.

3.6 CONCLUSION

In this chapter the research design and methodology are discussed. The research methodology was presented and included the population, census method, data collection instrument, pilot study, recruitment of the participants and ethical considerations. Data analysis is discussed in more detail in chapter four.
CHAPTER 4
DATA ANALYSIS AND RESEARCH FINDINGS

4.1 INTRODUCTION

In chapter one an overview of the research study was presented. The literature review was discussed in chapter two and chapter three described the research design and methodology used to conduct the study. This chapter will discuss the analysis of the results and data obtained from the self-administered questionnaires. It also includes an interpretation of the findings from the literature review that was conducted. The aim of this chapter is to address research objective one, namely “To investigate what activities, educational resources and teaching strategies are used to facilitate active learning in a private nursing education institution”. The recommendations, limitations and conclusion will be presented in chapter five.

4.2 SAMPLE OF STUDENT NURSES

There were 1011 students registered at the private NEI. The 22 students from one of the AC who participated in the pilot study were not included in the main study. Hence, a total of 989 self-administered questionnaires (SAQ) were sent out to the seven LCs and three ACs. On the day that the SAQ were handed out, 11 students were absent. Therefore only 978 students were asked to participate in the study. Of the 978 prospective participants, 257 chose not to partake in the study. Thus 721 questionnaires were completed and returned for analysis (n=721). A response rate of 73.7% \([n=721 \text{ (respondents)} \div n=978 \text{ (original sample)}]\) was achieved in this study. According to Rumsey (2011:258) a response rate of more than 70% is regarded as a good response rate.
Example of response rate calculation: LC1
SAQ sent to LC1 = 113
SAQ returned from LC1 = 72
Response rate for LC1 = 72 / 113 = 63.7%

Example of response rate calculation in relation to the entire sample: LC1
SAQ returned from LC1 = 72
Total number of SAQ returned from the 7 LCs and 3 ACs = 721

\[
\% \text{ for LC1} = \frac{\text{SAQ returned from LC1}}{\text{Total number of SAQ returned from 7 LC and 3 AC}} \times 100
\]

\[
\% \text{ for LC1} = \frac{72}{721} \times 100
\]

\% for LC1 = 9.9%

This means that LC1 makes up 9.9% of the total number of self-administered questionnaires which were returned.

4.2.1 Response rate of SAQ from the LCs and ACs

Table 4.1 depicts the number of SAQ that were sent to and returned from each centre, the response rate of each centre as well as the percentage of SAQ returned in relation to the entire sample.

Table 4.1: Response rate of questionnaires

<table>
<thead>
<tr>
<th>LC / AC</th>
<th>SAQ sent</th>
<th>SAQ returned (percentage)</th>
<th>Percentage in terms of the number of SAQ returned (721)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC 1</td>
<td>113</td>
<td>72 = (63.7%)</td>
<td>9.9%</td>
</tr>
<tr>
<td>LC 2</td>
<td>118</td>
<td>113 = (95.7%)</td>
<td>15.7%</td>
</tr>
<tr>
<td>LC 3</td>
<td>97</td>
<td>53 = (54.6%)</td>
<td>7.4%</td>
</tr>
<tr>
<td>LC 4</td>
<td>147</td>
<td>59 = (40%)</td>
<td>8.2%</td>
</tr>
<tr>
<td>LC 5</td>
<td>127</td>
<td>121 = (95.2%)</td>
<td>16.8%</td>
</tr>
<tr>
<td>LC / AC</td>
<td>SAQ sent</td>
<td>SAQ returned (percentage)</td>
<td>Percentage in terms of the number of SAQ returned (721)</td>
</tr>
<tr>
<td>---------</td>
<td>----------</td>
<td>--------------------------</td>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td>LC 6</td>
<td>198</td>
<td>144 = (72.7%)</td>
<td>19.9%</td>
</tr>
<tr>
<td>LC 7</td>
<td>123</td>
<td>107 = (87%)</td>
<td>14.8%</td>
</tr>
<tr>
<td>AC 1</td>
<td>26</td>
<td>16 = (61.5%)</td>
<td>2.2%</td>
</tr>
<tr>
<td>AC 2</td>
<td>22</td>
<td>22 = (100%)</td>
<td>3.1%</td>
</tr>
<tr>
<td>AC 3</td>
<td>18</td>
<td>14 = (77.7%)</td>
<td>1.9%</td>
</tr>
<tr>
<td>Total</td>
<td>989</td>
<td>721</td>
<td>99.9%</td>
</tr>
</tbody>
</table>

### 4.3 DATA ANALYSIS

As explained in chapter 3, the data was organized and analysed with the assistance of a statistician using Statistica Version 12. Descriptive statistics were used to measure the mean, standard deviation and frequency distribution. The mean, also called the average, is the sum of all the numbers or values divided by the total number of values (Rumsey, 2011:51; Scott & Mazhindu, 2014:233). Standard deviation refers to the average variation (distance) from the mean value of the data (Brink, van der Walt & van Rensburg, 2012:218; Rumsey, 2011:52). Frequency distribution is a graphical representation of numeric values from the lowest to the highest, together with the number of times each value occurs in a sample (Polit & Beck, 2010:729; Scott & Mazhindu, 2014:233). The information obtained in the research study is presented in the form of tables and graphs. Cronbach’s alpha reliability coefficient test (or Cronbach’s alpha) was used to measure the reliability or internal consistency of the items in the questionnaire. The reliability of any given measure refers to the extent to which all items on the questionnaire measure the same variable (Brink et al., 2012:170). The normal range of values is between .00 and +1.00, the higher the reliability coefficient, the more accurate the measure (Scott & Mazhindu, 2014:33). See Table 4.2
Table 4.2 Range of values for Cronbach's alpha

<table>
<thead>
<tr>
<th>Range of values</th>
<th>Reliability / Internal consistency</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00</td>
<td>No internal consistency</td>
</tr>
<tr>
<td>&lt; 0.60</td>
<td>Limited instrument reliability/consistency with high random error</td>
</tr>
<tr>
<td>0.60 – 0.69</td>
<td>Acceptable level of reliability/internal consistency</td>
</tr>
<tr>
<td>0.7 – 0.79</td>
<td>Moderate level of reliability/internal consistency</td>
</tr>
<tr>
<td>0.8</td>
<td>High level of reliability/internal consistency</td>
</tr>
<tr>
<td>1.00</td>
<td>Perfect internal reliability with no measurement errors</td>
</tr>
</tbody>
</table>

(Brink et al., 2012:170; Grove et al., 2013:392; Scott & Mazhindu, 2014:33)

The data analysed from the questionnaire is discussed in this section of the study. Descriptive statistics were used to analyse the data in Sections A, B and C. In addition, Cronbach’s alpha was used to analyse the data in Sections B and C of the questionnaire.

The questionnaire consisted of the following three sections:

- Section A: Biographical data.
- Section B: Activities facilitating active learning.
- Section C: Educational resources and teaching strategies.

4.4 DEMOGRAPHICAL DATA OF THE PARTICIPANTS

This included their age, gender, programme being studied and year of study.

4.4.1 Age profile

The age profile of the participants ranged from 18 to 50+ years. The majority of the participants were between the ages of 30 and 39 years (n= 239; 33.2%) whilst the minority were aged 50+ (n=12; 1.7%). There were 218 (30.2%) participants between the ages of 18 and 25 years compared to those aged between 40 and 49 years (n=96; 13.3%), whilst 156 participants were between the age of 26 and 29 years (n=156; 21.6%). The mean (average) age of the participants was 30.79 and the
standard deviation is 8.21. The results of the age distribution of the participants are illustrated in Table 4.3.

Table 4.3: Age profile of participants

<table>
<thead>
<tr>
<th>Age group</th>
<th>Participants (Frequency)</th>
<th>Percentage of total participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 – 25 years</td>
<td>218</td>
<td>30.2%</td>
</tr>
<tr>
<td>26 – 29 years</td>
<td>156</td>
<td>21.6%</td>
</tr>
<tr>
<td>30 – 39 years</td>
<td>239</td>
<td>33.2%</td>
</tr>
<tr>
<td>40 – 49 years</td>
<td>96</td>
<td>13.3%</td>
</tr>
<tr>
<td>50+ years</td>
<td>12</td>
<td>1.7%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>721</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

4.4.2 Gender

The majority of participants in this research study were female (n=655; 90.8%) while males constituted a much smaller percentage (n= 66; 9.2%) of the research sample. See Table 4.4

Table 4.4: Gender distribution

<table>
<thead>
<tr>
<th>Gender</th>
<th>Participants (Frequency)</th>
<th>Percentage of total participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>66</td>
<td>9.2%</td>
</tr>
<tr>
<td>Female</td>
<td>655</td>
<td>90.8%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>721</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

4.4.3 Programme and year of study

A brief overview of the programmes offered at the private NEI is presented followed by an analysis of the data obtained in section A of the questionnaire. The programmes offered at the private NEI include the Post Basic programme (R212), which leads to the registration of an additional qualification and can only be done by nurses who have successfully completed the course and are registered with the South African Nursing Council (SANC) as a General Nurse.
The Diploma leading to registration as a nurse (R683) also known as the Bridging Programme is a two year nursing programme which can only be done by nurses who are registered with the SANC as an Enrolled Nurse.

The Certificate leading to Enrolment as a Nurse (R2175) is a one or two year programme. The one year programme can only be done by nurses who have successfully completed and are registered with the SANC as an Enrolled Nursing Assistant. The two year programme on the other hand can be done by a neophyte who is entering the nursing profession and has no previous education in nursing.

Those students wanting to qualify as an Operating Theatre Assistant can do so by completing a three year Health Sciences programme and are not required to be registered with SANC.

The results received from the questionnaire section pertaining to the programme and year of study, showed that 35.9% (n=259) of the students at the private NEI were registered for the 2nd year of the diploma leading to registration as a nurse programme as compared to 24% (n=173), who were registered to only complete the 1st year. The smallest number of students were registered to be Operating Theatre Assistants, hence 1st year (n=20; 2.8%), 2nd year (n=12; 1.7%) and 3rd year (n=11; 1.5%). Students registered for the certificate leading to enrolment as a nurse constituted 24.7% (n=178), while the number of post graduate students equates to 9.4% (n=68). See Table 4.4.

### Table 4.5: Programme and year of study

<table>
<thead>
<tr>
<th>Programme</th>
<th>Participants (Frequency)</th>
<th>Percentage of total participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post Basic Course</td>
<td>68</td>
<td>9.4%</td>
</tr>
<tr>
<td>Diploma leading to registration as a nurse 1st Year</td>
<td>173</td>
<td>24.0%</td>
</tr>
<tr>
<td>Diploma leading to registration as a nurse 2nd Year</td>
<td>259</td>
<td>35.9%</td>
</tr>
<tr>
<td>Programme</td>
<td>Participants (Frequency)</td>
<td>Percentage of total participants</td>
</tr>
<tr>
<td>----------------------------------------------------</td>
<td>--------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>Certificate leading to enrolment as a nurse</td>
<td>178</td>
<td>24.7%</td>
</tr>
<tr>
<td>Diploma operating department assistance – 1st year</td>
<td>20</td>
<td>2.8%</td>
</tr>
<tr>
<td>Diploma operating department assistance – 2nd year</td>
<td>12</td>
<td>1.7%</td>
</tr>
<tr>
<td>Diploma operating department assistance – 3rd year</td>
<td>11</td>
<td>1.5%</td>
</tr>
<tr>
<td>Total</td>
<td>721</td>
<td>100%</td>
</tr>
</tbody>
</table>

4.4.4 Discussion on demographic data

From the sample population, the following demographic data was noted:

- 33.2% of the participants were between the ages of 30 and 39.
- 30.2% of the participants were aged between 18 and 25.
- 90.8% of the participants were female.
- 35.9% of the participants were registered for the diploma leading to registration as a registered nurse – 2nd year.

From the demographic data, it was calculated that the mean age of the participants was 30.79. Majority (90.8%) of the participants in this research study were female compared to the 9.2% males.

4.5 ACTIVITIES FACILITATING ACTIVE LEARNING IN THE CLASSROOM

Section B (questions 4-17) of the questionnaire (See Appendix A) consisted of fourteen statements. The questionnaire was designed to determine the participants’ opinions regarding the classroom activities assigned to them by the nurse educator and whether these activities facilitate active learning. A five point Likert scale was used with the options being “strongly disagree”, “disagree”, “neutral”, “agree” and “strongly agree”. The pie graphs 4.5.1 – 4.5.14 illustrate the percentage of each
response obtained from the Likert scale. However, for the sake of data analysis, the researcher combined the percentages obtained for “agree and strongly agree” and “strongly disagree and disagree”.

4.5.1 Statement 1: The activities that the nurse educator assigns in class, helps me to integrate theory with practice.

The majority of the participants, 519 (72%), agreed/strongly agreed that the activities assigned by the nurse educator assisted them in integrating theory with practice. However, only 114 (16%) strongly disagreed/disagreed and 88 (12%) remained neutral. The mean score for this statement was 3.77 and the standard deviation was 1.09. See Figure 4.1.

![Classroom activities support integration of theory and practice](image)

Figure 4.1: Classroom activities support integration of theory and practice

4.5.2 Statement 2: Pre-class reading helps me to gain a deeper understanding of the work covered in class

The response from the participants to the statement above indicated that 612 (85%) of them agreed/strongly agreed that completing these assigned tasks assisted them in gaining a deeper understanding of the work covered in class. Of the remainder of the participants, 70 (10%) disagreed/strongly disagreed with the statement whilst 39 (5%) remained neutral. The mean score for this statement was 4.06 and the standard deviation was 0.98. See Figure 4.2.
Figure 4.2: Pre-class reading aids understanding of content

4.5.3 Statement 3: The nurse educator provides activities that require me to conduct library research and access websites

Majority of the participants, 570 (79%), were in agreement with the above statement while 56 (8%) remained neutral and 95 (13%) disagreed/strongly disagreed with the statement. The mean score for this statement was 3.93 and the standard deviation 1.05. See Figure 4.3.

Figure 4.3: Activities include library searches & web quests
4.5.4 Statement 4: Problem solving exercises help me to think more critically

The participants’ response to the above statement yielded the following results; 607 (84%) of the participants agreed/strongly agreed that problem solving exercises assisted them to think critically. In comparison, 66 (9%) of the participants disagreed/strongly disagreed with the statement and 48 (7%) remained neutral. The mean score for this statement was 4.06 and the standard deviation 0.95. See Figure 4.4.

![Problem solving assists in critical thinking](image)

Figure 4.4: Problem solving assists in critical thinking

4.5.5 Statement 5: The nurse educator encourages me to share my ideas or opinions about what I am learning in class

Of the participants, 572 (80%) agreed/strongly agreed that the nurse educator encouraged them to share their ideas or opinions in class. However, 87 (12%) of the participants disagreed/strongly disagreed with the statement and 62 (8%) of the participants remained neutral. The mean score for this statement was 3.95 and the standard deviation 1.04. See Figure 4.5.
4.5.6 Statement 6: Working in a group improves my communication and interpersonal skills

The participants response to the above statement revealed that 530 (74%) of the participants agreed/strongly agreed that working in a group improves their communication and interpersonal skills, while 121 (16%) disagreed/strongly disagreed and 90 (12%) of the participants remained neutral. The mean score for this statement was 3.88 and the standard deviation 1.15. See Figure 4.6.
4.5.7 Statement 7: The nurse educator encourages active student participation in class

A large portion of the participants, 637 (88%) were in agreement with the above statement whilst a smaller number, 59 (8%) of the participants disagreed/strongly disagreed that active student participation is encouraged in class by the nurse educator. The remaining 25 (4%) participants remained neutral. The mean score for this statement was 4.25 and the standard deviation was 0.97. See Figure 4.7.

![Active participation in class is encouraged](image)

Figure 4.7: Active participation in class is encouraged

4.5.8 Statement 8: Questions posed by the nurse educator helps me to think about the information I am learning (reflect)

The majority of the participants, 613 (85%) agreed/strongly agreed that questions posed by the nurse educator helped them to reflect on the information learnt, while a smaller number, 66 (9%) disagreed/strongly disagreed with the statement and 42 (6%) neither agreed nor disagreed with the statement. The mean score for this statement was 4.06 and the standard deviation 0.94. See Figure 4.8.
4.5.9 Statement 9: Role play equips me with skills that I can use in the clinical situation

The participants’ response to the above statement revealed that 526 (73%) of them agreed/strongly agreed with the statement. In comparison, 120 (17%) participants disagreed/strongly disagreed that role play equips them with skills that they could use in the clinical situation and 75 (10%) of the participants remained neutral. The mean score for this statement was 3.81 and the standard deviation 1.11. See Figure 4.9.
4.5.10 Statement 10: Role play helps me to develop empathy for others and respect for cultural diversity

The response to the above statement showed that 542 (75%) of the participants agreed/strongly agreed that role play assisted them in developing empathy for others as well as helping them to respect cultural diversity. In contrast, 120 (17%) of the participants were not in agreement with the statement and 59 (8%) remained neutral. The mean score for this statement was 3.85 and the standard deviation 1.10. See Figure 4.10.

![Role play benefits empathy and cultural diversity understanding](image)

Figure 4.10: Role play benefits empathy and cultural diversity understanding

4.5.11 Statement 11: The nurse educator gives me examples of clinical problems to solve by myself

The majority of the participants 529 (73%) agreed/strongly agreed that they were given clinical problems by the nurse educator to solve by themselves. A smaller number of the participants, 102 (14%) disagreed/strongly disagreed with the statement whilst 90 (13%) of the participants remained neutral. The mean score for this statement was 3.78 and the standard deviation 1.00. See Figure 4.11.
**Figure 4.11: Activities include independent clinical problem solving**

**4.5.12 Statement 12:** The nurse educator assigns additional topics to read in the class and this enhances my self-directed learning

The results for the above statement showed that 512 (71%) of the participants agreed/strongly agreed with the statement while 118 (16%) of the participants did not agree and the 91 (13%) of the participants remained neutral. The mean score for this statement was 3.73 and the standard deviation 1.04. See Figure 4.12.

**Figure 4.12: In-class reading enhances self-directed learning**
4.5.13 Statement 13: Problem-based learning helps me to connect my prior knowledge with new information learnt

A large number of the participants, 581 (81%) agreed/strongly agreed that problem-based learning assisted them in linking prior knowledge with new information learnt. However, only a small percentage of the participants, 73 (10%) disagreed/strongly disagreed with the statement and 67 (9%) remained neutral. The mean score obtained for this statement was 3.93 and the standard deviation 0.93. See Figure 4.13.

![Problem based learning links prior knowledge with new information](image)

Figure 4.13: Problem-based learning links prior knowledge with new information

4.5.14 Statement 14: The nurse educator encourages me to create my own learning activities and educational materials

The majority of the participants 515 (71%) agreed/strongly agreed that they were encouraged to create their own learning activities and educational materials, 126 (18%) disagreed/strongly disagreed with the statement and 80 (11%) of the participants remained neutral. The mean score obtained for this statement was 3.76 and the standard deviation 1.14. See Figure 4.14.
4.5.15 Cronbach’s alpha reliability coefficient for Section B

The statements (4–17) in Section B of the questionnaire (See Annexure E) were grouped together to determine the item reliability and internal consistency of the factors as measured by Cronbach’s alpha. Statements regarding problem-based learning, pre-class learning and in-class reading yielded a Cronbach’s alpha of 0.60 and 0.67 respectively. This is an acceptable level of reliability/internal consistency (See Table 4.2). However, this could be due to the fact that there were fewer statements grouped together. Theory and practice statements revealed a Cronbach’s alpha of 0.79; role play = 0.74 and group work = 0.73, which indicates a moderate level of reliability/internal consistency. The statistics for the grouped statements indicates that statements 4–17 in Section B were found to be reliable as it yielded an average Cronbach’s alpha of 0.70. See table 4.6 below.

Table 4.6: Cronbach’s alpha reliability coefficient

<table>
<thead>
<tr>
<th>Item</th>
<th>Grouping of Statements</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theory &amp; practice</td>
<td>B4; B6; B11; B14; B17</td>
<td>0.79</td>
</tr>
<tr>
<td>Role play</td>
<td>B12; B13</td>
<td>0.74</td>
</tr>
<tr>
<td>Group work</td>
<td>B8; B9; B10</td>
<td>0.73</td>
</tr>
<tr>
<td>Problem-based learning</td>
<td>B7; B16</td>
<td>0.67</td>
</tr>
<tr>
<td>Pre and in class reading</td>
<td>B5; B15</td>
<td>0.60</td>
</tr>
</tbody>
</table>
4.5.16 Discussion pertaining to activities facilitating active learning

The following statements; B4; B6; B11; B14; B17 were grouped together (See table 4.6) under the heading of ‘theory and practice’ and therefore will be discussed simultaneously.

A qualitative study conducted by Carelse and Dykes (2013:9) among third year social work students showed that activities such as role play, group discussions, case studies and group activities in the classroom enabled the integration of theory and practice. Viewing a video related to the topic presented in class, keeping a reflective journal and sharing personal experiences and anecdotes helps students to integrate theory and practice (Wrenn & Wrenn, 2009:262).

The findings of this study are in agreement with the above-mentioned studies, as 76% (549) of the participants agreed/strongly agreed that activities given in the class assisted them in integrating theory and practice.

The mean score for integrating theory and practice is 3.86. However, what’s concerning, is that the mean score obtained by LC6 (3.56); LC7 (3.61) and AC1 (3.61) is less than 3.86.

The statements B12 and B13 were also grouped together (See Table 4.6) under the heading of ‘role play’. In a study conducted by Vapalahti, Marttunen and Laurinen (2013:28) it was found that role play simulation improved the communication skills and problem solving skills of social work students in preparation for their future careers. Similarly, Subaihi (2015:38) found that role play helps students to cope with their anxiety, fear and emotions, improved their language skills and prepared them for their role in the clinical situation. In a survey by Dawood (2013:46) 70% of the participants reported that role play will help them in their clinical practice, 76.3% agreed that it will improve their communication skills and 71.9% agreed that role play promoted their critical thinking skills.

The finding of this research study is compatible with the above studies as 74% (534) of the participants agreed/strongly agreed that role play equipped them with the skills needed in clinical situations.
The mean score for role play was 3.83. However, it is a concern that the mean score obtained by LC6 (3.32) and AC2 (3.68) were less than 3.83.

The statements B8; B9 and B10 were grouped together under the heading of ‘group work’. Group discussions assist in the development of communication skills and promote active learning (Davies, 2009:567). A pilot study conducted by Kulkarni and Chillarge (2015:113) revealed that group discussions stimulate the active participation of students and improves their retention of knowledge. This was evident in the results where students scored higher in the post test i.e. after being exposed to group discussions. Group discussions afford the students the opportunity to share their viewpoints with their peers whilst also respecting their different values and opinions (Chapman, 2006:298).

The finding of this study is congruent with the above-mentioned studies in that 80% (572) of the participants indicated that they were encouraged to share their ideas, 74% (530) of the participants agree/strongly agreed that group work improves their communication and interpersonal skills and 88% (637) agreed/strongly agreed that they were encouraged to actively participate in class.

The mean score for group work was 4.03. However, of concern is that the mean score obtained by LC6 (3.59); LC 7(3.92) and AC1 (3.90) was less than 4.03.

The statements B7 and B16 were grouped together under the heading of ‘problem-based learning’ (PBL). In a systematic review conducted by Cartwright, Bruce and McInerney (2017:73) it was found that PBL encourages problem-solving and critical thinking skills, motivates teamwork and has a positive effect on the clinical competence of the nurse. It requires the active participation of students in identifying and solving problems and promotes the integration of theory with practice (Pastirik, 2006:274). In a study by Nettath (2013:84) 69.22% of the medical students suggested that PBL is an effective teaching strategy for group learning and 53.8% agreed that the knowledge and skill acquired will assist them in clinical practice.

The finding of this study is in line with the above-mentioned studies as 84% (607) of the participants agreed/strongly agreed that PBL exercises promotes critical thinking
and 81% (581) agreed/strongly agreed that PBL helps with the integration of theory with practice.

The mean score for PBL was 3.99. However, of concern is that the mean score obtained by LC6 (3.80); LC7 (3.92) and AC1 (3.44); AC2 (3.95) was less than 3.99.

The statements B5 and B15 were grouped together under the heading of ‘pre and in-class reading’. Pre-class activities such as assigned reading material, listening to podcasts etc., resulted in increased involvement of students in their own learning and allowed additional time for interactive discussions (Pilato & Ulrich, 2014:544). Poorman and Mastorovich (2016:283) suggested that homework assignments, such as reading selected sections from a textbook, provided the students with the opportunity to reflect on what they have read and increases their metacognitive awareness. Moravec, Williams, Aguilar-Roca and O’Dowd (2010:479) introduced pre-class worksheets, assignments and viewing videos, which students had to complete, 80% of the students indicated that these activities were helpful in learning the course material.

The finding of this study is in line with the above-mentioned studies as 78% (562) of the participants agreed/strongly agreed that pre-class reading assisted them in gaining an understanding of the work covered in class.

The mean score for pre and in-class reading was 3.89. However, of concern is that the mean score obtained by LC6 (3.59) and LC7 (3.73) was less than 3.89.

4.5.17 Classroom activities

Questions 18 to 31 (14 questions) of Section B of the questionnaire (See Annexure E) required the participants to rate the activities listed below, using numbers 1 to 5, where 1 represented the least preferred activity and 5 the most preferred activity. The results were determined by looking at the frequencies of rating scale 5.

The activities in numerical order of preference as rated by the 721 participants are:

1. Share a clinical experience
2. Question and answer sessions
3. Group work  
4. Student led presentations  
5. Working on projects  
6. Participating in brainstorming sessions  
7. Participating in quiz  
8. Participating in debates  
9. Decision making exercises  
10. Keeping a reflective journal  
11. Developing portfolios  
12. Developing concept maps  
13. Completing puzzles  
14. Building models

Sharing a clinical experience was rated as the most preferred activity of all 14 activities with:

Rating 5: (n=343; 47.6%)  
Rating 4: (n=193; 26.0%)  
Rating 3: (n=115; 16.0%)  
Rating 2: (n=48; 6.7%)  
Rating 1: (n=22; 3.1%)

The mean score for this activity (sharing a clinical activity) was 4.09.

Question and answer sessions was rated as the second most preferred activity with:

Rating 5: (n=272; 37.7%)  
Rating 4: (n=229; 31.8%)  
Rating 3: (n=148; 20.5%)  
Rating 2: (n=47; 6.5%)  
Rating 1: (n=25; 3.5%)

The mean score for this activity (question and answer sessions) was 3.94.

The third most preferred activity was group work with:
Rating 5: (n=263; 36.5%)
Rating 4: (n=175; 24.3%)
Rating 3: (n=133; 18.4%)
Rating 2: (n=84; 11.7%)
Rating 1: (n=66; 9.2%)

The mean score for this activity (group work) was 3.67.

Two activities were rated as the fourth most preferred activities, namely student led presentations and working on projects with (n= 230; 31.9%) participants rating 5 for both activities.

Student led presentations.

Rating 5: (n= 230; 31.9%)
Rating 4: (n=201; 27.9%)
Rating 3: (n=160; 22.2%)
Rating 2: (n=73; 10.1%)
Rating 1: (n=57; 7.9%)

The mean score for this activity (student led presentations) was 3.66.

Working on projects:

Rating 5: (n= 230; 31.9%)
Rating 4: (n=186; 25.8%)
Rating 3: (n=157; 21.8%)
Rating 2: (n=89; 12.3%)
Rating 1: (n= 59; 8.2%)

The mean score for this activity (working on projects) was 3.61.

The participants rated participating in brainstorming sessions as the sixth most preferred activity with:

Rating 5: (n=228; 31.6%)
Rating 4: (n=231; 32.0%)
Rating 3: (n=142; 19.7%)
Rating 2: (n=76; 10.5%)
Rating 1: (n=44; 6.1%)

The mean score for this activity (participating in brainstorming sessions) was 3.73.

Participating in quiz was rated as the seventh most preferred activity with:

Rating 5: (n=219; 30.4%)
Rating 4: (n=215; 29.8%)
Rating 3: (n=157; 21.8%)
Rating 2: (n=58; 8.0%)
Rating 1: (n=72; 10.0%)

The mean score for this activity (participating in quiz) was 3.63.

The eighth most preferred activity was participating in debates with:

Rating 5: (n=218; 30.2%)
Rating 4: (n=197; 27.3%)
Rating 3: (n=158; 21.9%)
Rating 2: (n=70; 9.7%)
Rating 1: (n=78; 10.8%)

The mean score for this activity (participating in debates) was 3.56.

Participants rated decision making exercises as the ninth most preferred activity with:

Rating 5: (n=177; 24.5%)
Rating 4: (n=247; 34.3%)
Rating 3: (n=198; 27.5%)
Rating 2: (n=57; 7.9%)
Rating 1: (n=42; 5.8%)

The mean score for this activity (decision making exercises) was 3.64.
The tenth most preferred activity was keeping a reflective journal with:

Rating 5: (n=169; 23.4%)
Rating 4: (n=168; 23.3%)
Rating 3: (n=193; 26.8%)
Rating 2: (n=102; 14.1%)
Rating 1: (n=89; 12.3%)

The mean score for this activity (keeping a reflective journal) was 3.31.

Developing portfolios was rated by the participants as the eleventh most preferred activity with:

Rating 5: (n=163; 22.6%)
Rating 4: (n=188; 26.1%)
Rating 3: (n=169; 23.4%)
Rating 2: (n=111; 15.4%)
Rating 1: (n=90; 12.5%)

The mean score for this activity (developing portfolios) was 3.31.

Participants rated developing concept maps as the twelfth most preferred activity with:

Rating 5: (n=137; 19.0%)
Rating 4: (n=154; 21.4%)
Rating 3: (n=223; 30.9%)
Rating 2: (n=105; 14.6%)
Rating 1: (n=102; 14.1%)

The mean score for this activity (developing concept maps) was 3.17.

Completing puzzles was rated by the respondents as the thirteenth most preferred activity with:

Rating 5: (n=130; 18.0%)
Rating 4: (n=145; 20.1%)
Rating 3: (n=188; 26.1%)
Rating 2: (n=124; 17.2%)
Rating 1: (n=134; 18.6%)

The mean score for this activity (completing puzzles) was 3.02.

Building models was rated by the respondents as the fourteenth most preferred activity with:

Rating 5: (n=96; 13.3%)
Rating 4: (n=101; 14.0%)
Rating 3: (n=199; 27.6%)
Rating 2: (n=137; 19.0%)
Rating 1: (n=188; 26.1%)

The mean score for this activity (building models) was 2.69.

4.5.18 Discussion pertaining to classroom activities

Activities such as sharing clinical experiences, question and answer and brainstorming sessions, group work sessions, student-led presentations, projects, quizzes, debates, decision making exercises, keeping reflective journals, compiling portfolios, concept mapping, completing puzzles and building models are all activities that require the active participation of the students and are strongly supported by numerous researchers (Granero-Molina, Fernández-Sola, Castro-Sánchez, Jiménez-López, Aguilera-Manrique & Márquez-Membrive, 2012:442; Peterson, 2009:84; Youngblood & Beitz, 2001:42; Kulkarni & Chillarge, 2015:113; Di Vito-Thomas, 2005:134; Towle & Breda, 2014:112; Kennedy, 2007:188; Johansen & O’Brien, 2016:46; Wolf, 2011:262; Baitsaad, 2016:417; Chabeli, 2010:2; Gaikwad & Tankhiwale, 2012:244; and Bastable, 2008:488).

The results of this study are in accordance with those of the above researchers.

These are the preferred activities in numerical order: share a clinical experience (47.6%); question and answer sessions (37.7%); group work (36.5%); student led presentations (31.9%); working on projects (31.9%); participating in brainstorming
sessions (31.6%); participating in quiz (30.4%); participating in debates (30.2%); decision making exercises (24.5%); keeping a reflective journal (23.4%); developing portfolios (22.6%); concept maps (19%); completing puzzles (18%); building models (13.3%).

4.6 EDUCATIONAL RESOURCES AND TEACHING STRATEGIES

Section C of the questionnaire consisted of items, which examined the teaching strategies utilized as well as investigating the educational resources available at each of the LCs and ACs. As explained in chapter three, Section C of the questionnaire (See Annexure E) included close-ended questions, response alternatives (yes or no), the five point Likert scale and open-ended questions.

4.6.1 Availability of educational resources at the private NEI

Question 32 on the questionnaire was a close-ended question, which required the respondents to tick (✓) either “yes” or “no” when indicating the availability of the nineteen listed educational resources at the LCs/ACs. Bar graphs were used to illustrate the results obtained per LC and AC. See figures 4.15 to 4.33.

4.6.1.1 Computer laboratory

The availability of a computer laboratory at the different LC and AC is illustrated in Figure 4.15. A large majority of the participants (n=471; 65.3%) affirmed the availability of a computer laboratory within LCs 1, 3, 5, 6 and AC 2 (scoring between 72% and 100%). Quite different to the above, participants from LCs 2, 4, 7 and AC 1 and 3 indicated that their access to computer laboratories is limited i.e. only 7.10% and 31.3% responded yes.
4.6.1.2 Data projector

Figure 4.16 illustrates the response of the participants regarding the availability of data projectors at each LC and AC. As much as 600 participants (83.7%) acknowledged that a data projector was available at the 7 LC and 3 AC, with the scores ranging between 64.3% and 98%.

4.6.1.3 Facilities for videoconferencing

Of the 721 participants, only 407 (56.6%) confirmed the availability of facilities for videoconferencing at LCs 1, 3, 5, 6 and AC 1 and 2, with scores ranging between 59.7% and 87.5%. The remaining 312 participants (43.4%) from LCs 2, 4, 7 and AC 3 negated the availability of videoconferencing facilities, with only 37.7% and 47.5% suggesting availability. See Figure 4.17.
4.6.1.4 Films/Videos

The majority of participants, that is 564 (78.6%), ticked the yes response affirming that films and videos were available at all the LC and AC. Scores range between 65.4% and 93.8%. See Figure 4.18.

4.6.1.5 Interactive whiteboard

The availability of an interactive whiteboard question yielded a positive response with 609 participants (84.5%) responding yes. This is evident with the scores of the LC and AC ranging between 72.7% and 97.2%. See Figure 4.19.
4.6.1.6 Library facilities

574 of the participants (79.8%) affirmed the availability of library facilities at LCs 1, 2, 3, 5, 6, 7 and ACs 1, 2 and 3, with the scores ranging between 56.3% and 100%. However, 24 participants from LC 4 indicated that their access to library facilities is limited and 41.4% suggesting availability. See Figure 4.20.

4.6.1.7 Posters

Figure 4.21 illustrates that 480 participants (67.2%) acknowledged that printed posters are available at all of the LCs and ACs. The affirmative scores range from 50.5% and 90.9%. However the responses from participants in LC 2 (n=63) and 7
(n=53) suggests limited accessibility to printed posters with only 55.8% and 50.5% suggesting availability.

![Availability of posters](image)

**Figure 4.21: Availability of posters**

### 4.6.1.8 Video streaming facilities

Of the 721 participants, 352 (49.2%) affirmed the availability of facilities for video streaming while the results also showed limited availability of video streaming facilities at LCs 2, 4, 7 and ACs 1 and 3. Affirmative scores range from 28.6% to 45.8% See Figure 4.22.

![Availability of video streaming facilities](image)

**Figure 4.22: Availability of video streaming facilities**

### 4.6.1.9 Anatomically correct models

Majority of the 571 participants (79.4%) agreed that anatomically correct models were available at the LCs and ACs, with affirmative scores ranging from 60.2% to 92.5% See Figure 4.23.
4.6.1.10 Simulation laboratory

Figure 4.24 illustrates the response rate (625 participants) regarding the availability of a simulation laboratory at the LCs and ACs. The majority of participants (87%) confirmed the availability of a simulation laboratory at all the LCs and ACs with affirmative scores ranging from 50% to 98.3%. However, only 8 participants (50%) from AC 1 confirmed the availability of a simulation laboratory whilst the rest negated the availability of this educational resource. See Figure 4.24

4.6.1.11 Task trainers

The availability of task trainers at the LCs and ACs is illustrated in Figure 4.25. The majority of the 487 participants (68%) confirmed the availability of task trainers at LCs 1, 3, 4, 5, 6, 7 and AC 1, 2 and 3. Scores are between 50.5% and 86.1%. 55 participants from LC 2 indicated that their access to task trainers is limited and 48.7% suggested availability.
4.6.1.12 3-D human anatomy on computer

A number of participants (n=385; 53.5%) confirmed that ‘3-D human anatomy’ is available on their computers at LCs 1, 3, 5, 6. These scores ranged between 66% and 86%. However, participants from LCs 2, 4, 7 and AC 1, 2 and 3 indicated that their availability to 3-D human anatomy is limited with scores ranging from 18.2% and 28.8%. See Figure 4.26.

Figure 4.26: Availability of 3-D human anatomy on computer

4.6.1.13 E-books

A minority of participants, 250 (34.8%) to be exact, affirmed the availability of E-books within LCs 1, 5 and 6 with scores ranging between 50.8% and 61.1%. On the other hand, participants from LCs 2, 3, 4, 7 and AC 1, 2 and 3 indicated that their access to E-books is limited as evidenced by the affirmative scores that range between 4.4% and 39.6%. See Figure 4.27.
Interactive gaming facilities

A very small percent, 31.7% of (228) participants, confirmed the availability of interactive gaming facilities with only LC 1 scoring 66.7%. However, participants from the remaining LCs and ACs indicated that their accessibility to interactive gaming facilities is very limited therefore scores range between 7.1% and 45.5%. See Figure 4.28.

Internet

Figure 4.29 illustrates the response of 424 participants regarding the availability of internet at the LCs and ACs. These participants (58.9%) affirmed the availability of internet access at LCs 1, 3, 5, 6 and AC 2 with affirmative scores ranging between 72.7% - 94.4%. In comparison, the response of participants from LC 2, 4, 7 and AC 1
and 3 suggests limited availability of internet access with scores ranging from 14.2% to 35.7%.

**Figure 4.29: Availability of Internet**

### 4.6.1.16 On-line journals

The results illustrated in Figure 4.30 reveal that 339 participants (47.2%) agreed that on-line journals were available at LCs 1, 3, 5, 6 and AC 2, with scores ranging from 57.9% to 85.9%. Contrary to the above, the response of participants from LC 2, 4, 7 and AC 1 and 3 suggest that their access to online journals is limited, hence affirmative scores ranging between 10.7% and 17.8%.

**Figure 4.30: Availability of online journals**

### 4.6.1.17 Ovid electronic data base

A minority of 256 participants, (35.7%) affirmed that Ovid which is an online database is available at LCs 1, 3 and 6 with scores ranging between 56.6% and 77.8%. On the other hand, the affirmative responses from LCs 2, 4, 5, 7 and AC 1, 2
and 3 suggest limited availability of Ovid with scores ranging between 0% and 32.8% suggesting availability. See Figure 4.31.

![Availability of Ovid electronic data base](image)

**Figure 4.31: Availability of Ovid electronic data base**

**4.6.1.18 Wi-Fi**

370 participants (51.4%) affirmed the availability of Wi-Fi at LCs 1, 3, 5 and 6 with affirmative scores ranging between 78.8% and 94.2%. However, affirmative scores for LC 2, 4, 7 and AC 1, 2 and 3 only have scores ranging between 0% and 18.8% suggesting limited availability or in the case of AC 3 no availability of Wi-Fi. See Figure 4.32.

![Availability of WiFi](image)

**Figure 4.32: Availability of Wi-Fi**

**4.6.1.19 YouTube**

Figure 4.33 shows that only 256 participants (35.5%) confirmed the availability of YouTube at LCs 3, 5 and 7 with affirmative scores ranging from 58.7% to 72.9%. However, in stark contrast to the above, a concern exist regarding the affirmative
scores for LCs 1, 2, 4, 7 and ACs 1, 2, and 3 ranging from 0% and 29.2%, therefore suggesting a limited availability of YouTube or in the case of AC 3 zero availability.

![Figure 4.33: Availability to utilize YouTube](image)

4.6.1.20 Discussion pertaining to the educational resources at the private NEI

The literature review presented in Chapter 2 indicated that it is important that students have access to educational multimedia, resources and facilities as these enhance the students’ learning experience and allows the student to work either independently or in a group (Meyer & van Niekerk, 2008:142). Visual media such as the interactive whiteboard promotes interaction between the students and nurse educators (Northcote, 2010:495). Educational facilities and resources such as libraries, simulation laboratories, models, task trainers, online journals and films/videos can be utilized to facilitate active, self-directed learning, promote group discussions and integrate theory and practice. The percentages displayed in brackets depict the responses from the participants.

The findings from this study reveals that the majority of the students have access to a computer laboratory (65.4%), data projector (83.7%), facilities for videoconferencing (56.6%), films/videos (78.6%), interactive whiteboards (84.8%), library facilities (79.8%), printed posters (67.2%), anatomically correct models (79.4%), a simulation laboratory (87%), task trainers (68%), primal pictures (53.5%), internet (58.9%) and Wi-Fi (51.4%).
However, the findings also indicate that the following educational resources and facilities are not available at some of the LC’s and AC’s, such as video streaming facilities (50.8%), E-books (65.2%), interactive gaming facilities (68.3%), online journals (52.8%), Ovid (64.3%) and YouTube (64.5%).

4.6.2 Teaching strategies utilized in the classroom

In Section C of the questionnaire, Question 33 was a close-ended question, which required the participants to tick (✓) the response “yes” or “no” when indicating whether or not the nurse educator utilized the twenty listed teaching strategies in the classroom. There was unfortunately a misprint on the questionnaire (See Annexure E), with question number 33.4 being omitted. Therefore only nineteen teaching strategies were analysed and not twenty as indicated on the questionnaire. The researcher believes that the omission did not influence the results in any way. The results, for each LC and AC are illustrated in Table 4.7 in alphabetical order with a legend identifying the abbreviations used for the teaching strategies. The number of participants (n) and the percentages displayed per LC and AC depicts the “yes” responses of the participants.

4.6.2.1 Critical analysis of journal articles (CA)

As many as 483 participants (67.5%) agreed that the critical analysis of journal articles was used in the classroom, with LC 1 scoring 93.1%. LC 5, 7 and AC 3 show moderate use of this teaching strategy with scores ranging from 55% to 58.5%. See Table 4.7.

4.6.2.2 Clinical examples/discussions (CE)

The majority (n=696) of participants (96.5%) agreed that clinical examples/discussions are used in the classrooms at all of the LCs and AC’s with scores ranging between 92.9 and 100%. LC 5 and AC 2 both scored 100%. See Table 4.7.
4.6.2.3 **Case studies (CS)**

675 participants (93.9%) affirmed that nurse educators utilize case studies in the classrooms at all of the LCs and ACs, with scores ranging between 84.1% and 100%. Both LC 3 and AC 1 scored 100%. See Table 4.7.

4.6.2.4 **Debates (DB)**

A total of 486 participants (67.8%) indicated that debates are utilized in the classroom at all of the LCs and ACs, with scores ranging between 48.6% and 83.3%. Only LC 2 appeared to show reduced use (51.4%) of debates as a teaching strategy. See Table 4.7.

4.6.2.5 **Demonstrations (DM)**

The majority (n=658) of the participants (92%) affirmed the utilization of demonstrations as a teaching strategy at all of the LCs and ACs, with scores ranging between 80.4% and 100%. LC 3 and AC 2 and AC 3 scored 100% in comparison to LC 7, which scored 80.4%. See Table 4.7.

4.6.2.6 **Games (GA)**

61.5% of participants (n=440) agreed that the nurse educators utilize games as a teaching strategy, with the highest score (90.9%) recorded at AC 2. Only LC 2 (53.6%) and LC 7 (56.1%) appeared to show limited use of games in the classroom. See Table 4.7.

4.6.2.7 **Group discussion (GD)**

As many as 669 participants (92.8%) confirmed that group discussions are utilized in the classroom throughout all of the LCs and ACs. The highest score recorded, was at LC 1 (100%) and the lowest at AC 1 (81.3%). See Table 4.7.

4.6.2.8 **Lectures (LE)**

A majority response of 93.6% participants (n=673) affirmed that nurse educators utilize lectures as a teaching strategy in the classroom, with LC 4 and AC 1, 2 and 3 scoring 100% in comparison to the 86.9% obtained at LC 7. See Table 4.7.
4.6.2.9  **Literature reviews (LR)**

A number (n=519) of participants (72.2%) agreed that literature reviews were utilized by the nurse educator in the classroom with scores ranging between 43.8% and 84.7%. Only AC 1 appeared to show some concern (56.2%) regarding the non-utilization of this teaching strategy. See Table 4.7.

4.6.2.10  **Logic puzzles (LP)**

Only 51% of the participants (n=366) affirmed the utilization of logic puzzles in the classroom with LCs 1, 3, 5 and 6 scoring between 50.8% and 73.6%. In comparison, LCs 4, 7 and ACs 1, 2 and 3 appeared to show some concern with scores ranging between 61.7% and 81.8% regarding the non-utilization of logic puzzles in the classroom. See Table 4.7.

4.6.2.11  **Mind mapping (MM)**

As many as 556 participants (77.3%) indicated that the nurse educator utilized mind mapping as a teaching strategy in the classroom at all the LCs and ACs with scores ranging between 57% and 94.4%. See Table 4.7.

4.6.2.12  **Narratives/ Story telling (N/ST)**

The response of participants (n=536; 74.7%) revealed that narratives/story telling was utilized in the classroom at all the LCs and ACs with the highest percentage recorded by AC 2 (90.9%) and the lowest percentage recorded by LC 2 (66.4%). See Table 4.7.

4.6.2.13  **Projects (PR)**

The majority (n=632) of the participants (87.9%) affirmed that projects were utilized in the classroom at all the LCs and ACs with scores ranging between 82.2% and 92.9%. The highest score was recorded at AC 2. See Table 4.7.
4.6.2.14  **Problem solving (PS)**

A high percent (84.7%) of participants (n=608) agreed that the nurse educator utilized problem solving as a teaching strategy in the classroom at all the LCs and ACs with scores ranging from 72.9% to 92.5%. See Table 4.7.

4.6.2.15  **Peer teaching (PT)**

As many as 633 participants (87.9%) affirmed that peer teaching was utilized by the nurse educator in the classroom at all the LCs and ACs with scores ranging between 79.6% and 98.6%. See Table 4.7.

4.6.2.16  **Reflection dialogue with peers/nurse educator (RD)**

The participants (n=515; 71.7%) confirmed that reflection dialogue with peers/nurse educator was utilized in the classroom at the LCs and ACs with scores ranging from 43.8% to 91.5%. Only AC 1 appeared to show some concern (56.3%) regarding the non-utilization of this teaching strategy. See Table 4.7.

4.6.2.17  **Reflective journals (RJ)**

A moderate (65.6%) of the participants (n=470) affirmed the utilization of reflective journals at all the LCs and ACs with scores ranging between 37.5% and 88.9%. Only AC 1 appeared to show some concern (62.5%) regarding the non-utilization of reflective journals in the classroom. See Table 4.7.

4.6.2.18  **Role Play (RP)**

As many as 569 participants (79.1%) indicated that the nurse educator utilized role play in the classroom at all the LCs and ACs with scores ranging from 57.1% to 97.2%. See Table 4.7.

4.6.2.19  **Self-assessment (SA)**

A large number (n=571) of participants (79.6%) agreed that self-assessment was utilized in the classroom at all the LCs and ACs with scores ranging between 68.8% and 95.8%. The highest score was recorded at LC 1 and the lowest score at AC 1. See Table 4.7.
The table below, Table 4.7 provides a summary of the responses received from the different learning centres with regard to the teaching strategies that are used in the institution. Please see the legend below the table regarding the abbreviations used for the different teaching strategies

Table 4.7: Utilization of teaching strategies in the classroom

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<td>n=90</td>
<td>79.6%</td>
<td>n=58</td>
<td>88.7%</td>
<td>n=109</td>
<td>90.1%</td>
<td>n=126</td>
<td>87.5%</td>
</tr>
<tr>
<td>RD</td>
<td>n=65</td>
<td>91.5%</td>
<td>n=67</td>
<td>59.3%</td>
<td>n=44</td>
<td>83%</td>
<td>n=39</td>
<td>68.4%</td>
<td>n=83</td>
<td>68.6%</td>
</tr>
<tr>
<td>RJ</td>
<td>n=64</td>
<td>88.9%</td>
<td>n=60</td>
<td>53.1%</td>
<td>n=41</td>
<td>77.4%</td>
<td>n=30</td>
<td>52.6%</td>
<td>n=83</td>
<td>68.6%</td>
</tr>
<tr>
<td>RP</td>
<td>n=69</td>
<td>97.2%</td>
<td>n=83</td>
<td>73.5%</td>
<td>n=48</td>
<td>90.6%</td>
<td>n=44</td>
<td>75.9%</td>
<td>n=96</td>
<td>79.3%</td>
</tr>
<tr>
<td>SA</td>
<td>n=69</td>
<td>95.8%</td>
<td>n=83</td>
<td>73.5%</td>
<td>n=46</td>
<td>86.8%</td>
<td>n=43</td>
<td>75.4%</td>
<td>n=97</td>
<td>80.8%</td>
</tr>
</tbody>
</table>

**Legend: TS - Teaching strategies**

CA: Critical analysis of journal articles  MM: Mind mapping
CE: Clinical examples/discussions  N/ST: Narratives/ Story telling
CS: Case studies  PR: Projects
DB: Debates  PS: Problem solving
DM: Demonstrations  PT: Peer teaching
GA: Games  RD: Reflection dialogue with peers/nurse educator
GD: Group discussion  RJ: Reflective journals
LE: Lectures  RP: Role play
LR: Literature reviews  SA: Self-assessment
LP: Logic puzzles

**4.6.2.20 Discussion pertaining to teaching strategies utilized in the classroom**

The percentages displayed in brackets depict the responses of the participants.

It is important that the practice of critiquing research articles and literature be inculcated in students as it creates a research culture, develops research skills, enhances professional development and improves evidence-based practices (Cangelosi, 2008:126; Vance, Talley, Azuero, Pearce & Christian, 2013:74). The
research findings are congruent with the literature as the participants agreed that they critique journal articles (67.5%) and literature reviews (72.2%).

Different researchers in their studies advocate the use of case studies and clinical examples to promote active student participation, develop critical reasoning and analytical skills, integrate theory with practice and to encourage interaction between the students and nurse educators (Ching, 2014:280; Majeed, 2014:290; Popil, 2011:207; Youngblood & Beitz, 2001:41). The findings of this research study indicate that clinical examples (96.5%) and case studies (93.9%) were utilized in the classroom and are therefore congruent with the above mentioned studies.

Debates can be used as an active teaching strategy to develop critical thinking skills, enhance communication skills and enhance the students’ ability to articulate their own thoughts based on evidence (Hall, 2011:7; Kennedy, 2007:188; Snider, 2011:4). The findings of this research study revealed that debates (67.8%) were used as a teaching strategy in the classroom. The findings are congruent with the above mentioned studies.

The utilization of games such as bingo and quizzes enhance learning by actively involving students in the learning process and simultaneously creating a fun, informative learning experience (Weaver, 2003:181). The findings of this research study indicated that games (61.5%) were used as a teaching strategy in the classroom and are therefore congruent with the above mentioned literature.

Group discussion promotes interaction between students and allows the teacher to clarify points which the students are unsure of (Kulkarni & Chillarge, 2015:113). The findings of this research study revealed that group discussions (92.8%) were utilized by the nurse educator in the classroom. The research findings are congruent with the above literature.

In a survey conducted by Lawler, Chen and Venso (2007:35) it was found that students preferred a structured lecture format with students selecting 90% more lecture and 10% less group work as their ideal ratio of activities in class. The research findings are congruent with the literature as 93.6% of the participants agreed with this.
Phillips (2014:200) used puzzles in an undergraduate nursing research course to communicate and reinforce important terminology. The findings of this research study revealed that puzzles (51%) were utilized by the nurse educator in the classroom. The research findings are congruent with the above literature.

Mind mapping can be utilized by nurse educators to assist students to link prior knowledge with new knowledge, facilitate meaningful learning, and improve the ability to make rational, independent decisions in practice (Chabeli, 2010:2; Daley & Torre, 2010:443; Taie, 2014:11). The findings of this research study revealed that mind mapping (77.3%) was utilized by the nurse educator in the classroom. The research findings are congruent with the above studies.

By analysing student narratives, educators can gain insight and understanding into the challenges faced by students in the clinical situation (Wolf, 2011:264). Educators can encourage students to engage in discussions, debates and respond to the students’ stories and narratives (Billings & Halstead, 2012:232). The findings of this research study revealed that narratives/story telling (74.7%) were utilized by the nurse educator in the classroom. The research findings are congruent with the above literature.

Assigning projects to students is a valuable strategy as students learn to work as a group, it promotes self-assessment and group assessment, and enhances problem solving skills, communication skills and decision making skills, which are important attributes needed by a nurse (Bruce et al., 2011:220; Quinn & Hughes, 2007:250). The findings of this research study revealed that projects (87.9%) were utilized by the nurse educator in the classroom. The research findings are congruent with the above literature.

Hamdan et al. (2014:139) conducted a study to examine the levels of satisfaction of nursing students after exposure to problem-based learning (PBL). The results revealed significant differences with a 7.4 mean score for the pre-test and 10.93 mean score for the post-test after the implementation of PBL. In a study by Nettath (2013:84) medical students’ perceptions towards problem-based learning/problem solving as a teaching/learning method was evaluated. Activities such as brainstorming sessions, group discussions, and internet searches, accessing the
library for information and analyses of problems were implemented. The result of the student perception questionnaire was 69.22%, which suggests that problem-based learning/problem solving is an effective teaching strategy. The findings of this research study revealed that problem solving (84.9%) as a teaching strategy was used in the classroom. The research findings are congruent with the above studies.

Peer teaching/peer assisted learning enhances the active engagement of students, promotes critical thinking, fosters peer interaction and reflection (Stevens & Brenner, 2009:52). It improves retention of knowledge and communication skills (Gupta, Srivastava, Kunwar, Gupta, Gupta & Mahdi, 2016:2994). The findings of this research study revealed that peer teaching/peer assisted learning (87.9%) as a teaching strategy was utilized in the classroom. The research findings are congruent with the above studies.

Reflection and reflective learning is essential to experiential learning and is an important strategy to advance the professional development of nurses (Bruce et al., 2011:198; O'Connor & Hyde, 2007:291). Keeping a reflective diary or journal allows the students to reflect on what they are learning and how they are learning and share their successes, fears, thoughts and reactions to clinical experiences with their peers and nurse educators (Wolf, 2011:262). The findings of this research study revealed that reflection dialogue with peers/nurse educators (71.7%), reflective journals (65.6%) and self-assessment (79%) were used by the nurse educator in the classroom. The research findings are congruent with the above literature.

Role play help students to integrate theory and practice, improve self-confidence and team work and improve communication and problem solving skills (Dawood, 2013:38; Vapalahti, Marttunen & Laurinen, 2013:28). The findings of this research study revealed that role play (79.1%) was used as a teaching strategy in the classroom. The research findings are congruent with the above literature.

4.6.3 Technology-based teaching strategies

Section C (question 34) of the questionnaire (See Annexure E), included 5 technology-based teaching strategies. The questionnaire aimed to determine the participants’ views regarding the technology-based teaching strategies utilized by the
nurse educator to actively engage the participants in their own learning. A five point Likert scale was used and included “strongly disagree”, “disagree”, “neutral”, “agree” and “strongly agree”. The data was analysed using descriptive statistics. For the discussion below, the researcher added the percentages obtained for the items “strongly disagreed and disagreed” and likewise the percentages obtained for the items “strongly agreed and agreed” were added together. Table 4.8 illustrates the percentages obtained for each item on the Likert scale.

The participants’ (n=721) views regarding digital gaming shows that the majority (87%) of the participants (n=627) strongly disagree/disagree that the nurse educator used digital gaming to actively engage them in their own learning. The mean score for this teaching strategy (digital gaming), was 1.79 with a standard deviation of 0.84. See Table 4.8.

Similarly, the majority (82.4%) of the participants (n=594) strongly disagreed/disagreed that digital story telling was used to actively engage them in their own learning. The mean score for this teaching strategy (digital story telling) was 1.91 with a standard deviation of 0.96. See Table 4.8.

As many as (n=563) participants (78.1%) strongly disagreed/disagreed that the nurse educator utilized on line learning as a teaching strategy to enhance active participation of students in their own learning. The mean score for this technology-based teaching strategy (on line learning), was 2.01 with a standard deviation of 1.09. See Table 4.8.

A large number (580) of participants (80.4%) strongly disagreed/disagreed that social media including blogs, Facebook and Twitter was used by the nurse educator to actively involve them in the learning process. The mean score for this teaching strategy (social media), was 1.9 with a standard deviation of 1.07. See Table 4.8.

A large percentage (70.9%) of the participants (n=511) strongly disagreed/disagreed that the nurse educator utilized web-based learning to foster active involvement of the students in their own learning. The mean score for this teaching strategy (web-based learning), was 2.21 with a standard deviation of 1.23. See Table 4.8.
The mean score of 1.97 for question 34 indicates that the participants strongly disagreed/disagreed that technology-based teaching strategies were used to actively engage them in their own learning.

The table below, Table 4.8 provides a summary of the responses received from the participants regarding the nurse educators’ use of technology-based teaching strategies to actively engage students in their own learning.

Table 4.8: Technology-based teaching strategies

<table>
<thead>
<tr>
<th>Teaching strategy</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital gaming</td>
<td>40.4%</td>
<td>46.6%</td>
<td>8.1%</td>
<td>3.5%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Digital story telling</td>
<td>37.7%</td>
<td>44.7%</td>
<td>8.5%</td>
<td>7.2%</td>
<td>1.9%</td>
</tr>
<tr>
<td>On line learning</td>
<td>37.7%</td>
<td>40.4%</td>
<td>8.5%</td>
<td>9.7%</td>
<td>3.7%</td>
</tr>
<tr>
<td>Social media</td>
<td>38.4%</td>
<td>42.0%</td>
<td>8.0%</td>
<td>7.2%</td>
<td>4.4%</td>
</tr>
<tr>
<td>Web-based learning</td>
<td>33.7%</td>
<td>37.2%</td>
<td>10.5%</td>
<td>11.2%</td>
<td>7.4%</td>
</tr>
</tbody>
</table>

4.6.3.1 Discussion pertaining to technology-based teaching strategies

In the ensuing discussion, the researcher has combined the percentages obtained for the items “disagree and strongly disagree” when reporting the findings of the data. The percentages displayed in brackets depict the participants’ response.

Digital gaming, an active learning tool, can be used as additional e-teaching/learning resources which promote student discussions and interactions between students and the educator (Kanthan & Senger, 2011:135). Foss, Mordt, Oftedal and Løkken (2013:592) developed a medication game to teach students the basic skills of medication calculation, which included basic mathematics, conversions, and simple drug calculations with the aim of improving learning, enhancing self-confidence, and promoting active learning. In a study by Chia (2013:22) a virtual game was used to reinforce knowledge of chronic obstructive pulmonary disease (COPD), and the findings revealed that the virtual game and the practical simulated activity enhanced integration of theory and practice and improved cognitive and psychomotor skills. In
this research study the participants (87%) strongly disagreed/disagreed that digital gaming was utilized as a teaching strategy in the classroom. The research finding of this study is not congruent with the above studies.

Digital story telling as a teaching strategy can be used to narrate personal experiences, examine historical events, present information or instructional material pertaining to different subjects such as art, maths, and technology (Robin, 2008:224). In a study by Yang and Wu (2012:340) the findings revealed that digital story telling fosters collaborative learning, improves critical thinking and increases motivation. In this research study the participants (82.4%) strongly disagreed/disagreed that digital story telling was used as a teaching strategy in the classroom. The research finding of this study is not congruent with the above literature.

On-line learning / web-based learning, promotes active participation, allows students to take ownership of their own studies and complete course work at any time of the day (Hathaway, 2014:9). In this research study the participants (78.1%) strongly disagreed/disagreed that on-line learning and web-based learning (70.9%) was used in the classroom. The research finding of this study is not congruent with the above literature.

Social media or networking, using Facebook, Blogs, and Twitter act as a platform for nurses to communicate and share information. They promote interaction between students and educators and allow students to share their experiences and learnings with peers anywhere in the world (Billings & Halstead, 2012:415; Gorea, Gorea & Gorea, 2016:100). Blogs can be used for online debates, discussion forums, to enhance student dialogue and engage students in their own learning (Grassley & Bartoletti, 2009:209). In this research study the participants (80.4%) strongly disagreed/disagreed that social media was used to actively engage them in their own learning. The research finding of this study is not congruent with the above literature.

4.6.4 Interactive lecture

Section C (question 35) of the questionnaire (see appendix A), was aimed at determining the participants’ views regarding the inclusion of 9 different strategies by
the nurse educator to make the lecture interactive. A five point Likert scale was used and included “strongly disagree”, “disagree”, “neutral”, “agree” and “strongly agree”. The data was analysed using descriptive statistics. For the discussion below, the researcher added the percentages obtained for the items “strongly disagreed and disagreed” and similarly the percentages obtained for the items “strongly agreed and agreed” were added together. Table 4.9 illustrates the percentages obtained for each item on the Likert scale.

The majority (78.5%) of the participants (n=566) affirmed that the nurse educator included the application of theory and practice to make the lecture interactive, whilst 98 participants (13.6%) strongly disagreed/disagreed. The mean score for this strategy (application of theory and practice), was 3.97 and the standard deviation1.11. See Table 4.9.

A moderate number (n=346) of the participants (61.9%) strongly agreed/agreed that clarification pauses were included in the lecture to make it more interactive in comparison to the 165 participants (22.8%) who strongly disagreed/disagreed. The mean score for this strategy (clarification pauses), was 3.57 and the standard deviation 1.20. See Table 4.9.

A relatively small number (n=290) of the participants (40.3%) strongly agreed/agreed that the nurse educator included minute papers to make the lecture interactive. However, 307 participants (42.6%) strongly disagreed/disagreed with the above statement. The mean score for this strategy (minute papers), was 3.01 and the standard deviation 1.30. See Table 4.9.

A total of 520 participants (72.1%) strongly agreed/agreed that practice tests were included in the lecture to make it interactive, in comparison to 17.8% of the participants (n=129) who strongly disagreed/disagreed. The mean score for this strategy (practice tests), was 3.83 and the standard deviation 1.19. See Table 4.9.

A large number (n=537) of the participants (74.5%) strongly agreed/agreed that the inclusion of questions and answers made the lecture interactive whilst 113 participants (15.5%) strongly disagreed/disagreed. The mean score for this strategy (questions and answers), was 3.87 and the standard deviation 1.16. See Table 4.9.
Only 314 participants (43.6%) strongly agreed/agreed that think-pair-share was used by the nurse educator to make the lecture interactive. However, 284 participants (39.4%) appeared to show some concern regarding the non-utilization of think-pair-share in the lecture. The mean score for this strategy (think-pair share), was 3.10 with a standard deviation of 1.30. See Table 4.9.

Similarly, only 22.6% of the participants (n=163) strongly agreed/agreed that the nurse educator utilized comic strips/animation to make the lecture interactive. Conversely, 468 of the participants (64.9%) strongly disagreed/disagreed that comic strips/animation was used to make the lecture interactive. The mean score for this strategy (comic strips/animation) was 2.44 with a standard deviation of 1.21. See Table 4.9.

A minority (n=91) of the participants (12.6%) strongly agreed/agreed that poetry was included in the lecture to make it interactive. On the contrary, 77.5% of the participants (n=559) appeared to show some concern regarding the non-utilization of poetry in the lecture. The mean score for this strategy (poetry) was 2.11 with a standard deviation of 1.06. See Table 4.9.

A small number (225) of the participants (31.2%) strongly agreed/agreed that art, such as paintings and drawings were used to make the lecture interactive. However, 60.5% of the participants (n=436) appeared to show some concern regarding the non-utilization of art in the lecture. The mean score for this strategy (art) was 2.61 with a standard deviation of 1.35. See Table 4.9.

<table>
<thead>
<tr>
<th>Table 4.9: Interactive lecture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategy</td>
</tr>
<tr>
<td>Application of theory &amp; practice</td>
</tr>
<tr>
<td>Clarification pauses</td>
</tr>
<tr>
<td>Minute papers</td>
</tr>
<tr>
<td>Practice tests</td>
</tr>
<tr>
<td>Question &amp; answer sessions</td>
</tr>
<tr>
<td>Activity</td>
</tr>
<tr>
<td>-------------------------------</td>
</tr>
<tr>
<td>Think-pair-share</td>
</tr>
<tr>
<td>Comic strips/animation</td>
</tr>
<tr>
<td>Poetry</td>
</tr>
<tr>
<td>Art</td>
</tr>
</tbody>
</table>

### 4.6.4.1 Discussion pertaining to interactive lectures

In the following discussion, the researcher has combined the percentages obtained for the items “agree and strongly agree” when reporting the findings of the data. The percentages displayed in brackets depict the participants’ response.

The literature review presented in chapter 2 indicate that the lecture as a teaching strategy can be made more interactive by integrating active learning practices such as clarification pauses, one minute papers, think-pair-share, question and answer sessions, animation or comic strips, poetry, art, practice tests and application of theory and practice. These activities aid in the development of active listening skills, promote the engagement of students, enhance peer interaction, provide an opportunity to correlate theory with practice and allow them to compare and clarify any misunderstanding of the content (Graffam, 2007:40; Thaman, Dhillon, Saggar, Gupta & Kaur, 2013:27; Winstone & Millward, 2012:35).

In this research study the participants strongly agreed/agreed that application of theory and practice (78.5%), clarification pauses (61.9%), practice tests (72.1%) and question and answer sessions (74.5%), were integrated into the lecture to make it interactive. The research finding of this study is congruent with the above literature.

However, the findings in this study as indicated by the participants also reveal that the following active learning practices were not integrated in the lecture, namely: minute papers (42.6%), think-pair-share (39.4%), comic strips (64.9%), poetry (77.5%) and art (60.5%).

### 4.6.5 Activities preferred by participants

Questions 36 to 44 (9 questions) of section C of the questionnaire (see annexure A), required the participants to rate the activities listed below, using numbers 1 to 5,
where 1 represented the least preferred activity and 5 the most preferred activity. The results were determined by looking only at the frequencies of rating scale 5.

The 9 activities in numerical order of preference as rated by the 721 participants are:

1. Demonstrations
2. Simulation
3. Group discussion
4. Lecture
5. Games
6. Peer teaching
7. Role play
8. Case studies
9. Reflection

Demonstrations were rated as the most preferred activity of all 9 activities with:

Rating 5: (n=354; 49.1%)
Rating 4: (n=200; 27.7%)
Rating 3: (n=109; 15.1%)
Rating 2: (n=30; 4.2%)
Rating 1: (n=28; 3.9%)

The mean score for this activity (demonstrations), was 4.14 and the standard deviation 1.07.

Simulation was rated as the second most preferred activity with:

Rating 5: (n=349; 48.4%)
Rating 4: (n=219; 30.4%)
Rating 3: (n=90; 12.5%)
Rating 2: (n=38; 5.3%)
Rating 1: (n=25; 3.5%)

The mean score for this activity (simulation), was 4.15 and the standard deviation 1.05.
The third most preferred activity was group discussion with:

Rating 5: (n=312; 43.3%)
Rating 4: (n=206; 28.6%)
Rating 3: (n=117; 16.2%)
Rating 2: (n=45; 6.2%)
Rating 1: (n=41; 5.7%)

The mean score for this activity (group discussion), was 3.98 and the standard deviation 1.17.

The participants rated lecture as the fourth most preferred activity with:

Rating 5: (n=311; 43.1%)
Rating 4: (n=214; 29.7%)
Rating 3: (n=133; 18.4%)
Rating 2: (n=40; 5.5%)
Rating 1: (n=23; 3.2%)

The mean score for this activity (lecture), was 4.04 and the standard deviation 1.06.

Games were rated as the fifth most preferred activity with:

Rating 5: (n=224; 31.1%)
Rating 4: (n=158; 21.9%)
Rating 3: (n=143; 19.8%)
Rating 2: (n=90; 12.5%)
Rating 1: (n=106; 14.7%)

The mean score for this activity (games), was 3.42 and the standard deviation 1.41.

The sixth most preferred activity was peer teaching with:

Rating 5: (n=222; 30.8%)
Rating 4: (n=206; 28.6%)
Rating 3: (n=179; 24.8%)
Rating 2: (n=62; 8.6%)
Rating 1: (n=52; 7.2%)

The mean score for this activity (peer teaching), was 3.67 and the standard deviation 1.20.

Participants rated role play as the seventh most preferred activity with:

Rating 5: (n=221; 30.7%)
Rating 4: (n=190; 26.4%)
Rating 3: (n=139; 19.3%)
Rating 2: (n=89; 12.3%)
Rating 1: (n=82; 11.4%)

The mean score for this activity (role play), was 3.53 and the standard deviation 1.34

Case studies were rated by the participants as the eighth most preferred activity with:

Rating 5: (n=216; 30.0%)
Rating 4: (n=187; 25.9%)
Rating 3: (n=158; 21.9%)
Rating 2: (n=73; 10.1%)
Rating 1: (n=87; 12.1%)

The mean score for this activity (case studies), was 3.52 and the standard deviation 1.33

Participants rated reflection as the ninth most preferred activity with:

Rating 5: (n=200; 27.7%)
Rating 4: (n=195; 27.0%)
Rating 3: (n=193; 26.8%)
Rating 2: (n=75; 10.4%)
Rating 1: (n=58; 8.0%)

The mean score for this activity (reflection) was 3.56 and the standard deviation 1.22.
4.6.5.1 Discussion pertaining to activities preferred by participants

Activities such as case studies, demonstrations, games, group discussion, lecture, peer teaching, reflection, role play and simulation that require the active participation of students, have been strongly supported by numerous researchers (Majeed, 2014:290; Popil, 2011:207; Khan, Ali, Vazir, Barolia & Rehan, 2012:85; Gaikwad & Tankhiwale, 2012:238; Rahman, Jaddi, Jumani, Ajmal, Malik, & Sharif, 2011:93; Erasmus, 2013:29; Gupta, Srivastava, Kunwar, Gupta, Gupta & Mahdi, 2016:2994; White, 2015:11; Cant & Cooper, 2010:13; Rutherford-Hemming, 2012:134).

The findings of this study concur with the above researchers as the participants rated the most preferred activities in numerical order: simulation (48.4%); demonstrations (49.1%); group discussion (43.3%); lecture (43.1%); games (31.1%); peer teaching (30.8%); role play (30.7%); case study (30%) and reflection (27.7%).

4.6.6 Analyses of open-ended questions

As explained in chapter three, section C of the questionnaire (See Annexure E) included open-ended questions, which examined the views of the participants regarding individual and group activities which are assigned by the nurse educator to enhance their understanding of the work covered in the classroom. The third open question examined the participants’ suggestions regarding learning activities that would enhance their understanding of the work covered in the classroom. The majority (70%) of the participants did not complete the three open-ended questions hence, a response rate of only 30% was available for analysis. Some participants only answered one question whilst others left the questions blank.

In chapter one, Finks Model of Holistic Active Learning, was discussed. The researcher used the three components of the model namely, acquiring information and ideas; experience and reflective dialogue to categorize the participants’ responses.

The process below was used to calculate the participants’ response rate to the open-ended questions:

- The researcher read through all the responses.
Using an Excel spreadsheet, three columns were made depicting the three components above.

Each participant’s response relating to the individual activity assigned by the nurse educator was placed in the most appropriate column.

For example, homework exercises (individual activity) was placed in the column “acquiring information and ideas”.

The researcher double checked and re-read the responses to ensure that they were assigned to the correct component of Fink’s model.

The frequency was determined by counting the number of responses per activity.

The number of the responses per activity were added together to obtain the total number of responses of the participants.

For example, 62 participants’ responses indicated that homework exercises were assigned by the nurse educator as an individual activity.

The table below, Table 4.10 provides a summary of the responses received from the participants regarding the individual activities assigned by the nurse educator to enhance their understanding of the work covered in class.

### Table 4.10: Individual activities assigned by the nurse educator

<table>
<thead>
<tr>
<th>Acquiring information and ideas</th>
<th>Number of participants responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework exercises</td>
<td>n = 61</td>
</tr>
<tr>
<td>Pre-reading exercises</td>
<td>n = 27</td>
</tr>
<tr>
<td>Access library facility</td>
<td>n = 27</td>
</tr>
<tr>
<td>Worksheets</td>
<td>n = 26</td>
</tr>
<tr>
<td>Access websites</td>
<td>n = 4</td>
</tr>
<tr>
<td>Completing diagrams</td>
<td>n = 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Learning experience / doing / observing</th>
<th>Number of participants responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case study</td>
<td>n = 158</td>
</tr>
<tr>
<td>Assignments</td>
<td>n = 157</td>
</tr>
<tr>
<td>Activity</td>
<td>Number of participants</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>Question and answer sessions</td>
<td>n = 113</td>
</tr>
<tr>
<td>Mind maps</td>
<td>n = 89</td>
</tr>
<tr>
<td>Spot tests / Class tests / Open book tests</td>
<td>n = 77</td>
</tr>
<tr>
<td>Creating/building models</td>
<td>n = 51</td>
</tr>
<tr>
<td>Simulation</td>
<td>n = 34</td>
</tr>
<tr>
<td>Puzzles</td>
<td>n = 24</td>
</tr>
<tr>
<td>Posters</td>
<td>n = 16</td>
</tr>
<tr>
<td>Demonstration</td>
<td>n = 15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reflective dialogue / Thinking about what they are doing</th>
<th>Number of participants responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reflection including self-reflection and reflective journals</td>
<td>n = 58</td>
</tr>
<tr>
<td>Group discussions</td>
<td>n = 46</td>
</tr>
<tr>
<td>Student-led-presentations</td>
<td>n = 33</td>
</tr>
<tr>
<td>Peer teaching</td>
<td>n = 24</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reflective dialogue / Thinking about what they are doing</th>
<th>Number of participants responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical ward rounds</td>
<td>n = 22</td>
</tr>
<tr>
<td>Reflection / Reflection dialogue</td>
<td>n = 17</td>
</tr>
<tr>
<td>Problem solving exercises</td>
<td>n = 10</td>
</tr>
</tbody>
</table>

The table below, Table 4.11, provides a summary of the responses received from the participants regarding the group activities assigned by the nurse educator to enhance their understanding of the work covered in class. The researcher followed the same process as explained above for the calculation of the group activities.

**Table 4.11: Group activities assigned by the nurse educator**

<table>
<thead>
<tr>
<th>Acquiring information and ideas</th>
<th>Number of participants responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worksheets</td>
<td>n = 9</td>
</tr>
<tr>
<td>Access internet and websites</td>
<td>n = 7</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>------</td>
</tr>
<tr>
<td><strong>Learning experience / doing / observing</strong></td>
<td><strong>Number of participants responses</strong></td>
</tr>
<tr>
<td>Assignments</td>
<td>n = 142</td>
</tr>
<tr>
<td>Role play</td>
<td>n = 126</td>
</tr>
<tr>
<td>Posters</td>
<td>n = 82</td>
</tr>
<tr>
<td>Case studies</td>
<td>n = 81</td>
</tr>
<tr>
<td>Questions and answers</td>
<td>n = 80</td>
</tr>
<tr>
<td>Mind maps</td>
<td>n = 79</td>
</tr>
<tr>
<td>Quiz</td>
<td>n = 45</td>
</tr>
<tr>
<td>Games</td>
<td>n = 30</td>
</tr>
<tr>
<td>Simulation</td>
<td>n = 28</td>
</tr>
<tr>
<td>Puzzles</td>
<td>n = 21</td>
</tr>
<tr>
<td>Creating/building models</td>
<td>n = 11</td>
</tr>
<tr>
<td><strong>Learning experience / doing / observing</strong></td>
<td><strong>Number of participants responses</strong></td>
</tr>
<tr>
<td>Demonstrations</td>
<td>n = 8</td>
</tr>
<tr>
<td><strong>Reflective dialogue / Thinking about what they are doing</strong></td>
<td><strong>Number of participants responses</strong></td>
</tr>
<tr>
<td>Group work including discussions</td>
<td>n = 214</td>
</tr>
<tr>
<td>Debates</td>
<td>n = 112</td>
</tr>
<tr>
<td>Peer teaching</td>
<td>n = 83</td>
</tr>
<tr>
<td>Scenarios</td>
<td>n = 54</td>
</tr>
<tr>
<td>Problem solving</td>
<td>n = 48</td>
</tr>
<tr>
<td>Reflection including self-reflection and reflective journals</td>
<td>n = 45</td>
</tr>
<tr>
<td>Brainstorming</td>
<td>n = 13</td>
</tr>
</tbody>
</table>
The table below, Table 4.12 provides a summary of the learning activities suggested by the participants which the nurse educator could utilize to enhance their understanding of the work covered in the classroom. The researcher followed the same process as explained above for the calculation of the proposed learning activities as suggested by the participants.

**Table 4.12: Proposed learning activities that nurse educators could assign**

<table>
<thead>
<tr>
<th>Acquiring information and ideas</th>
<th>Number of participants responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessing library facility</td>
<td>n = 103</td>
</tr>
<tr>
<td>Homework exercises</td>
<td>n = 61</td>
</tr>
<tr>
<td>Worksheets</td>
<td>n = 24</td>
</tr>
<tr>
<td>Pre-reading exercises</td>
<td>n = 18</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Learning experience / doing / observing</th>
<th>Number of participants responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spot tests / Class tests / Open book tests</td>
<td>n = 126</td>
</tr>
<tr>
<td>Mind mapping</td>
<td>n = 108</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Learning experience / doing / observing</th>
<th>Number of participants responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Questions and answers</td>
<td>n = 107</td>
</tr>
<tr>
<td>Demonstrations of skills</td>
<td>n = 106</td>
</tr>
<tr>
<td>Case studies</td>
<td>n = 99</td>
</tr>
<tr>
<td>Games</td>
<td>n = 98</td>
</tr>
<tr>
<td>Integration of theory and practice</td>
<td>n = 93</td>
</tr>
<tr>
<td>Simulation</td>
<td>n = 89</td>
</tr>
<tr>
<td>Role play</td>
<td>n = 85</td>
</tr>
<tr>
<td>Puzzles / Crossword puzzles</td>
<td>n = 70</td>
</tr>
<tr>
<td>Assignments</td>
<td>n = 60</td>
</tr>
<tr>
<td>Projects for the individual (creative, artistic)</td>
<td>n = 55</td>
</tr>
<tr>
<td>Activity</td>
<td>Number of participants responses</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>Quiz</td>
<td>n = 22</td>
</tr>
<tr>
<td>Reflective dialogue / Thinking about what they are doing</td>
<td>Number of participants responses</td>
</tr>
<tr>
<td>Group work including discussions</td>
<td>n = 131</td>
</tr>
<tr>
<td>Reflection including self-reflection and reflective journals</td>
<td>n = 97</td>
</tr>
<tr>
<td>Peer teaching</td>
<td>n = 85</td>
</tr>
<tr>
<td>Scenarios</td>
<td>n = 75</td>
</tr>
<tr>
<td>Debates</td>
<td>n = 60</td>
</tr>
<tr>
<td>Student –led –presentations</td>
<td>n = 34</td>
</tr>
<tr>
<td>Narratives/story telling</td>
<td>n = 23</td>
</tr>
<tr>
<td>Problem solving</td>
<td>n = 17</td>
</tr>
</tbody>
</table>

### 4.6.6.1 Discussion pertaining to open-ended questions

An overall discussion of the analysed data in all three tables will be presented using the elements of Fink’s model.

#### 4.6.6.1.1 Discussion pertaining to acquiring information and ideas

The activities identified in this section include homework exercises, pre-reading exercises, accessing a library facility, worksheets, accessing the internet and websites and completing diagrams. The literature review presented in chapter 2 indicates that the above activities encourage the students to take responsibility for their own learning, promote reflective thinking, improve critical thinking and increase metacognitive awareness (Erasmus, 2013:30; Knight & Wood, 2005:306; Pilato & Ulrich, 2014:544; Poorman & Mastorovich, 2016:284). The research finding of this study is congruent with the above literature.

#### 4.6.6.1.2 Discussion pertaining to learning experience / doing / observing

The activities identified in this section include, assignments, role play, posters, case studies, questions and answers, mind maps, quizzes, games, simulation, puzzles, creating/building models, demonstrations, spot tests / class tests / open book tests,
integration of theory and practice and projects for the individual. The findings of this research study are congruent with the literature as discussed in chapter 2 of this study and also in section 4.6.5.1 of this chapter.

4.6.6.1.3 Discussion pertaining to reflective dialogue / Thinking about what they are doing

The activities identified in this section include reflection, including self-reflection and reflective journals, group discussions, student-led-presentations, peer teaching, clinical ward rounds, problem solving exercises, debates, scenarios, brainstorming, and narratives/storytelling. The findings of this research studies are congruent with the literature as discussed in chapter 2 of this study and also in section 4.6.5.1 of this chapter.

4.6.6.1.4 Activities using technology

The researcher will discuss the learning activities relating to technology as identified by the participants in the open-ended questions. See Table 4.13 for a list of the activities and the response rate of the participants. The results are displayed in numerical order.

Table 4.13: Activities using technology

<table>
<thead>
<tr>
<th>Activities using technology</th>
<th>Number of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>More computer time to be allocated</td>
<td>n = 129</td>
</tr>
<tr>
<td>Access to E-Books</td>
<td>n = 98</td>
</tr>
<tr>
<td>Digital story telling</td>
<td>n = 86</td>
</tr>
<tr>
<td>Access to primal pictures and electronic journals - Ovid</td>
<td>n = 81</td>
</tr>
<tr>
<td>Access to YouTube</td>
<td>n = 75</td>
</tr>
<tr>
<td>Access to internet to be improved</td>
<td>n = 70</td>
</tr>
<tr>
<td>Access to websites</td>
<td>n = 65</td>
</tr>
<tr>
<td>Nurse Educators to use multimedia in the class</td>
<td>n = 64</td>
</tr>
<tr>
<td>Use anatomy and physiology videos</td>
<td>n = 53</td>
</tr>
<tr>
<td>Activity</td>
<td>n</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>----</td>
</tr>
<tr>
<td>Wi-Fi to be available in the classrooms</td>
<td>51</td>
</tr>
<tr>
<td>Create a student portal so students can access information</td>
<td>45</td>
</tr>
<tr>
<td>Use the interactive whiteboard</td>
<td>40</td>
</tr>
<tr>
<td>Use social media to communicate with students</td>
<td>38</td>
</tr>
<tr>
<td>Create online learning courses</td>
<td>24</td>
</tr>
<tr>
<td>Use web-based learning</td>
<td>13</td>
</tr>
<tr>
<td>Digital games</td>
<td>5</td>
</tr>
</tbody>
</table>

4.6.6.1.5 Discussion pertaining to activities using technology

In chapter 2 of this study the impact of technology on students and the learning process was discussed in detail. The utilization of technology and innovative teaching strategies that engage and motivate students were also discussed. In section 4.6.3.1 of this chapter the findings indicated that technology-based teaching strategies are not utilized by the nurse educators. The finding of this research study is therefore not congruent with the literature as discussed in chapter 2.

4.7 CONCLUSION

This chapter gave an analysis of the data collected by means of a questionnaire, which explored the teaching strategies that are used to facilitate active learning in a private nursing education institution. Descriptive statistics were used to describe the common features of the data using the mean, mode and standard deviation. The findings were illustrated using tables and graphs. The following chapter will discuss the conclusion, limitations and recommendations based on the findings of this study.
CHAPTER 5

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter begins with an overview of the private NEI where the study was conducted. Thereafter, the conclusion of the findings that were formulated in chapter four of this research study is discussed. The first objective of this study was to explore and describe what activities, educational resources and teaching strategies were used to enable active learning in a private nursing education institution. The second objective was to make recommendations to facilitate active learning in a private NEI. In this chapter the limitations of the research study as well as the recommendations for nursing practice, research and nursing education will be discussed.

5.2 CONCLUSIONS OF THE RESEARCH STUDY

This study followed a quantitative, descriptive, exploratory and contextual research design in order to determine the activities, educational resources and teaching strategies used to facilitate active learning in a private nursing education institution. A self-administered questionnaire was used to obtain data from the participants in order to meet the above-mentioned objectives. The data was related to the relevant literature and was analysed with the assistance of a statistician. Based on the findings discussed in chapter 4, the following conclusions can be made.

5.2.1 Activities facilitating active learning

The participants (88%) strongly agreed that they were encouraged to actively participate in class. The data established that activities such as role play (73%), group work (74%), pre and in class reading (85%), integration of theory and practice (72%) and problem solving exercises (84%), were utilized to facilitate active learning.

The findings also revealed that the participants preferred activities such as sharing a clinical experience, question and answer sessions, work/group discussions, student-led-presentations, working on projects, demonstrations, simulation, participating in
brainstorming sessions and quizzes. These are student-centred activities which require the active participation of the students.

However, findings in the research study revealed a decrease in participants’ preference to activities such as debates (30.2%), peer teaching (30.8%), decision making exercises (24.5%) and reflection (27.7%), including keeping a reflective journal/diary (23.4%) and developing portfolios (22.6%). In this study the researcher identified the above activities as reflective dialogue learning experiences in terms of Finks Model of Holistic Active Learning. This is a major concern as the literature indicates that activities such as debates promote critical thinking, increase the ability of students to justify their actions, enhance the inductive and deductive reasoning skills that are essential skills required by students when working in clinical practice. Reflection is a student-centred approach which encourages students to integrate their clinical experiences with the theoretical component learnt in the classroom and allows the nurse educator to identify learning gaps (Billings & Halstead, 2012:275). Based on the findings in this research study, the following conclusions could be drawn; firstly that the participants are not exposed to, or have limited exposure, to reflective dialogue experiences and therefore rate these as least preferred activities. Secondly, the nurse educators may not have the skills to facilitate the reflection process or find it time consuming to read or listen to the students experiences. Thirdly, there could be an absence or limited guidelines available to assist the nurse educators with the facilitation of the reflection process.

5.2.2 Educational resources

The use of multimedia by students when given tasks to complete, such as assignments, is valuable as it promotes active student participation, promotes interaction and collaboration between the students and the nurse educators and narrows the gap between theory and practice (Meyer & Van Niekerk, 2008:142). However, a noteworthy finding of this study is that there is disparity and inequality regarding the availability of educational multimedia resources and facilities at a number of the LCs and ACs:

- Three LCs and two ACs do not have a computer laboratory.
- One LC does not have a library facility.
• Three LCs and two ACs do not have video streaming facilities.
• Task trainers, which are interactive models used to teach a skill, are not available at one of the LCs.
• Internet facilities and Wi-Fi is not available at three LCs and two ACs.
• The accessibility of YouTube is not available at four LCs and three ACs.
• Online journals are not available at three LCs and two ACs.
• Primal pictures is not available at three LCs and three ACs.
• Ovid, which is an electronic data base, is not available at four LCs and three ACs.

The above findings are of grave concern as a basic educational resource such as a library facility is not available at every LC and AC. The private NEI has an intranet, which is an internal network system that students can access in the computer laboratory. Ovid and primal pictures are two programmes which students can access via the intranet; however certain LCs and ACs do not have a computer laboratory so how are the students registered at these facilities expected to access these programmes. The unavailability of internet and Wi-Fi facilities again places a restriction on the above-mentioned students as they will encounter difficulty in accessing online journals at these facilities. Nurse educators are faced with many challenges, such as creating an environment that will encourage active engagement of all students in the classrooms while still meeting the demands of a rigorous program. How then are nurse educators expected to fulfil their roles as facilitators of the learning process if they do not have the necessary resources?

5.2.3 Teaching strategies used in the classroom

The study showed that the following teaching strategies were utilized by the nurse educators in certain LCs and ACs to facilitate active learning in the classroom. These teaching strategies included clinical examples/discussions, case studies, demonstrations, narratives/storytelling, debates, group discussions, peer teaching, projects, critical analysis of journal articles, mind mapping/concept mapping, problem solving, role play and self-assessment.

However, the findings in this study revealed that teaching strategies such as games, literature reviews, puzzles, reflective journals and reflective dialogue were not used
by nurse educators at certain LCs and ACs. This is of concern as the literature review states that games and puzzles promote active learning, increase social interaction, influence affective behaviour, improve cognitive functioning and develop critical thinking skills (Bastable, 2008:444; Blakely, Skirton, Cooper, Allum & Nelmes, 2008:259; Gaikwad & Tankhiwale, 2012:244). Reflective journals and reflective dialogue are essential to experiential learning and are an important strategy to advance the professional development of nurses (Bruce, Klopper & Mellish, 2011:198; O'Connor & Hyde, 2007:291). Literature reviews on the other hand, are an important strategy to inculcate a research culture and improve evidence-based practices that are vital to the nursing profession (Vance, Talley, Azuero, Pearce & Christian, 2013:74). Another finding illustrated that the lecture method, which according to the literature is a teacher-centred approach, was used 93.6% in the classroom. The findings of this study also revealed that active learning strategies such as minute papers, think-pair-share, comic strips/animation, poetry and art were not used by the nurse educators to make the lecture interactive. This is a concern as it shows that the nurse educators have not changed their teaching to include innovative strategies that enhance the students’ level of thinking and reflecting practices in the classroom.

5.2.4 Technology-based teaching strategies

Based on the findings of this research study, the conclusion can be drawn that the nurse educators do not use technology-based teaching strategies to actively engage the students in their own learning. This is evident in the results illustrating the percentage of utilization by the nurse educators of these teaching strategies in the classroom: digital storytelling (9.1%); digital gaming (4.9%); online learning (13.4%); social media (11.5%) and web-based learning (18.6%). Furthermore, the findings of the open-ended questions revealed that the participants would prefer the nurse educator to use technology in the classroom, such as digital storytelling, interactive whiteboard, multimedia, anatomy and physiology videos. They also suggested the use of social media to communicate with students, creation of online learning courses, the use of web-based learning and a student portal, which students can use to access pertinent information. Other suggestions included access to E-books, YouTube, additional time allocated to the students to work in the computer laboratory.
and availability of internet and Wi-Fi in all the classrooms. These findings are important as it is expected that nurse educators utilize innovative teaching strategies that meet the needs of the diverse student population, such as the millennials who are technologically savvy and prefer the interactive nature of technology and media. It would be interesting to investigate the age groups of the nurse educators at the different LCs and ACs as it is a known fact that baby boomers regard technology as something that is “nice to have”, but do not deem it as a necessity because they did without it in their past. As an institution of higher education, the private NEI should ensure that all the LCs and ACs have the appropriate educational and information technology resources available; however this is not the case as revealed in the findings of this research study.

The first objective of this study was therefore reached.

5.3 RECOMMENDATIONS RELATED TO NURSING PRACTICE, NURSING RESEARCH AND NURSING EDUCATION

The conclusions derived from the findings of this research study have implications for nursing practice, nursing research and nursing education. The following recommendations are therefore put forward by the researcher in order to satisfy the second objective of the study.

5.3.1 Recommendations related to nursing practice

Teaching strategies such as student-led presentations, concept mapping, clinical ward rounds, case studies and peer teaching can be utilized in clinical practice to enhance active learning. Practice partners can be taught how to utilize concept mapping, which is a valuable strategy to enhance critical thinking and nurses’ clinical reasoning skills. Bridging the theory–practice gap could be a standard item on the agenda of clinical forums or preceptor meetings. Clinical training specialists/preceptors can be allocated to work in the LCs or ACs, for example every three months, so that they can become au fait with the theory component taught in the classroom, be informed about innovative teaching strategies used and simultaneously update their own theoretical knowledge. This practice can help the clinical training specialists/preceptors to reinforce the integration of theory and practice when students are allocated to clinical facilities. A study can be conducted
to ascertain what teaching strategies are utilized in the clinical practice to actively engage students in their own learning. The nurse educators can also update their clinical skills and knowledge by participating in clinical ward rounds, and learn about new practices, medication and technology that are utilized in the wards.

5.3.2 Recommendations related to nursing research

This study was conducted in one private nursing education institution in South Africa. It is recommended that future studies be conducted in both private and public nursing education institutions to compare the findings and to gain a true reflection of the teaching strategies used to facilitate active learning.

Future research can be conducted to:

- Explore the barriers and challenges that nurse educators encounter in implementing technology-based teaching strategies in the classroom.
- Evaluate the retention of students’ knowledge after being exposed to active teaching strategies and actively engaging in their own learning.
- Assess whether the facilitation of active learning is successful in specific subjects, for example pharmacology or ethos and professional nursing.

It is further recommended that research be conducted using:

- One specific teaching strategy, such as web-based learning, and to evaluate its effect on learning outcomes.
- Cross-sectional studies in the 1st and 2nd year cohorts to determine when and where active learning is best utilized.

5.3.3 Recommendations related to nursing education

There must be a paradigm shift from the traditional teacher-centred approach to a student-centred, active learning approach, and this could be achieved by incorporating this approach in the curriculum for new nursing qualifications. Teaching strategies that support student-centred, active learning approaches could also be included in the curriculum.
Nurse educators should take cognisance of the learning needs, learning styles and diversity of the students when implementing teaching strategies. They should be encouraged to utilize innovative teaching strategies and multimedia in the classroom to promote active learning, prevent boredom, provide a variety of activities and foster deeper learning.

In view of the findings, the private NEI should ensure equitable distribution of educational resources, multimedia and facilities amongst the LCs and ACs thus giving all the students equal opportunities to learn and become self-directed, independent practitioners. Facilities such as a simulation laboratory, computer laboratory, internet and Wi-Fi should be available and accessible to both students and nurse educators. Nursing education institutions should invest in on-line learning and web-based learning courses, which allow students to take ownership of their own learning, flexibility to study at their own pace at any time of the day and do not require the physical presence of a nurse educator in the classroom. Social media such as blogs could be used as a medium of communication between nurse educators and students. The fact that some institutions don’t have the facilities brings into question whether the students enrolled at these institutions are as competent when qualifying as their counterparts in centres where more resources are available, which increases the risk of poor patient outcomes.

Opportunities should be made available for nurse educators to attend seminars or workshops on the use of technology-based teaching strategies and undergo training in the utilization of different strategies that can enhance active learning. This could be included as a mandatory module of the nurse educators’ continuous professional development and also form part of the biannual joint performance management process. Nurse educators should be taught how to use reflection as a teaching strategy to promote critical thinking. This includes the development of clear guidelines to facilitate the reflection process. It would be interesting to evaluate the throughput rate and knowledge levels of graduating students, of LCs and ACs who have all the educational resources available in comparison to those who don’t.
5.4 LIMITATIONS OF THIS STUDY

This study was conducted in one private nursing education institution in South Africa and only focused on student nurses regarding the activities, educational resources and teaching strategies used to facilitate active learning. Information obtained from nurse educators could have yielded clarity on their use of teaching strategies to facilitate active learning in the classroom or at least identified gaps in their knowledge that could have helped to facilitate training for nurse educators.

5.5 CONCLUSION

It is evident that nurse educators are assigning activities to the students that facilitate active learning in most of the LCs run by the private NEI. The nurse educators, to a certain extent, utilize teaching strategies that facilitate active learning in the classroom. However, many nurse educators are still using the traditional lecture method and need to incorporate learning activities such as think-pair-share and one minute papers to make the lectures more interactive and therefore stimulate the participation and engagement of the students.

A concern is the lack of educational resources and facilities, such as computer laboratories and internet access in certain Learning Centres (LC) and Associated Classrooms (AC). This problem should be addressed by the private NEI, as the students at these facilities are at a disadvantage by not being exposed to the same learning experiences as their counterparts at the other LCs and ACs. Another concern is the absence or non-utilization of technology-based teaching strategies in all the LCs and ACs. Educators need to be trained in the use of technology-based teaching strategies as this is deemed to be a priority.

The management of the private NEI needs to address the concerns raised and consider the recommendations made in this study, as this will be helpful in attaining a student-centred, active learning environment conducive to learning.
REFERENCES


Clynes, MP. 2009. A novice teacher’s reflections on lecturing as a teaching strategy: Covering the content or uncovering the meaning. *Nurse Education in Practice*, 9, 22-27.


Erasmus, C.J. 2013. Concept mapping as a strategy to enhance learning and engage students in the classroom. [Pdf]. *Journal of Family and Consumer


Annexure A: Ethical approval from FPGSC

Copies to:
Supervisor: Prof D van Rooyen
Co-supervisor: Dr S du Rand

Student number: 213467682
Contact person: Ms M Afrikaner

Re: Outcome of Proposal Submission

Qualification: MCur (Research)

Final Research/Project Proposal:
Teaching Strategies to Facilitate Active Learning in a Private Nursing Education Institution

Please be advised that your final research project was approved by the Faculty Postgraduate Studies Committee (FPGSC) subject to the following amendments/recommendations being made to the satisfaction of your Supervisors:

Comments/Recommendations:

1. The proposal was well prepared.
2. No details were provided about through which steps the guidelines will be developed.
3. The proposal needs to be updated to reflect the sample size mentioned in the REC-H form.

The ethics clearance reference number is H15-HEA-NUR-032 and is valid for three years.

Please be informed that this is a summary of deliberations that you must discuss with your Supervisors.

Please forward a final electronic copy of your appendices, proposal and REC-H form to the FPGSC secretariat.

We wish you well with the project.

Kind regards,

Marilyn Afrikaner
FPGSC Secretariat
Faculty of Health Sciences

18 November 2015
Annexure B: Request for permission to undertake research in NEI

SM Choonara  
114 Haworthia Drive  
Malabar  
Port Elizabeth  
6020  
26 November 2015  

Dr I Lubbe  
College Head  
Life College of Learning  
Illovo  
Johannesburg  

Dear Dr Irene Lubbe

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH IN LIFE COLLEGE OF LEARNING – 7 LEARNING CENTRES AND FOUR CLASSROOMS

My name is Shereen Choonara, and I am a Masters student at the Nelson Mandela Metropolitan University (NMMU) in Port Elizabeth. The research I wish to conduct for my Master’s is entitled: Teaching strategies to facilitate active learning in a private nursing education institution. The project is being conducted under the supervision of Professor RM Van Rooyen and Dr SM du Rand at the Department of Nursing Science at NMMU.

Aim of the study

The aim of the study is to investigate what activities, educational resources and teaching strategies are used to facilitate active learning in a private nursing education institution. The information will be used to develop guidelines to facilitate active learning.

Participants in the research study

I wish to hand out self – administered questionnaires to all the students who are registered at your institution. Please see attached questionnaire for more information. The Learning Centre Manager from each Learning Centre will be required to assist in the research study. Please see the Appendix D which explains the role of the Learning Centre Managers.

Ethical considerations

Participants will not be coerced and they may withdraw from participating in the study at any time. The information gathered will be managed confidentially. The name of your institution will not appear either on the questionnaire or the publication of the research study, thus anonymity and confidentiality will be maintained.
Seeking consent

I am hereby seeking your consent to conduct the research study at your Nursing Education Institution. I have attached a copy of my proposal, a copy of the consent form and questionnaire to be used in the research process, as well as a copy of the approval letter which I received from the NMMU Research Ethics Committee [Human].

Upon completion of the study, I undertake to provide your institution with a bound copy of the full research report. If you require any further information, please do not hesitate to contact me:

Cell: 0824271096  Tel.: 041 5011851
Fax: 041 5011872  Email: shereen.choonara@lifehealthcare.co.za

Thank you for your time, assistance and consideration in this matter.

Yours sincerely,

SM Choonara
Annexure C: Ethical approval from NEI

24 November 2015

ATTENTION: Shereen Choonara

SUBJECT: APPLICATION TO CONDUCT RESEARCH

TITLE: Teaching strategies to facilitate active learning in a private nursing education institution.

This letter serves as authorisation from the Life Healthcare Research and Scientific Committee for the conduct of your research within company facilities.

The approval is conditional to your agreement on the following provisos:

1. Presentation of this letter to the Learning Centre Manager when seeking permission at the specific facility you will be using during your research.
2. An electronic copy of your research report is submitted to the Life Healthcare Research and Scientific Committee prior to publication.
3. No direct reference is made to Life Healthcare or its various facilities in your research report or any publications thereafter.
4. The Company and its facilities are not in any way identifiable in the study.
5. The research is conducted within one year of permission being given by the Company.
6. Placement of the research report on the Company’s research register after approval by the associated Higher Education Institution.

We wish you the best in your studies and look forward to the results.

Yours sincerely

Anne Roodt
on behalf of the Research and Scientific Committee.

Please sign this letter as indicated below and return to the sender within 2 working days:

I, [Signature], hereby agree to the provisos (points 1-6) as listed above.

Signature: [Signature]

Date: 24/11/2015
Annexure D: LCM request for permission to conduct research

Dear Learning Centre Manager,

Learning Centre Manager
Life College of Learning

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH IN LIFE COLLEGE OF LEARNING – 7 LEARNING CENTRES AND FOUR ASSOCIATED CLASSROOMS

My name is Shereen Choonara, and I am a Masters student at the Nelson Mandela Metropolitan University (NMMU) in Port Elizabeth. The research I wish to conduct for my Master’s is entitled: Teaching strategies to facilitate active learning in a private nursing education institution. The project is being conducted under the supervision of Professor RM Van Rooyen and Dr SM du Rand at the Department of Nursing Science at NMMU.

Aim of the study
The aim of the study is to investigate what activities, educational resources and teaching strategies are used to facilitate active learning in a private nursing education institution. The information will be used to develop guidelines to facilitate active learning.

Consent
I have been granted permission by both the Ethical Committee of Life Healthcare as well as the NMMU Research Ethics Committee (Human) to conduct the research study at your Learning Centre and associated classroom (if applicable). Please see the attached approval letters.

Participants in the research study
All the students registered at your Learning Centre and associated classroom (if applicable) will be partaking in the research study which will be conducted during the March - April 2016 block period. Please see attached questionnaire for more information.

Role of the Learning Centre Manager
Your role as the Learning Centre Manager is of vital importance to the success of the research study and I will need you to perform the following functions:
- The participant letter, consent form and questionnaires and two envelopes will be couriered to you
- Explain the aim of the research study
- During the block period, explain to the students that their participation is voluntary and they may withdraw from participating in the study at any time. The information gathered will be managed confidentially. The name of neither the Learning Centre nor the students will appear on the questionnaire or the publication of the research study, thus anonymity and confidentiality will be maintained.
- Hand out the participant letter to the students who have agreed to partake in the study.
- Ask the students to sign page 2 of the participant letter which indicate that they are consenting to participate in the study.
- Instruct the students to place the signed copy of the participant letter in the envelope labelled “Consent forms”.
- Thereafter hand the student the questionnaire.
- The student is required to place the completed questionnaire in the envelope labelled “Completed questionnaires”.
- Courier both the sealed envelopes to the address stated below (I will pay for the cost of the courier services)
- Please sign page 3 of this document and return it to me at the address stated below

SM Choonara  
Life College of Learning – Port Elizabeth  
Ground Floor  
Oasim North Building  
Havelock Street  
Central  
Port Elizabeth  
6000

Upon completion of the study, I undertake to provide your institution with a bound copy of the full research report.

If you require any further information, please do not hesitate to contact me:

Cell: 0824271096  
Tel.: 041 5011851  
Fax: 041 5011872  
Email: shereen.choonara@lifehealthcare.co.za

Thank you for your time, assistance and consideration in this matter.

Yours sincerely

SM Choonara
Annexure E: Questionnaire

**QUESTIONNAIRE**

Please complete all the questions below.

It should not take more than 15 minutes of your time.

You are not required to write your name on the questionnaire.

All information will remain confidential and your responses will be recorded as numbers.

Please tick (✓) the appropriate block

**SECTION A: BIOGRAPHICAL DATA**

1. **Age in years**

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>1.1</td>
<td>18 - 25</td>
</tr>
<tr>
<td>1.2</td>
<td>26 - 29</td>
</tr>
<tr>
<td>1.3</td>
<td>30 - 39</td>
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<tr>
<td>1.4</td>
<td>40 - 49</td>
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<tr>
<td>1.5</td>
<td>≥ 50</td>
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</tbody>
</table>

2. **Gender**

<p>| |</p>
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<tr>
<td>2.1</td>
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<td>2.2</td>
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</tbody>
</table>

3. **Programme and year of study**

<p>| |</p>
<table>
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<tr>
<td>3.1</td>
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<td>3.2</td>
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<td>3.4</td>
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<td>3.5</td>
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<tr>
<td>3.6</td>
</tr>
<tr>
<td>3.7</td>
</tr>
</tbody>
</table>
Read the statements listed below and tick (✓) your level of agreement or disagreement in the appropriate block.

<table>
<thead>
<tr>
<th>Statements</th>
<th>Strongly Agree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The activities that the nurse educator give in the class helps me to integrate theory and practice</td>
<td></td>
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<tr>
<td>Pre-class reading helps me to gain a deeper understanding of the work covered in class</td>
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<tr>
<td>The nurse educator provides activities that require me to conduct library research and access websites</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Problem solving exercises helps me to think critically</td>
<td></td>
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<td></td>
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<tr>
<td>The nurse educator encourages me to share my ideas or opinions about what I am learning in class</td>
<td></td>
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<tr>
<td>Working in a group improves my communication and interpersonal skills</td>
<td></td>
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<tr>
<td>The nurse educator encourages active student participation in class</td>
<td></td>
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<tr>
<td>Questions posed by the nurse educator helps me to think about the information I am learning (reflect)</td>
<td></td>
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<tr>
<td>Role play equips me with skills that I can use in the clinical situation</td>
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<tr>
<td>Role play helps me to develop empathy for others and respect for cultural diversity</td>
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<tr>
<td>The nurse educator gives me examples of clinical problems to solve by myself</td>
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<tr>
<td>The nurse educator assigns additional topics to read in the class and this enhances my self-directed learning</td>
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<tr>
<td>Problem based learning helps me to connect my prior knowledge with new information learnt</td>
<td></td>
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</tr>
<tr>
<td>The nurse educator encourages me to create my own learning activities and educational materials</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Rate each of the activities below in order of your preference, where 1 is the least preferred activity and 5 the most preferred activity.

Please tick (✓) the appropriate block.

<table>
<thead>
<tr>
<th>ACTIVITIES GIVEN BY THE NURSE EDUCATOR IN CLASS</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>18. Building models</td>
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<tr>
<td>19. Completing puzzles</td>
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<td>20. Decision making exercises</td>
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<td>21. Developing concept maps</td>
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<td>22. Developing portfolios</td>
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<tr>
<td>23. Group work</td>
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<td>24. Keeping a reflective journal</td>
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<tr>
<td>25. Participating in brainstorming sessions</td>
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<tr>
<td>26. Participating in debates</td>
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<tr>
<td>27. Participating in quiz</td>
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<tr>
<td>28. Question and answer sessions</td>
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<tr>
<td>29. Share a clinical experience</td>
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<tr>
<td>30. Student led presentations</td>
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<tr>
<td>31. Working on projects</td>
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</tbody>
</table>

SECTION C: EDUCATIONAL RESOURCES AND TEACHING STRATEGIES

32. Are the educational resource(s) listed below available at the Learning Centre/associated classroom where you attend classes? Please tick (✓) the appropriate block for each resource

<table>
<thead>
<tr>
<th>Resource</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>32.1. Computer laboratory</td>
<td></td>
<td></td>
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<tr>
<td>32.2. Data projector</td>
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<td>32.3. Facilities for videoconferencing</td>
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<tr>
<td>32.4. Films / Videos</td>
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<tr>
<td>32.5. Interactive whiteboard</td>
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<td></td>
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<tr>
<td>32.6. Library facilities</td>
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<tr>
<td>32.7. Printed posters</td>
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<tr>
<td>32.8. Video streaming facilities</td>
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<tr>
<td>32.9. Anatomically correct models</td>
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<td></td>
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<tr>
<td>32.10. Simulation laboratory</td>
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<tr>
<td>32.11. Task trainers (interactive models used to teach a skill)</td>
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<tr>
<td>32.12. 3-D human anatomy on computer e.g. primal pictures</td>
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<tr>
<td>32.13. E-books</td>
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<tr>
<td>32.14. Interactive gaming facilities</td>
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<tr>
<td>32.15. Internet</td>
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<tr>
<td>32.16. Online journals</td>
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<td>32.17. Ovid</td>
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<tr>
<td>32.18. WiFi</td>
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<tr>
<td>32.19. YouTube</td>
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<tr>
<td>32.20. Other, specify below</td>
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</tbody>
</table>
33. Does the nurse educator utilize the following teaching strategies in the class? Please tick (✓) the appropriate block for each teaching strategy

<table>
<thead>
<tr>
<th>Teaching strategies</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>33.1 Clinical examples / discussions</td>
<td></td>
<td></td>
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<tr>
<td>33.2 Case studies</td>
<td></td>
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<tr>
<td>33.3 Demonstrations</td>
<td></td>
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<tr>
<td>33.5 Lecture</td>
<td></td>
<td></td>
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<tr>
<td>33.6 Narratives / Story telling</td>
<td></td>
<td></td>
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<tr>
<td>33.7 Debates</td>
<td></td>
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<tr>
<td>33.8 Games</td>
<td></td>
<td></td>
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<tr>
<td>33.9 Group discussion</td>
<td></td>
<td></td>
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<tr>
<td>33.10 Peer teaching</td>
<td></td>
<td></td>
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<tr>
<td>33.11 Projects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33.12 Critical analysis of journal articles</td>
<td></td>
<td></td>
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<tr>
<td>33.13 Literature reviews</td>
<td></td>
<td></td>
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<tr>
<td>33.14 Logic puzzles</td>
<td></td>
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<tr>
<td>33.15 Mind mapping</td>
<td></td>
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<tr>
<td>33.16 Problem solving</td>
<td></td>
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<tr>
<td>33.17 Reflective journals</td>
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<tr>
<td>33.18 Reflection dialogue with peers / nurse educator</td>
<td></td>
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<tr>
<td>33.19 Role play</td>
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<tr>
<td>33.20 Self - assessment</td>
<td></td>
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<tr>
<td>33.21 Other, specify below</td>
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<td></td>
</tr>
</tbody>
</table>

Read the statement below and tick (✓) your level of agreement or disagreement in the appropriate block.

34. The nurse educator utilizes the technology based teaching strategies listed below to actively engage the student in their own learning

<table>
<thead>
<tr>
<th>34.1.</th>
<th>Digital gaming</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>34.2.</th>
<th>Digital story telling</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
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</table>

<table>
<thead>
<tr>
<th>34.3.</th>
<th>On line learning</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>
34.4. Social media (blogs, Facebook, twitter)  
34.5. Web based learning  
34.6. Other, specify below  

Read the statement below and tick (✓) your level of agreement or disagreement in the appropriate block.

35. The nurse educator makes the lecture more interactive by using the strategies listed below

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>35.1</td>
<td>Application of theory and practice</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35.2</td>
<td>Clarification pauses</td>
<td></td>
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</tr>
<tr>
<td>35.3</td>
<td>Minute papers</td>
<td></td>
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<tr>
<td>35.4</td>
<td>Practice tests</td>
<td></td>
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<tr>
<td>35.5</td>
<td>Questions and answer sessions</td>
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<tr>
<td>35.6</td>
<td>Think–pair-share</td>
<td></td>
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<tr>
<td>35.7</td>
<td>Comic strips / animation</td>
<td></td>
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<tr>
<td>35.8</td>
<td>Poetry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35.9</td>
<td>Art e.g. paintings, drawings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35.10</td>
<td>Other, specify below</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Rate each of the activities below in order of your preference, where 1 is the least preferred activity and 5 the most preferred activity.

Please tick (✓) the appropriate block.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>36.</td>
<td>Case studies</td>
<td></td>
<td></td>
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<tr>
<td>37.</td>
<td>Demonstrations</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>38.</td>
<td>Games</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>39.</td>
<td>Group discussion</td>
<td></td>
<td></td>
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<tr>
<td>40.</td>
<td>Lecture</td>
<td></td>
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<tr>
<td>41.</td>
<td>Peer teaching</td>
<td></td>
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<tr>
<td>42.</td>
<td>Reflection</td>
<td></td>
<td></td>
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<tr>
<td>43.</td>
<td>Role play</td>
<td></td>
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<tr>
<td>44.</td>
<td>Simulation</td>
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</tr>
</tbody>
</table>
45. What **individual** activities do the nurse educators give you to enhance your understanding of the work covered in the classroom?


46. What **group** activities do the nurse educators give you to enhance your understanding of the work covered in the classroom?


47. What learning activities do you suggest the nurse educator should give you to enhance your understanding of the work covered in the classroom?


Thank you for taking the time to complete this questionnaire. Your participation is appreciated.
Dear Participant

RE: REQUEST FOR PERMISSION TO COMPLETE QUESTIONNAIRE

My name is Shereen Choonara, and I am a Masters student at the Nelson Mandela Metropolitan University (NMMU) in Port Elizabeth. The research I wish to conduct for my Master’s is entitled: Teaching strategies to facilitate active learning in a private nursing education institution. The project is being conducted under the supervision of Professor RM Van Rooyen and Dr SM du Rand at the Department of Nursing Science at NMMU.

Goal/Aim of the study

The aim of the study is to investigate what activities, educational resources and teaching strategies are used to facilitate active learning in a private nursing education institution.

Seeking consent

I am hereby seeking your consent to complete the questionnaire for the purposes of this study. The questionnaire consists of both open-ended and close-ended questions. The close-ended questions require you to place a tick (‘x’) in the box provided. The open-ended questions require you to give your views/opinions pertaining to the question asked. Each questionnaire has a unique number. You are not required to write your name on the questionnaire. All information obtained will be managed confidentially.

Should you agree to participate in the study, please sign the consent form provided. Place the signed copy of the consent form in the envelope labelled “Consent forms” and the completed questionnaire in the envelope labelled “Completed questionnaires”.

Ethical considerations

Your participation is voluntary and you should not feel coerced and may withdraw from the study at any time. Upon completion of the study, I undertake to provide your nursing education institution with a bound copy of the full research report.

If you require any further information, please do not hesitate to contact me:

Cell: 0824271096
Fax: 041 5011872

Tel.: 041 5011851

Email: shereen choonara@lifehealthcare.co.za
Thank you for your time, assistance and consideration in this matter.

Yours sincerely

[Signature]

SM Choonara
Annexure G: Informed consent letter

CONSENT FORM

I hereby give consent and am willing to participate in the research study

I have read the accompanying letter explaining the purpose of the research study and understand that:

- My participation is voluntary
- I may at any stage withdraw my consent and participation in the study
- All information obtained will be treated in strictest confidence
- My name will not be identifiable and used in any written reports
- A report of the findings will be made available to me via my institution
- I was given the opportunity to ask questions and am willing to participate in the research study

____________________  ____________________
Participant Unique number  Signature

____________________
Date
To whom it may concern,

RE: Assistance with statistical analysis for Shereen Mohammed Choonara (Student no: 213467682)

This letter is to confirm that I assisted the above mentioned student with the statistical analysis of the data in her research study titled “Teaching strategies to facilitate active learning in a private nursing education institution”. The statistical software package “Statistica” (version 12) was used.

Dr J J Pietersen
Statistical consultant
Unit for Statistical Consultation
NMMU
Annexure I: Certificate from Editor

TO WHOM IT MAY CONCERN

I, Michele van Niekerk, declare that I have done the language editing for the thesis of:

Shereen Mohammed Choonara (213487682)

entitled:

Teaching strategies to facilitate active learning in a private nursing education institution

Submitted in partial fulfilment of the requirements for the degree of Master of Nursing (Research) in the Faculty of Health Sciences at the Nelson Mandela Metropolitan University.

I cannot guarantee that the changes that I have suggested have been implemented nor do I take responsibility for any other changes or additions that may have been made subsequently.

Any other queries related to the language and technical editing of this treatise may be directed to me at 076 481 8341.

Signed at Port Elizabeth on 25 January 2017

Mrs M van Niekerk