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EFFECTIVENESS OF REFLECTIVE SESSIONS ON THE ACADEMIC PERFORMANCE OF MIDWIFERY STUDENTS AT A GAUTENG NURSING COLLEGE

By

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This research/study/work is dedicated to my Father and Mother, who taught us integrity, respect, loyalty and perseverance.

Newly qualified registered nurses must commit to personal -, professional development and lifelong learning by making use of reflection and evaluation. - NMC (2010)

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LIST OF ABBREVIATIONS / ACRONYMS

Abbreviation/ acronym	Meaning
Level 2	Student in the second year of study
Level 3	Student in the third year of study
MNS 100	Midwifery Nursing Science 100 (second year)
MNS 200	Midwifery Nursing Science 200 (third year)

DECLARATION

I, Anna Susanna Alkema, Student number: 16279965 declare that:

“Effectiveness of reflective sessions on the academic performance of midwifery students at a Gauteng nursing college”

is my original work and that it has not been submitted before for any degree or examination at any other institutions. All sources that have been used or quoted have been acknowledged by means of complete reference in the text and bibliography.

_____

Ms AS Alkema
November 2018

EXECUTIVE SUMMARY

Midwifery is one of the core subjects in the four-year Diploma in Nursing Science at a Gauteng Nursing College. The high failure rate in midwifery theoretical assessment results has been of great concern. By developing students' reflective skills, students might be able to understand and learn midwifery theoretical knowledge better and the academic performance in midwifery theoretical results might improve.

The purpose of the study is to determine the effectiveness of reflective sessions on the academic performance of midwifery students, enrolled for the four-year Diploma in Nursing Sciences at a Gauteng Nursing College.

A quasi-experimental non-equivalent control group design was used to guide the study.

Students in their second academic year were introduced to and thereafter attended midwifery theoretical classes in two separate groups. The theoretical material was divided into three block weeks, which was spread over a year. During the block weeks, they were exposed to conventional methods of education. In this study, reflective sessions in education were added to the one group (experimental group – 137 students) from the second midwifery block onwards, which was expected to enhance their academic performance. Randomised selection was used; Group 1 (137 students) was selected as the experimental group and Group 2 (141 students) as the control group.

The academic performance of both groups at the end of the first block was used as baseline data for the respective groups. Their academic performance (assessment marks) during the following two blocks was compared to the baseline data by means of statistics. Data analysis was done using multivariate analysis of covariance (MANCOVA) to compare the progress of the midwifery students over time. The results were presented in graphs, tables and charts. Ethics committee approval was obtained from the Faculty of Health Science University of Pretoria Ethics Committee, Gauteng Provincial Department of Health and study site authorities.

In the research study, assessment results of a large group of participants (by estimation 278 students) was used to enhance validity. The purpose and significance of the study was explained to students and the researcher adhered to ethical principles such as respect, beneficence and

justice. Students had the right to withdraw from the study at any time. All data is regarded as confidential and will be kept safe for 15 years by employing computer passwords.

The study findings contributed to the existing body of scientific knowledge regarding the application of reflective sessions in nursing education. Students have realised the benefit and importance of reflective session, which allowed them to understand learning content better. And to academically perform well.

Midwifery students improved their academic performance, which will allow them to complete their studies in the allocated time and be incorporated in the country's workforce. The results will be shared with educators at different nursing colleges.

Key words: Nursing education, reflection, learning strategies, academic performance, Midwifery.

CHAPTER 1
OVERVIEW OF THE STUDY

1.1 INTRODUCTION

Midwives play a crucial role in the care of women during their pregnancies, labour and postnatal period. Midwives are trained as part of the multi-disciplinary team to provide holistic nursing care to women during pregnancy, labour and postnatal period. Midwives need sufficient theoretical and practical knowledge to provide safe and quality nursing care to the woman and her baby.

Midwifery (theory and practical) is one of the core subjects in the four-year Diploma in Nursing Science at Gauteng Nursing Colleges as presented in the second and third academic year. Students need to pass the subject of midwifery to progress to the next level in their training programme in order to complete the Diploma in Nursing Science. The high failure rate of students studying midwifery at a Gauteng Nursing College, has been of great concern to college management, midwifery lecturers and students. College management, lecturers and students (via the Student Representative Council 2016) have voiced their concerns regarding this matter.

Nursing students have to have sufficient midwifery theoretical knowledge and clinical skills to provide safe and quality nursing care to the patients (Erasmus, 2008: 5). It became evident that an intervention needed to be found in order to improve the results of the midwifery theoretical assessments. This study was therefore initiated, based on the assumption that learning can take place through reflective sessions where students reflect on their work, linking a current experience to previous learning. By developing students' reflective skills, students might be able to understand and learn midwifery theoretical knowledge better and the academic performance of midwifery theoretical results might improve.

1.2 BACKGROUND AND CONTEXT OF THE STUDY

Educational institutions aim to produce knowledgeable and committed professional people who will use their knowledge to render a high quality service to people in the community. According to Qureshi, Bhatti, Rasli, Yasir and Zaman (2014: 2703), "Education standards determine the quality of countries workforce" and every country has to meet high education standards to be in line with international standards.

The successful completion of a course is important for the student, the academic facility and the health care system of a country (Owen, 2015: 1). Students who fail a course will have to repeat the course during the next academic year, but if they fail a second time, the student's training will be discontinued (Gauteng Program Regulation, 2016: 9). Failing places a financial burden on the Government of the day, taking away another person's opportunity to be educated. Time and resources are wasted, and workforce demands are not met on time (Hudges, 2013: 42).

At this specific nursing college, students are divided into two groups for all modules due to the large number of students, limited classroom space and clinical placement facilities. The average number of students per academic year is 340. Half of the students are allocated to Group 1 (±170 students) and the other half (±170 students) to Group 2, according to alphabetical order.

Currently, conventional education methods are used during the midwifery theoretical modules presented to second and third year students. Classes are presented in lecture format during block weeks (see Table 1), and formative assessments are done by writing three tests for Level 2 and one summative assessment in the format of a written examination. Level 2 students write their first test (formative assessment) after the first week's block, the second test after the second week's block and the third test after the third week's block.

Table 1: Block weeks of Level 2 (2017) – Low Risk Midwifery

Date	**6 February**	**13 February**			**17 July**		**10 October**
Group 1 Experimental group	MNS Block Week 1	MNS Block Week 2			MNS Block Week 3		Write Examination MNS
	Test 1 10 February	Test 2 17 February			Test 3 21 July		
	No Reflection sessions	Reflection sessions			Refection sessions		
Date			**3 April**	**10 April**		**24 July**	**10 October**
Group 2 Control group			MNS Block Week 1	MNS Block Week 2		MNS Block Week 3	Write Examination MNS
			Test 1 7 April	Test 2 13 April		Test 3 28 July	
			No Reflection	No Reflection		No Reflection	

MNS = Midwifery Nursing Science (2017)

The students write their respective module examinations (summative assessment) during October each year. The students are adult learners, which imply that adult learning principles and self-directed learning should take place. The aim is to promote lifelong learning, which leads to continued professional development (Velo & Smedley, 2014: 130; Qureshi et al., 2014: 2703).

According to Carr, Walker, Carr and Fulwood (2012: 227), a reflective framework can be used in addition to conventional education methods to manage failing students. Reflection focuses on what the student knows and what still needs to be learned. Reflection can be done on an individual or small group basis (Carr et al., 2012: 227). Reflection as an intervention refers to an action that is undertaken by the researcher (lecturer) or any other person to enhance the functioning and wellbeing of people (students) (De Vos et al., 2011: 475). Currently, reflection in education is not used to enhance learning at the nursing institution.

1.3 PROBLEM STATEMENT

When a student does not have the theoretical knowledge and clinical skills in midwifery, poor midwifery care could be provided to a woman and her baby, thus increasing the risk for maternal and neonatal morbidity and/or mortality (Erasmus, 2008: 5). Students must obtain 50 per cent in the midwifery theoretical assessments to pass the module (Gauteng Program Regulations, 2016: 5). The researcher observed that midwifery students, enrolled in a four-year Diploma Program in Nursing Science at a Gauteng Nursing College have a high failure rate in midwifery theoretical assessment, but that most students pass their midwifery clinical (practical) assessment.

In a study by Hughes, it was reported that midwifery students in the United Kingdom failed due to course work being too difficult, too much and the fact that the students were not fully aware of the expectations and standards of the course (Hughes, 2013:43). Students in the United States of America failed due to students' inability to incorporate previous knowledge with the current course, a lack of time management, not seeking help, poor communication, social life, family responsibilities and lack of using resources (Owen, 2015: 1).

A study by Carr et al. (2012: 227) indicated that a reflective framework could be used to support failing students. Reflection focusses on what is known by the student and what still needs to be learned. Reflection is done on an individual or small group basis. Reflection is used to overcome current challenges (high failure rate in theoretical midwifery assessment) in order to promote learning. Reflection is defined as a "process of stepping back from an experience to ponder, carefully and persistently analysing its meaning for oneself" (Seibert, 1999: 55). Reflective

methods/skills, which is used in education, are journaling, role modelling, questions and critical thinking scenarios. All of these methods will help students to develop reflection skills and enhance learning (Rogers, 2001: 38).

The gap that was identified in this proposal, was that at a particular nursing college a high failure rate in midwifery modules was found, but it was not known if reflection might assist to improve the results. Conventional midwifery education was practised, and this does not focus on development of reflective methods/skills. By combining conventional midwifery education with developing reflective methods/skills in education, students might be able to reflect on what they know regarding theoretical midwifery and what knowledge still needs to be acquired and/or reinforced to improve their academic performance during their theoretical midwifery assessment and an improvement in their subsequent results. Adding this to the current practice, reflective sessions might contribute to improved academic performance.

1.4 SIGNIFICANCE OF THE PROPOSED STUDY, RESEARCH QUESTION AND AIM

1.4.1 Significance of the proposed study

Through implementing reflective sessions as an intervention, the researcher hopes to influence (improve) the academic performance of midwifery theoretical assessment results of the students in the second academic year at the Gauteng Nursing College. Applying reflective sessions might support students to improve their academic performance and midwifery theoretical results, assist with completing their studies. Other educational institutions might also benefit from the research study, as the study can serve as a platform for improving an understanding and learning of new knowledge through reflection. It is important for students to pass their theoretical midwifery course, so as to be promoted to the next level of their training and complete the Diploma in Nursing Science. This will allow them to be incorporated into the countries' workforce.

1.4.2 Research question(s)

What is the effectiveness of reflective sessions on the academic performance of Level 2 midwifery students?

1.4.3 Aim

The aim of the study was to determine the effectiveness of reflective sessions on the academic performance of Level 2 midwifery students, enrolled in the four-year Diploma in Nursing Sciences at a Gauteng Nursing College.

1.4.4 Objectives

- To determine the academic performance of the experimental group (Group 1) of Level 2 midwifery students, enrolled in the four-year Diploma in Nursing Sciences at a Gauteng Nursing College.
- To determine the academic performance of the control group (Group 2) of Level 2 midwifery students, enrolled in the four-year Diploma in Nursing Sciences at a Gauteng Nursing College.
- To compare the academic performance of the experimental group (Group 1) and the control group (Group 2) of Level 2 midwifery students, enrolled in the four-year Diploma in Nursing Sciences at a Gauteng Nursing College.

1.5 BENEFITS OF THE PROPOSED STUDY

. Introducing reflective sessions during theoretical midwifery block periods, will allow students to enhance their knowledge of theoretical midwifery, pass their tests and examinations and be able to provide the best nursing care for mother and babies, thus decreasing the mortality and morbidity rate of mothers and babies and promoting life-long learning.

1.6 ASSUMPTIONS

The two groups might not be identical, but it was assumed that they would portray many similar characteristics. The researcher cannot control the following confoundable variables that might influence learning:

- Students have pre-existing differences from other students.
- Some students are more mature than others are and more responsible regarding their studies and progress (Polit & Beck, 2012: 177).
- Older students may struggle to study because they have not recently studied and have more family responsibilities than the younger students.
- Students differ in terms of their study skills and time management.
- Instrumentation (test papers and examination paper) may influence the outcome, because it was compiled by a human (Botma, Greef, Mulaudzi, & Wright, 2015: 116).

The aforementioned aspects cannot be controlled, but the researcher captured demographic data to observe for similarity. The content, conventional lectures and lecturer will be the same for both groups, but one group would have added reflective sessions from the second block onwards. The two groups do not have contact with each other and are therefore expected not to share their

experiences of the reflective sessions. The first block's results of both the two respective groups would serve as a baseline to measure changes in the second and third block and overall changes at the end, after writing the summative assessment.

1.7 DEFINITION OF KEY TERMS

For the purpose of this study, the following concepts are defined:

1.7.1 Nursing college

A nursing college is a post-secondary educational institution which offers professional nursing education at basic and post-basic level as approved in terms of Section 15(2) of the South African Nursing Council (SANC) Regulation 425 (1985: 1).

1.7.2 Four-year diploma in nursing science

The four-year Diploma in Nursing Science is a programme of education and training approved in terms of Section 15(3) of the South African Nursing Council (SANC), Regulation 425 (1985: 1). The programme will result in the obtaining of a qualification, which confers on the holder thereof the right to register as a Nurse (general, psychiatric and community), and a Midwife (South African Nursing Council (SANC), Regulation 425, 1985: 1,Nursing Act no 33, 2005: 27).

1.7.3 Academic performance (assessment, measurement, evaluation)

Academic performance is defined as a process which compares student learning against pre-set criteria, indicating what a student has mastered/understood, if the student is competent and what learning is needed. A numerical value is assigned to the students' performance (Bruce, Klopper, & Mellish, 2011: 303, 304).

Midwifery theoretical results refer to formative- and summative assessment marks obtained by a student during a specific theoretical block period. The average of the formative- and the summative assessment constitute the final mark, where 50 per cent qualifies as a pass mark if at least 40 per cent has been achieved during the summative assessment (Gauteng programme regulations, 2016: 5).

1.7.4 Reflective sessions

Reflection implies a careful re-examination and evaluation of experience, beliefs and knowledge and often involves looking back or reviewing past actions (Hatlevik, 2012 870).

1.7.5 Conventional education

Conventional education is define as a process of receiving or giving systematic instruction by the lecturer. Educational method include storytelling, discussion, teaching, training and directed research (https://www.merriam-webster.com)

1.8 METHODS

1.8.1 Research method

The aim of the study was to determine the effectiveness of reflective sessions on the academic performance of Level 2 midwifery students, enrolled in the four-year Diploma in Nursing Sciences at a Gauteng Nursing College. The methods used to achieve the aim are discussed in the following section.

1.8.1.1 Study design

The research design was a quasi-experimental, non-equivalent control group design. The design was used to determine if the addition of reflective sessions to conventional teaching methods in the one group would have an effect on the students' academic performance in the theoretical midwifery component, in comparison to the second group who would only be exposed to conventional teaching methods.

Quantitative refers to numeric information that is obtained from a formal measurement and is analysed statistically. Evidence for the study was gathered according to an established plan, using structured methods to collect needed information (Polit et al., 2012: 14). The research design was characterised by the collection of data through a semi-structured data collection instrument (refer to Annexure F) for demographic data and data collection mark sheet (refer to Annexure G) for formative assessment marks and summative assessment marks and a guide for reflective sessions answer sheet (refer to Annexure H) to describe students experience of reflective sessions.

1.8.1.2 Research study setting

The research was conducted at a Gauteng Nursing College, where the midwifery students' in their second academic year had a high failure rate in theoretical midwifery assessments. The Gauteng Nursing College is one of four public nursing colleges that presents the four-year Diploma in Nursing Science in Gauteng. At any given time period, about 859 students attend the four-year Diploma in Nursing Science at this public nursing college over a period of four years.

The midwifery component is presented in the second (level 2) and third (level 3) academic year. Approximately 520 students are enrolled for the midwifery component each year. The midwifery module is presented in block weeks, as illustrated in Table 1. The teaching strategies for the theoretical component are conventional methods of education. Assessments are done as illustrated in Table 1. The researcher was a lecturer responsible for theoretical midwifery education at the second academic year at the Gauteng Nursing College.

1.8.2 Unit of analysis and sampling

1.8.2.1 Unit of analysis

The unit of analysis was the academic performance of the Level 2 students studying midwifery theory at a Gauteng Nursing College during the 2018 academic year. Formative and summative assessment results of both participant groups will be used as the unit of analysis. The study was done in a particular Gauteng Nursing College as that is the context where the researcher observed the high failure rate in theoretical midwifery. As the researcher is working in the particular Gauteng Nursing College, the marks were accessible.

1.8.2.2 Sampling method

The estimated number of Level 2 students for 2018 is 278. Half of the students will be allocated to Group 1 (137 students) and the other half (141 students) to Group 2 according to alphabetical order. The two groups are available, but to decide which group would receive the intervention and which one would be the control group, an ''out of hat'' selection was used. Group 1 was the intervention group and Group 2 was the control group. It was estimated that at least 100 students would be recruited.

The researcher invited all the midwifery students of the selected intervention group to participate in the study at the beginning of the first block week. The researcher explained the aim of the study to

the students, and obtained written informed consent from all the students who were willing to participate in the study (see Annexure C information brochure for participants and informed consent form).

1.8.2.3 Inclusion (eligibility) criteria

- All formative– and summative assessment results for the Level 2 theoretical midwifery component were included.

1.8.3 Sample size

The number of Level 2 assessment results (marks) that will be used in the study is 278. Assessment results from Group 1 (who was introduced to reflective sessions) was 137. Assessment results from Group 2 (control group – that was not receiving reflective sessions) was 141.

1.8.4 Data collection

Data gathering took place in a formal manner and numerical data was collected (Botma et al., 2015: 131). The data included the midwifery theoretical assessment results of the formative assessment (3 tests at the end of each block) and the summative examination (1 examination paper). The process of collection and organisation is discussed in more detail in Chapter 3.

1.8.5 Implementation of the reflective sessions

The respondents' classroom at the nursing college was used as the venue for the research study. The contact sessions were scheduled according to normal practise at the nursing college in terms of content, approach and conventional teaching methods.

From the second block week onwards, the selected group was introduced to reflective sessions. Every morning from Monday to Friday between 07h15 to 08h00, during the students theoretical block weeks, the lecturer (researcher) facilitated reflective sessions, which were voluntarily attended by the participants in the study. The lecturer made use of guided reflection as described by Burton (2003: 1009) using questions such as "What"? (facts of what has been learned), "So what?" (what was my positive/negative experience/s, what did I learn, what does it mean for

practise), and “Now what?” (what insight did I gain, what change in myself, how can I use it in the future, how should practise change).

Guided reflection allowed students to reflect on what they have learned the previous day and which midwifery theory needs more clarification and explanation, but also how theory and practice are integrated. The students made their own short summary in the form of a reflective diary to assess their own growth and whether learning took place, but this information is not included for the purpose of this study. The researcher anticipate that making use of reflective sessions, will enhance learning and therefore midwifery theoretical assessment results might improve over time.

1.8.6 Data analysis and interpretation

The data collected was transferred to an Excel spreadsheet and was analysed with the support of a biostatistician.

The assessment results and demographic data were analysed through multivariate analysis of covariance (MANCOVA). MANCOVA refers to an analysing method, which allows analyses of confounding variables (covariates) if there are two or more dependent variables (Polit et al., 2012: 447) so as “to test the difference between the means of two groups for two dependent variables simultaneously, while controlling one covariate (confounding variable)” (Polit et al., 2012, 459). The data gathered was assessment results, in percentage (%). The averages of the respective groups were used. The block one test results (T1) was used as baseline data in both groups, as there was only conventional teaching and no additional intervention offered to either of the groups.

The reflection sessions were introduced in the selected group (Group 1) from block two onwards. There was a test at the end of each block, of which the groups’ average results were compared to the baseline data (T1) of the respective groups. The differences (modus and median) that occurred within the respective groups from their baseline data were compared to determine the effect of the intervention (reflective sessions in addition to conventional teaching) on their academic performance: averages and median in the experimental group will indicate a positive effect.

A statistician was consulted to assist with the statistical technique and interpretation of results as suggested by Botma et al. (2015: 146, 147). Data analysis is discussed in more depth in Chapter 3 and the interpretation thereof is discussed in Chapter 4.

1.8.7 Validity and reliability

“Validity refers to the degree to which a measurement represents a true value” and how the threats to the research study are prevented (Botma et al., 2015: 174).

Reliability refers to whether a measuring instrument, which is used, amongst different groups of participants, under the same circumstances will produce the same results (Botma et al., 2015: 174).

The strategies to enhance validity and reliability will be discussed in Chapter 3.

1.8.8 Ethical considerations

Considering the relevant ethical considerations, participants were respected and treated fairly, and privacy and confidentiality were maintained throughout (Botma et al., 2015: 277).

The principles that were adhered to during the research study included:

- Permission from institution to conduct the research study
- Respect, beneficence, justice for the participants
- Maintaining confidentiality regarding data.

1.8.8.1 Permission from the institution to conduct the research study

The researcher conducted the study after obtaining approval by the Research Ethical Committee of the Faculty of Health Sciences of the University of Pretoria. Permission to conduct the study was obtained in writing from the Gauteng Provincial Department of Health and the Gauteng Nursing College (see Annexure D and Annexure E).

The researcher started her studies in 2016 and therefore permission was obtained to use theoretical midwifery assessment results.

1.8.8.2 Respect, beneficence, justice for the participants

Respect for participants was also shown by the researcher (Botma et al., 2015: 17, 277), by protecting the rights of the students and by explaining the purpose and significance of the study (see Annexure B) before obtaining written voluntary informed consent (see Annexure C) from

students. Respect was also shown to the research process by not committing plagiarism (see Annexure A) (Botma et al., 2015: 4, 277).

Beneficence, meaning to do well and minimise harm (Botma et al., 2015: 3; Polit & Beck 2012: 152) was assured by the researcher by explaining to the students what would be expected of them. The students were assured of privacy and confidentiality by not linking any results to individual names (protect from harm). The students benefitted by attending the reflective sessions.

Justice, referring to being treated fairly (Botma et al., 2015: 3, 17), was applied when respondents asked questions, refused to provide information and withdrew from the research study at any time (Nuremberg Code; Declaration of Helsinki; Belmont Report; Polit & Beck, 2012:154). No exploitation took place regarding race, religion, gender, age, class or sexuality. To protect participants, the Ethics Committee (Botma et al., 2015: 2, 7, 11 & 13; Polit & Beck 2012: 152) reviewed the research study.

1.8.8.3 Maintaining confidentiality regarding data

The safekeeping of data-collection forms was ensured. Student numbers were used to ensure respondents' confidentiality. Names and codes were kept in a master file, which was kept locked in a safe place. Only the researcher and people directly involved in research had access to information. All data will be kept safe, by using a safe storage facility and employing passwords to protect computer information. When the research study is completed, all data will be kept for 15 years (Botma et al., 2015:19).

1.9 CONCLUSION

Chapter 1 provided an overview of the study, including the background, problem statement, significance of the proposed study, research question and aim and research method.

In Chapter 2, the literature related to the study will be discussed, namely nursing education, midwifery education, academic performance, teaching and learning strategies, learning theories and reflection.

CHAPTER 2
LITERATURE REVIEW

2.1 INTRODUCTION

In the previous chapter, an overview was provided of the research problem, methodology, validity and reliability, and ethical considerations. In this chapter, the following topics will be addressed; nursing education, teaching and learning strategies and reflection as a method of intervention to enhance academic performance.

A literature review was done by making use of search engines, Ebscohost, Cinahl, Google Scholar and the library. Only studies and papers published in English were selected. In the literature review, the following keywords were used for searching: nursing education, academic performance, teaching and learning strategies, reflection, midwifery theoretical teaching/education, midwifery theoretical assessment results, learning theories and adult learning.

2.2 STATUS OF MATERNAL AND NEONATAL HEALTH IN SOUTH AFRICA

The maternal and child mortality and morbidity rate in South Africa is unacceptably high. Since 2008, the maternal death rate have declined with 24 per cent, but this is not sufficiently enough to meet the Millennium Development Goals 4 and 5 by 2015, which were to reduce child mortality and to improve maternal health (Moodley, 2018).

The main cause of maternal deaths were non-pregnant related infection (AIDS), haemorrhage, hypertension, cardiac conditions and diabetes (Bamford, 2012/2013: 49-51). Statistics from 2011-2016 showed a reduction in maternal deaths due to HIV infections and obstetric haemorrhage (30%). Caesarean sections are still a main cause of maternal deaths. Maternal deaths due to hypertension diseases have increased (14%). Referral, inter-facility transport and post-natal care (early discharge and poor follow-up) of patients have also contributed to the high mortality rate (Moodley, 2018: 6).

The main cause of death in neonates were; pneumonia, preterm birth complications (45%), intrapartum-related complications (hypoxia, 30%) and complications during birth (Bamford, 2012/2013: 49-51).

Both maternal and neonatal deaths are avoidable by providing better monitoring and quality of care during antenatal-, intrapartum- and postnatal care. Therefore, it is of utmost importance that students have the necessary theoretical midwifery knowledge and clinical skills to provide the best midwifery care in the antenatal-, intrapartum-, labour and postnatal period to prevent maternal and neonatal deaths (Bamford, 2012/2013: 49-51).

Midwives play a vital role in reducing maternal and neonatal deaths. The aim is to end all preventable maternal and neonatal mortality by 2030, as stated in Sustainable Development Goal 3 (Good Health and Wellbeing). The Sustainable Development Goal 3 aims to reduce the maternal mortality rate globally to be less than 70 maternal deaths by 2030 and less than 19 per 1000 neonatal deaths. Therefore, midwives should be educated and trained in essential competencies and regulated to international standards (Moodley, 2018: 53).

2.3 NURSING EDUCATION

In nursing education, the art and science of nursing is taught to students to ensure that by completing the programme, competent and qualified professional nurses will be enabled to provide holistic nursing care to patients (Bruce, 2011: 10, 14). If students have been successful in the relevant programme, they are registered with the SANC as professional nurses under the Nursing Act № 33, 2005: 27.

Nursing education is more than just transmitting knowledge to another person, it implies assessing prior knowledge, considering students' characteristics, managing class situation/s, motivating students, reviewing content and communicating effectively. Nursing education focuses on guiding students to independence, mastering critical and creative thinking, to be accountable and to cope with change. In the process of nursing education, students should be prepared for lifelong learning as part of being a professional (Bruce, 2011: 10, 11, 14 & 15).

Nursing education takes place at different levels and in different settings, namely:

- University setting at a degree level (Regulation 425, 1985: 2) (Gauteng Curriculum for the Degree in Nursing)
- Nursing college setting at a diploma level (Regulation 425, 1985: 2) (Gauteng Curriculum for the Diploma in Nursing: 2007)
- Private education (e.g. Netcare Nursing Education Institution) setting at a diploma level.

The four-year Diploma in Nursing Science (Regulation 425 of 1985) is presented at Nursing Colleges in South Africa. The program is presented at college level within the legal agreement between a university and the provincial health department (Bruce, 2011: 68; Regulation 425, 1985: 2). The purpose of the qualification is to ensure that students will have the capabilities to provide and manage a scientific-based service in general-, psychiatric- and community nursing and midwifery (Gauteng Provincial Government Curriculum, 2007: 8).

In this study, the setting will be a nursing college. The purpose of nursing colleges is to educate nurses in the theory and practice of nursing science. Students need to meet specific admission requirements, before being allowed to commence their studies at a nursing college (College Regulation, 2017: 13). The Nursing Act (Act no 33 of 2005) requires of nursing colleges to be accredited by the SANC (South African Nursing Council) before nursing education can take place (Bruce, 2011: 70). The SANC stipulates the learning outcomes and clinical hours that a student nurse must comply with, before they can complete their course and be registered as professional nurses. Student nurses are also registered at the SANC after commencement of their training (College Regulation, 2017: 6). Nursing colleges have to be affiliated with a university as a higher education institution. The affiliation with a university is a condition for approval of a nursing college to be able to present and award the Diploma in Nursing Science (Regulation 425, 1985: 2).

The university moderates the standard and quality of education given at nursing colleges. In this study the affiliated university (University of Pretoria. Department of Nursing Science) will moderate the quality of nursing education given at the college. Theoretical and clinical summative assessment papers are moderated by the affiliated university, to ensure all standards are met (Gauteng Provincial Government Curriculum, 2007: 11; Regulation 425, 1985: 2) The affiliated university and the South African Nursing Council are both regulating bodies of the nursing colleges (Gauteng Provincial Government Curriculum, 2007:11).

In the curriculum for the four-year Diploma in Nursing Science, the whole course is presented over four years as follows:

- During Level 1, the following theoretical subjects are presented: General Nursing Science (GNS), Biological and Natural Sciences (BNS), Fundamental Nursing Science (FNS), Social Sciences (SS) and General Nursing Science (GNS). Additionally General Nursing Science (GNS) has a clinical component (Gauteng Provincial Government Curriculum, 2007:16).
- During Level 2, the following theoretical subjects are presented: General Nursing Science (GNS), Biological and Natural Science (BNS), Midwifery Nursing Science (MNS), Social

Science (SS) and General Nursing Science (GNS). Midwifery Nursing Science (MNS) has an added clinical component (Gauteng Provincial Government Curriculum, 2007:17).

- During Level 3, the following theoretical subjects are presented: General Nursing Science (GNS), Midwifery Nursing Science (MNS), Community Nursing Science (CNS), Psychiatric Nursing Science (PNS) and General Nursing Science (GNS), Midwifery Nursing Science (MNS), Community Nursing Science (CNS). Psychiatric Nursing Science (PNS) has an added clinical component (Gauteng Provincial Government Curriculum, 2007:18).
- During Level 4, the following theoretical subjects are presented: Community Nursing Science (CNS), Psychiatric Nursing Science (PNS), and Community Nursing Science (CNS). Psychiatric Nursing Science (PNS), has an added clinical component (Gauteng Provincial Government Curriculum, 2007: 19).

Midwifery is one of the core courses in the curriculum for the four-year Diploma in Nursing Science. From the analysis of the health needs of the Gauteng Province, reproductive health, women and childcare (Midwifery) are two of the main challenges in health care (Gauteng Provincial Government Curriculum, 2007: 2). Therefore, it is of utmost importance that students have acquired quality theoretical and clinical midwifery knowledge and skills to provide the best midwifery care to mothers and babies.

2.4 MIDWIFERY EDUCATION

In the United Kingdom (UK), midwifery education is presented over a three-year period. During the first year, the midwifery education focuses on low-risk antenatal, intrapartum and postnatal care. During the second year, the focus is on high-risk midwifery and during the third year the focus is on normalisation of birth and improving birth outcomes (Kitson-Reynolds et al., 2015: 511). In South Africa, midwifery is presented over two years as a core subject in the four-year Diploma in Nursing Science (South African Nursing Council, Regulation 425, 1985: 1). Midwifery is also presented as a one-year Diploma in Midwifery for students that did not study the integrated four-year Diploma in Nursing Science (South African Nursing Council, Regulation 254, 1975: 1).

During the four-year Diploma in Nursing Science, midwifery is presented in Level 2 (Low risk midwifery) and in Level 3 (High-risk midwifery). Students first have to master normal midwifery (low risk midwifery), which is easier and consists of basic knowledge regarding midwifery. During Level 3, they are taught about abnormal midwifery (high-risk midwifery). Students then build on existing knowledge by learning/studying material that is more advanced. During Level 2, the midwifery theory component consists of 22 credits and 400 practical hours (34 credits). The students will be

taught how to provide holistic basic maternal and neonatal care in the first year, with the emphasis on normal midwifery (Gauteng Provincial Government Curriculum, 2007: 33).

A credit refers to a unit that equals ten hours of learning. It is the learning time that it would take an average learner to meet the learning outcomes. The time is divided as follows: contact time, time spent in structured learning in the practical setting (4 hours), student preparation/individual learning time (5.5 hours) and assessment time (0.5 hours) (Gauteng Provincial Government Curriculum, 2007: 72).

Table 1: Block weeks of Level 2 – Low Risk Midwifery

Group 1	MNS 2 weeks block	MNS 4 weeks clinical placement	GNS Block	GNS clinical placement	MNS 2 weeks clinical placement	GNS clinical placement	MNS 1 Week block	GNS clinical placement	MNS 2 weeks clinical placement	
Group 2	GNS Block	GNS clinical placement	MNS 2 weeks block	MNS 4 weeks clinical placement	GNS clinical placement	MNS 2 weeks clinical placement	GNS clinical placement	MNS 1 Week block	GNS clinical placement	**MNS 2** weeks clinical placement

GNS = General Nursing Science

MNS = Midwifery Nursing Science

During Level 3, the midwifery theory component consists of 22 credits and 600 practical hours (42 credits). Students will be taught how to provide holistic basic maternal and neonatal care in the second year of their midwifery training, with the emphasis on abnormal midwifery (Gauteng Provincial Government Curriculum, 2007: 33).

Table 2: Block weeks of Level 3 – High Risk Midwifery

Group 1	MNS 3 weeks block	MNS 5 weeks clinical placement	GNS Block	GNS clinical placement	MNS 2 weeks clinical placement	GNS clinical placement	MNS 1 weeks block	MNS 1 weeks block	GNS clinical placement	MNS 4 weeks clinical placement	MNS 2 weeks clinical placement	MNS4 weeks clinical placement	GNS clinical placement
Group 2 ++++	GNS Block	GNS clinical placement	MNS 3 weeks block	MNS 5 weeks clinical placement	GNS clinical placement	MNS 2 weeks clinical placement	MNS 1 weeks block	MNS 1 weeks block	MNS 4 weeks clinical placement	GNS clinical placement	MNS 2 weeks clinical placement	GNS clinical placement	MNS 4 weeks clinical placement

GNS = General Nursing Science

MNS = Midwifery Nursing Science

2.5 ASSESSMENT OF STUDENTS

Academic performance of students is assessed by formative- and summative assessments. In nursing education, assessment tells us “How well has the student achieved the objective/leaning outcomes” (McDonald, 2014: 12). Students’ knowledge, skills, values and attitudes are assess in this process (MNS 100 Study guide, 2017: 36).

Formative assessment take place during an academic year, and during this assessment, it is determined if the student meets the theoretical and clinical standards as set in the curriculum (MNS 100 Study guide, 2017: 37). During formative assessment, a multidimensional approach is used to assess students, namely; psychomotor skills, affective behaviour and higher-level of cognitive abilities are evaluated (McDonald, 2014: 7). Evaluating the learning progress during instruction, teaching, education and lecturing directs future learning by students. It judges students’ progress regarding learning outcomes (McDonald, 2014: 14). By assessing students during the learning process, their strengths and weaknesses are identified. It allows the lecturer to provide constructive feedback during remediation, which will enhance the learning process and allow the student to improve before the summative exams (Oermann, 2015: 192). In addition, assessment of students’ academic performance allows lecturers to do introspection regarding the quality of instruction and adjusting teaching strategies (McDonald, 2014: 14; Bastable, 2014: 606).

Summative assessment is an assessment of a student’s performance during the midwifery course at the end of an academic year (Program Regulation Level 1 & 2, 2017: 1). Summative assessment reviews what students have learnt after teaching and learning and whether they are competent (Oermann, 2015: 192; Bastable, 2014: 610). Summative assessment is done to determine whether learning has taken place and if learning outcomes has been achieved (McDonald, 2014: 14).

Level 2 students are theoretically assessed by writing three midwifery formative tests (50 marks each) and clinical formative assessments are done through objective structured clinical examination (OSCE) (MNS 100 Study Guide, 2017: 37, 39). Theory summative assessment is done during the month of October, when students write a 3 hour Midwifery Nursing Science paper (100 marks). Students need a minimum of 40 per cent (formative assessment) year mark and 80 per cent theory attendance to qualify for the summative assessment (Programme Regulations of Level 1 & 2, 2017: 9).

Clinical summative assessment is done during the months of August-September, when students do a comprehensive assessment on the care of a low risk antenatal woman (100 marks) (MNS 100 Study Guide, 2017: 37, 39, 41). Students need a minimum of 40 per cent (formative assessment) year mark and 90 per cent clinical attendance to qualify for the summative assessment (Programme Regulations of Level 1 & 2, 2017: 9).

Level 3 students are theoretically assessed by writing three midwifery tests (formative assessments, 50 marks each). Clinical formative assessment is done through a neonatal case study (25%), and a comprehensive assessment and care of a high risk antenatal woman (75%) (MNS 200 Study Guide, 2017: 29, 30). Theory summative assessment is done during the month of October, when students write a three (3) hour Midwifery Nursing Science paper (100 marks). Clinical summative assessment is done during the months of August-September, when students do a comprehensive assessment on the care of a high-risk postnatal woman (100 marks) (MNS 200 Study Guide, 2017: 30, 31). For students to pass and be promoted to their Level 4 of their training, they need a theory final mark of 50 per cent (sub-minimum of 40% in summative assessment) and practical final mark of 50 per cent (MNS 200 Study Guide, 2017: 33; Programme Regulations, 2017: 5, 6).

2.6 ACADEMIC PERFORMANCE

During the midwifery course, students have specific learning outcomes in each model (Antenatal care, Intrapartum care, Postnatal care, Neonatal care, Family Planning and Immunisation) that they are taught. Academic performance is measured regarding these specific learning outcomes, by formative assessment and summative assessment (S.G. Lourens Nursing College: Study Guide for Midwifery Nursing Science 100, 2017: page 48-86). For students to pass and be promoted to Level 3 of their training, they need a theory final mark of 50% and practical final mark of 50 per cent (MNS 100 Study Guide, 2017: 44) (Programme Regulations of Level 1 and 2, 2017: 2).

2.7 LEARNING THEORIES

A learning theory indicates a framework of constructs and principles on how people learn. Learning theories guide the educator; which learning theory will be used to approach the learning process and how to change attitudes, behaviours and skills of learners (Bastable, 2014: 65, 66).

2.7.1 Behavioural learning theories

Learning is defined as observable change in behaviour due to interaction with the outer environment (external conditioning and reinforcement) (Oermann, 2015: 16, 17). The behavioural learning theory focuses on what the learner will be able to do when the instruction is concluded. Meaning, will the learner be able to know and correctly apply the skills and knowledge that were taught. If a learner has learnt something, it could be observed, because the interaction with the environment will be in a particular way, indicating that learning took place (Mastrian, McGonigle, Mahan & Bixler, 2011: 76, 77). Behavioural learning theory is based on behaviour, which is positively reinforced and will occur again. These educators will present subject content in small quantities, so that it can be reinforced (Bruce, 2017: 96).

There are three main groups of behaviourist theories:

- Classical conditioning/learning (Pavlov)
  In classical conditioning theory, behaviour is learnt due to the stimulus-response (conditioning). People learn by responding in a specific way due to a specific stimulus (Bruce, 2017: 96, 97). Classical conditioning is used in lower-order learning/education by systematic desensitization. A nursing educator may encounter a student who fears participating in small-group discussions. The student could be taught relaxation to manage the anxiety (Hughes et al., 2013:91). Behaviourists view learning as the product of the stimulus conditions and the responses that follow (Bastable, 2014: 67). According to Watson, the association made between a stimulus and a response leads to learning of behaviour (in Hughes et al., 2013:86).

- Law of effect (Thorndike)
  The law of effect implies that a behaviour/action followed by change in the environment will repeat in similar situations, meaning that behaviour that leads to a reward will be repeated. The consequences of present behaviour will determine future behaviour, meaning that if a student does not receive feedback on performance, it is unlikely that the behaviour will occur again. (Bruce, 2017: 98).

- Operant conditioning/learning (Skinner)
  Operant conditioning implies changing behaviour by using reinforcement/reward that follow after the desired response (Oermann, 2015: 17). The reward/reinforcing refers to stimulus/event that strengthens the probability that the response will occur again (Bastable, 2014: 69). The reward can be positive reinforcement, negative reinforcement, punishment or

omission of reinforcement. Negative reinforcement is administered immediately and it is emphasises that the behaviour is punished and not the person. The key in operant conditioning is to observe individuals responses to a specific stimulus and then select the best reinforcement stimuli to change the behaviour (Bastable, 2014: 69, 71). In operant conditioning, the learner's behaviours are instrumental in controlling events. In Skinner's theory, the concept of reinforcement was seen as the main factor of learning, e.g. provide immediate feedback on learner performance (Hughes et al., 2013:87, 91).

Behavioural learning theories have been criticised and found not to be conducive to enhance human learning due to the complexity of humans (Bruce, 2017: 99, 100). Behaviourist theory has been seen as a teacher centred model where learners are passive and easily manipulated, with the emphasis on extrinsic rewards (Bastable, 2014: 72). Skinner and Thorndike emphasise learning as a change in behaviour, where a specific stimulus will lead to a certain response (Bradshaw & Lowenstein, 2014, 3). In behavioural learning theory, learning takes place by programmed learning (linear- and branching programmes) and mastery learning. In programmed learning, specially prepared learning materials are used by students for individual study of a particular topic/learning outcome. In mastery learning, all tasks can be learnt by a student if they are given sufficient time to learn (Hughes et al., 2013:88, 89).

2.7.2 Social learning theory

Social learning (observational learning) takes place when human behaviour is learnt through observing and modelling (Oermann, 2015: 19). According to Bandura, complex patterns of behaviour can be learnt by observing and copying others (Bruce, 2017: 102).

In social learning theory, social factors and the social context contribute to learning and behaviour. In social situations, the individuals/learners are interpreting and responding to the social situation. Role modelling is the central thought of social leaning theory. These role models need to be enthusiastic, professionally organized, caring, self-confident, knowledgeable, skilled and good communicators (Bastable, 2014: 79). Social learning theory see human learning as coming from other people, by observing, coping and reinforcement of other people's social behaviour (Bradshaw & Lowenstein, 2014, 4). According to Bandura (cited by Hughes, 2013: 92), language can only be learnt by observation of human models. Bandura (cited by Bruce, 2017: 103) divided social learning in four phases/steps of observational learning:

Attentional phase

During this phase, the behaviour and characteristics of a role model (media, what we read, what we hear) are observed by the student. The student must also be ready to learn and have the ability to process the information. Learning takes place more effectively when the role model is popular, attractive, admirable and has a high status and competence in the student's view (Bruce, 2017: 103; Bastable, 2014: 80). During the attentional phase, learning is influenced by the following factors, namely interpersonal attraction between the model and the observer, usefulness of the observed behaviour and distinctiveness, complexity and frequency of contact with the modelled stimuli (Hughes, 2013: 93).

Retention phase

During this phase, students have to practise the observed behaviour to remember the behaviour. The role model has to continuously re-model their behaviour that students want to copy/learn (Bruce, 2017: 103). The behaviour is organized and rehearsed before the behaviour is performed (Hughes, 2013: 93).

Reproduction phase

During this phase, students want to behave exactly like the role model and evaluate if their behaviour is nearly the same as that of the role model (Bruce, 2017: 103). "Mental rehearsal, immediate enactment and corrective feedback strengthen the reproduction of behaviour" (Bastable, 2014: 80). The learner must be able to carry out the observed behaviour and evaluate it for accuracy (Hughes, 2013: 93).

Motivational phase

During this phase, learnt behaviour must be reinforced. Reinforcement can be done internally and externally. External reinforcement is done by rewarding the students with praise, by giving a good mark, money, sweet treats or dining out. Internal reinforcement is done when students self-reward themselves by congratulating themselves or promising themselves a treat, when they have successfully learned or completed a tasked (Bruce, 2017: 103). The lecturer must always make sure that positive behaviour is reinforced and not inappropriate behaviour. Students that performed well can be used as peer-tutors (Bruce, 2017: 103). According to Bandura (2001), students learn by copying behaviour from different models e.g. unit managers, nursing service managers, clinical preceptors, nurse educators, peers and leaders (Bruce, 2017: 104). Bandura (2001) started to incorporate sociocultural influences in his learning theory (Bastable, 2014: 81).

2.7.3 Cognitive learning theories

In cognitive learning theories, learning is the change in mental processes/structures (Oermann, 2015: 18). The cognitive learning theorist emphasis what happens inside the learner. This theory focusses on learner's perception, thoughts, memory and ways of processing and structuring information (Bastable, 2014: 72). It is an active process, where learners are involved in perceiving information, interpreting it based on exciting knowledge and get new insights and understanding. This allows learners to retain knowledge in longer-term memory (Bastable, 2014: 73).

Long-term memory stores knowledge/information by imagery, association, rehearsal and breaking the information into units. Learners organise knowledge/information and make it meaningful (Bastable, 2014: 75). They see learner's goals and expectations as motivation and not reward. Individual learners will perceive, interpret and respond to the same knowledge/events differently (Bastable, 2014: 73). Cognitive theorist study the mind and how it works. Cognition focus on what a person/learner knows regarding information/knowledge he/she have learned (Mastrian et al., 2011: 78). These theorists focus on how learning occurs and thinking develops.

Ausubel's meaningful learning theory

Ausubel focused on how to organise and teach large amounts of knowledge meaningfully and effectively by the lecturer (Bruce, 2017: 105). This is done if general principles, concepts and propositions of a subject/course have been presented to a student first. Thereafter, new knowledge/information can be introduced. This new knowledge must always relate to previously learnt knowledge, e.g. "comparing the human circulatory system to the road transport system, with which the students are already familiar with" (Bruce, 2017: 107; Bradshaw & Lowenstein, 2014: 400).

In this theory, students build new and more difficult knowledge on existing cognitive structure/precognition (existing knowledge base). The existing cognitive structure enhance learning; allow retention of new knowledge and problem solving (Bruce, 2017: 105). Meaningful learning occurs when a student has a strong learning attitude towards the subject/course and the subject/course is meaningful for the student. According to Ausubel, meaningful learning will only occur when a student builds new information on an existing subject knowledge base (Bruce, 2017:106). There are three types of meaningful learning, namely representational/vocabulary learning (learning the meaning of words), concept learning (refers to assimilation of concepts,

objects, events, situations or properties) and propositional learning (refers to meaning of a word/concept in a sentence) (Hughes, 2013: 72).

According to Ausubel (2013), three criteria need to be met before material can be learnt meaningfully. Students must adopt an appropriate learning "set", the learning task must have logical meaning and the student's cognitive structure must contain ideas on which new material/knowledge can interact (Hughes, 2013: 72). Ausubel distinguishes between types of learning by using a model consisting of four quadrants, namely meaningful reception learning, rote reception learning, meaningful discovery learning and rote discovery learning (Hughes, 2013: 72).

Assimilation theory forms the basis of Ausubel's ideas. Ausubel emphasises cognitive and affective variables that affects learning. Cognitive variables indicate that previous knowledge forms the basis of learning new material, the learner must be developmentally ready to learn. The intellectual ability of learner determines if he/she will be able to learn, practise and method of instruction. Affective variables indicate motivation and attitudes, personality, group and social factors and teacher characteristics (Hughes, 2013: 72).

Gagné and the conditions for learning

According to Gagné, certain conditions must be present/in place before learning can take place (Bruce, 2017: 107). According to Gagné (1985), learning is defined as "a change in human disposition or capability that persists over a period of time and is not simply ascribable to processes of growth" (Hughes, 2013: 78).

Gagné's theory consists of three components:

- Taxonomy of learning outcomes
- Specific learning conditions needed for learning and attainment/memorising of each learning outcome
- Nine events of instruction (Bruce, 2017: 107).

The three components consists of the following:

Taxonomy of learning outcomes

- Verbal information: – students must be able to recall previously learnt knowledge e.g. list the symptoms of shock.

- Intellectual skills: - students must first learn low cognitive knowledge/skill/content before they are able to master higher cognitive knowledge/skills/content (prototypes, association and chaining), discriminations (differences e.g. between tablet and a capsule), concepts, rules, higher-order rules (problem solving).
- Cognitive strategies: - is when students master learning and thinking. This process will differ from each individual student with regards to how they learn, think, act and feel.
- Attitudes: - the choice of personal/students action (behavioural component), will be influenced by what they believe (cognitive component) and feel (affective component).
- Skills: - during this process students use their cognitive- and motor skills for example during a procedure of inserting an intravenous line the student needs (well-demonstrated) motor skills and knowledge (Bruce, 2017: 107, 108; Hughes, 2013: 79, 80-85).

Specific learning conditions needed for learning and attainment/memorising of each learning outcome

The following internal conditions/processes must be present in a student for learning to take place; attention, expectancy, retrieval, pattern recognition, selective perception, chunking, rehearsal and encoding, retrieval and responding, enforcement and error correction, responding and retention, retention, retrieval and generalisation (Bruce, 2017: 109; Hughes, 2013: 84).

Nine events of instruction

Gagné developed nine events of instruction to facilitate the internal processes, namely:

- Gaining attention of the learner (e.g. loudness of the voice, asking questions),
- informing the students of the objective and expectations, it will motivate them to learn,
- stimulating recall of prior learning by asking questions about it,
- presenting the stimulus/information by printed material, presentation of problem, description of strategy or demonstration of a motor skill,
- providing student guidance to understand/learn by building new information on existing knowledge and give examples of abstract concepts,
- eliciting performance by demonstrating the information or skill,
- providing feedback (reinforcement) regarding the correctness of the students' performance e.g. verbal feedback or written comments,
- assessing performance by formative – and summative assessments (theory and clinical), and

- enhancing retention and transfer, through application and practice (Bruce, 2017: 109; Hughes, 2013: 79-85).

These principles, provides a useful plan of instruction to promote/enhance learning (Bruce, 2017: 109; Bastable, 2014: 75).

Robert Gagné emphasized the sequencing of instruction, by teaching first simple learning outcomes and then more to complex learning outcomes. Gagné learning theory includes intellectual skills (discrimination learning, concept learning and rule learning), motor skills, verbal information, cognitive strategies and attitudes (Bradshaw & Lowenstein, 2014, 4).

Bruner's discovery learning

Bruner believed that students have to be actively involved to discover/obtain knowledge. Students on their own, with motivation, encouragement and guidance of the lecturer (guided discovery) must do this. The lecturer creates situations/scenarios, which must stimulate students to start thinking and find answers (Bruce, 2017: 111). Students must also firstly understand the structure of the subject, namely its concepts, guidelines and principles (prior knowledge) before discovery learning can take place. Discovery learning takes up more time and needs problem-solving skills, but it leads to self-directed learning, which will allow lifelong learning in professionals (Bruce, 2017: 111).

According to Bruner, cognitive learning is a process of conceptualization and categorization (Bradshaw & Lowenstein, 2014: 4). Bruner is of the opinion that learning involve three processes, namely the acquisition of new information (build on accessing knowledge), transformation of information (new knowledge is analysed and processed in a new situation) and evaluation (knowledge are checked if they are correct). Bruner sees learning as a process of categorization of objects according to their common properties. The new knowledge/objects are compared with the properties, to see it belongs there (Hughes, 2013: 76).

Bruner also makes use of coding system for explaining/learning of more complex information/knowledge. The coding system consists of general categories, hierarchically arranged (Hughes, 2013: 77). Research has shown that adult learners learn better during self-directed learning, problem solving and by using their experiences and skills (Bastable, 2014: 77).

2.7.4 Humanistic approaches

Humanistic theorists emphasise that humans are holistic beings that consists of physical, mental, social and emotional components. This means that humans have thoughts, feelings, experiences, attitudes and values and have a natural desire to reach their full potential (Bruce, 2017: 111). In humanistic learning theory, adults are seen as self-directing, empowering and autonomous in their learning (Hughes, 2013: 18). In the humanistic approach to learning and teaching, the teacher-student relationships (interpersonal relationship) and the classroom climate are the two main principles (Hughes, 2013: 17; Bastable, 2014: 87).

Humans are seen as unique in their capabilities. Gage and Berliner describe five objectives of the humanistic view of education, namely to promote positive self-direction and independence, to develop the ability to take responsibility for what is learnt, to develop creativity, curiosity, interest in the arts (Mastrian et al., 2011:79), enthusiasm, initiative and responsibility (Hughes, 2013: 18; Bastable, 2014: 87). Students learn the best when it is knowledge that they want and need to know in a nonthreatening environment. The nonthreatening learning environment consists of where students are allowed to choose tasks and activities, set realistic goals, participate in group work, and the lecturer acts as facilitator and a role model to foster attitudes, beliefs and habits (Mastrian et al., 2011:80).

Rogers' student-centred approach

In the student-centred approach to learning, the importance is the subject matter, student participation, involvement in the learning situation, self-evaluation, non-threatening learning environment, non-critical atmosphere and warm interpersonal relationship between the lecturer and the student is needed for learning to take place. For warm interpersonal relationships genuineness, trust, acceptance, support and empathetic understanding is required on behalf of the lecturer (Bruce, 2017: 111; Hughes, 2013: 19).

The student-centred approach involves experiential learning where logic, thinking, knowledge, feelings, concepts, experience, ideas and their meaning have to be integrated for learning to take place. The lecturer must be interested in the student as a person, be aware of individual differences, recognise individual effort and progress, identify learning problems and be aware of the stress students experience (Bruce, 2017: 111). Rogers saw the teacher/educator as a facilitator/helper of learning and change, a provider of resources for learning, someone who shares knowledge and feels with the student, who is genuine, trustworthy, empathetically (puts

themselves in the students' shoes) and who accepts the student (Hughes, 2013: 19, 20; Bastable, 2014: 87).

The learning environment should be where psychological safety exists; where students feel safe and at ease e.g. rearrange seating for small-group techniques, case discussions, project work, practical and field-based studies. This will facilitate discussion of feelings and values which is a crucial aspect of the humanistic approach. Accept students/learners as individuals and use their forenames (Hughes, 2013: 20, 21; Bastable, 2014: 85, 87). Time must be provided for students/learners to reflect on what have been learnt and sensitive thoughtful feedback is necessary (Bastable, 2014: 87).

Maslow hierarchy of needs

In Maslow's hierarchy of needs, people first need to meet their lower levels of needs before they can strive towards satisfying their higher levels of needs. Maslow differentiates between deficiency needs and growth needs. The deficiency needs is crucial for physical and psychological well-being. When deficiency needs are fulfilled, the drive to fulfil the growth needs occurs. The aim in education is to guide a student to reach the top of Maslow's hierarchy namely; self-actualisation, becoming the best he or she is capable of becoming. (Bruce, 2017: 113, 114; Hughes, 2013: 19; Bastable, 2014: 86).

The bottom of Maslow's hierarchy consist of physiological needs (food, warmth, sleep), then safety needs, then needs for belonging and love, then self-esteem (competence, confidence, independence, status, recognition, appreciation) and self-actualization (fulfil one's potential) needs (Bastable, 2014: 86, 87). People who move back and forth between the levels e.g. a student who is hungry and sick is unlikely to learn. Students need love, acceptance, respect and good self-esteem to effectively learn (Bruce, 2017: 113, 114).

2.7.5 The constructivist approach

The constructivists approach to learning is when the lecturer provides information and direction to the student on where to find the appropriate knowledge/information/study material but does not organise the students. The constructivist approach also guides the student to build on previous knowledge learned. Students are guided to critical thinking and problem solving skills (Velo et al., 2012: 130, 131). Constructivism is an active learning process, meaning the learner must actively select information, organize it and integrate it within their existing knowledge through for example

problem solving. The learner is encouraged to explore, articulate and reflect (Mastrian et al., 2011:81, 82).

In constructivist learning, students learn in groups by engaging in discussions and debates guided by the presented learning context and previous experiences (Bruce, 2017: 114). Learning moves from memorizing knowledge to meaningful learning and problem solving. The student learns to approach the problem from a different perspective in problem solving (Bradshaw & Lowenstein, 2014:399, 400).

There are three primary theories:

Ausubel's meaningful learning theory

See previous notes on page 23.

Piaget's view of learning

According to Piaget, intellectual development of the individual and their adaptation to the environment is the base for learning. For adaptation to occur, organization must take place within the individual. Internal organization is a way of giving meaning and dealing with aspects of the environment, which a person encounters. Assimilation and accommodation are incorporated in this learning process (Hughes, 2013: 13). The stage of development determine what the individual will learn. Development is influenced by maturity, experience, social interaction and equilibration. Piaget differentiated between physical and logical-mathematical experience. In physical experience, the physical features of an object is observed, e.g. a round table (Bruce, 2017: 115).

A logical-mathematical experience implies a higher cognitive level of thinking and learning. Here students' base knowledge on the features of the action they perform on the object e.g. when eating at the table, the table will not collapse. Social interaction is knowledge that a student obtained through learning and teaching. During equilibration, the student integrates and accommodates knowledge learnt, so they can adapt to the environment (Bruce, 2017: 115).

Vygotsky's theory of interactional learning

Vygotsky focused on cognitive development through interactional learning. Interactional learning occurs in a cultural context and involves social interactions, which facilitate understanding,

gathering of knowledge and experience (Oermann, 2015: 18; Bruce, 2017: 115). Vygotsky emphasizes language, social interaction and adult guidance in the learning process (Bastable, 2014: 76).

Different cultural-, social processes and language influence cognitive development. During this process knowledge, ideas, attitudes and values are formed. According to Vygotsky, social interactions (questions, prodding and prior knowledge) with the lecturer and peers (group work) allow students to function on a higher cognitive level and be able to independently solve problems and develop critical thinking skills (zone of proximal development) (Bruce, 2017: 116; Bradshaw & Lowenstein, 2014: 151). Vygotsky emphasise that instruction of content can fail if the basic needs of students, namely freedom, power, love and belonging, fun, survival and reproduction, are not met. (Bradshaw & Lowenstein, 2014: 151).

2.7.6 A modern constructivist perspective on learning

Learning is dependent on existing knowledge. Knowledge can only be remembered if students organised it in cognitive structure, learning is a process of knowledge construction. A student is actively involved in his/her learning. In this process, the teaching task of the lecturer will be to facilitate lifelong learning by students (Bruce, 2017: 117).

Learning as a process of knowledge construction

Students construct their own knowledge by processing new knowledge together with existing knowledge. Learning takes place by interpretation/critical thinking and not by recording/absorption of knowledge. Students only remember new knowledge when it is interpreted from the perspective of the existing knowledge base. In the process of knowledge construction, learning takes place when there is construction of meaning, and this is an active process. “Information is turned into knowledge by means of interpretation by actively relating it to existing bodies of knowledge” (Bruce, 2017: 118).

Learning as conceptual change

Learning occurs when different ways of understanding of the same phenomenon (event/facts/incidents) happen. Conceptual change occurs when a person/student experiences, understands and conceptualises a phenomenon in different ways. When students learn about the phenomenon, it includes learning the fact, principles, concepts and methods, which stimulate

questioning, interpretation and critical-analytical thinking. In this theory, “resistance to change syndrome” is a problem among older students (Bruce, 2017: 119; Bastable, 2014: 190).

2.7.7 Mastering learning theory

Mastering learning theory states that all individuals/students have the ability to learn. When learning conditions and learning outcome objectives are clearly defined by the lecturer, all students will be able to learn. Individuals/students’ intellectual abilities differ, therefore learning at their own pace and time allows them to succeed in learning a task. In mastering learning theory, learning is influenced by time spent to learn (perseverance buy student) and time needed to learn (instruction, understanding and aptitude) a task (Bruce, 2017: 120, 121).

2.7.8 Andragogic learning theory

In andragogic-learning theory, education is more learner orientated and less teacher orientated. The relationship between the educator and adult learner is horizontal (Bastable, 2014: 189). Adult learners are divided into three major developmental stages namely; the young adult stage, the middle-aged adult stage and the older adult stage. Adult learners differentiate between life tasks, social roles and other activities. In adult learning, knowledge and skills are applied to solve problems. The motivator in adult learning is that they want to know how they are going to benefit from their efforts at learning (Bastable, 2014: 190, 191). Adult learners have established ideas, values and attitudes. They tend to be more resistant to change. Adults must also overcome obstacles during learning e.g. burden of family, work, social responsibilities, being older, illness and anxiety. Adult learners also need structure, clear and concise specifics, and direct guidance (Bastable, 2014: 190, 191).

Andragogic learning theory is a model developed by Knowles (1984) for teaching adults. The four basic assumptions of andragogy are as follows:

- As adults mature, they take responsibility for their own learning.
- Adults are experienced and have an existing knowledge base, which is a rich resource for learning. Meaning adults will learn more effectively through discussion sessions, problem solving sessions, reflection and critical thinking.
- Adults learning depend on what they need to know and do.
- Adult learners want to apply the new knowledge and skills immediately, by problem-solving and task-centred approaches (Bruce, 2017: 123; Bastable, 2014: 190).

For adult learners, the lecturer has to create a context conducive for learning and guide students to lifelong learning, meaning the lecturer needs to know the characteristics (self-concept, experience, learning readiness, learning orientation and motivation) of the adult student and consider them when planning and implementing the lecture (Bruce, 2017: 123; Hughes, 2013: 23).

Characteristics of the adult student:

- Self-concept – adult students are self-directing independent students, who takes responsibility for their own learning, determines their own learning needs, sets their own learning goals, plans their own learning strategies and applies self-evaluation. They do need direction from time to time and guidance to self-direction to lessen anxiety. Goals and criteria for evaluation must be clearly defined for adult students. Continuous feedback and self-evaluation can assist in motivating and self-directing learning of students (Bruce, 2017: 124; Bastable, 2014: 190).
- Experience – the collected experience that an adult student has is the highest contributing factor in the learning process. Learning from experience is highly valued. Adult students will build new learned knowledge on an existing knowledge base due to their experience. Adult students learn through critical reflection, which will include discussions and dialogue. Learning facilitation may include self-study, seminars, group discussions, symposia, case studies, simulation and role-play. The role of the lecturer will be to facilitate and promote dialogue between students and themselves (Bruce, 2017: 125; Bastable, 2014: 190).
- Learning readiness – adults show readiness to learn when they experience a problem, which needs to be solved e.g. a new task and as they climb the professional ladder. Adults should engage in lifelong learning (Bruce, 2017: 126).
- Learning orientation – adults are problem-solving and task-orientated. They want to apply new knowledge and skills learnt immediately in real-life situations. By studying case studies, discussions and critical thinking can be applied that require problem-solving skills. In adult learning, the facilitator needs to establish a physical and psychological climate conducive to learning, allowing decisions to be made about learning, diagnosing learning needs, formulating individual learning objectives, identifying learning resources, evaluating learning and supporting students regarding their learning plans (Bruce, 2017: 127).

According to Knowles, education and training involves a process model, which consists of seven elements namely; establishing a climate conducive to learning, creating a mechanism for mutual planning, diagnosing the needs for learning, formulating programme objectives, designing a pattern of learning experiences, operating the programme and evaluating the programme (Hughes, 2013: 24). The nurse educator will choose one or more learning theories as the best choice of instruction

for a specific learning outcome to be taught. Each learning theory gives us different insight into the complex ways humans learn (Mastrian et al., 2011: 76).

In nursing education, learning theories can be used at individual, group and community levels, it can be used to teach new material and tasks, but can also be used to solve problems, change unhealthy habits, guild constructive relationships, manage emotions and develop effective behaviour (Bastable, 2014: 65). Midwifery education is offered through face-to-face presentations, simulation, demonstrations and clinical accompaniment.

2.8 TEACHING AND LEARNING STRATEGIES

Teaching and learning strategies are very relevant to this study. Currently, traditional formal lecturers and small-group discussions are used most commonly to teach midwifery theoretical knowledge to students. Demonstrations, simulation and clinical accompaniment are done to teach midwifery clinical skills to students.

The purpose of learning theories, as discussed in Section 2.7, is to allow the lecturer to improve his/her teaching and learning strategies and promote learning. Teaching and learning strategies guide the lecturer/teacher to identify which strategy to use for a specific learning outcome. In lecturing/teaching, another learning outcome may need more than one strategy to be touched/explained at its best.

Teaching is defined as a method of addressing measurable learning outcomes. Teaching is a way content is structured, which enables the student to learn. It includes determining the objectives, arranging the instructional materials, creating the learning activities and evaluating students learning (Billings, 2012: 202). Students are encouraged to think and engage in dialogue, expression and attribution of meaning. During teaching, students should be stimulated and motivated (Bradshaw & Lowenstein, 2014: 10, 11). For teaching to be successful, the teacher must become acquainted with students, be interested in students and be knowledgeable, passionate and enthusiastic about the subject/course (Bradshaw & Lowenstein, 2014: 9, 10). Teaching is a teacher-focused activity where knowledge is instructed to a student on how to do something, to give instruction on a skill and to result in learning by example or experience (Boore & Deeny, 2012: 117).

Learning is defined as a change in behaviour, which results from experience (Oermann, 2015: 16; Billings, 2012: 203). Learning takes place by construction of thoughts, skills and ability to organise.

The clinical learning environment contributes powerfully to students learning (Bradshaw & Lowenstein, 2014: 9). For effective learning to take place, cooperative learning, active involvement and participation are needed. By doing so, a sense of empowerment is instilled in students (Bradshaw & Lowenstein, 2014: 11).

Learning consists of understanding, clarifying and applying the meaning of the knowledge learned. Learning also implies exploration, discovery, refinement and extension of the meaning of knowledge (Billings, 2012: 203). Learning is student-focused, self-active and acquire knowledge or skills by study or experience, being committed to memorise and become aware of though information or from observation (Boore & Deeny, 2012: 117). The learner can only accomplish learning (Billings, 2012: 203). Through the process of teaching and learning, complex knowledge is built on basic previous learnt concepts and knowledge (Velo et al., 2012: 130). Currently, the emphasis in education is that the lecturer facilitates learning and that students actively participates (Bruce, 2011: 194).

The following methods facilitate learning and are discussed in more detail below:

Reading is a type of independent learning strategy which requires understanding, interpreting and synthesizing. The number of pages that must be read must be realistic based on the due date e.g. if a student are given 500 pages to read in a week, will the student be able to read all the pages in a week? If students are not able to read all the pages assigned to them, the number of pages can be reduced, or the due date can be adjusted. Comprehension strategies, namely case studies or scenarios, can be used along with reading assignments, which will allow problem-solving strategies (cognitive and metacognitive approaches), support strategies (taking notes) and global strategies (meaning and purpose of the reading and the use of the context) (Oermann, 2015: 43).

According to Bligh (1998), teaching using *lecturing* is the most common teaching strategy in adult education, where the lecturer transmit knowledge to students. The lecturer method is very efficient to transfer knowledge to large groups of students (150 and more). The question do arise whether lectures actually facilitate students' learning, because it does not stimulate thinking and changing attitudes (Hughes, 2013: 190; Boore & Deeny, 2012: 142). With the lecturing method, the lecturer has direct control over what he/she teaches students (Bruce, 2011: 194, 207). Study guides, visual aids or handouts accompany the lecture strategy (Billings, 2012: 266).

During lecturing, the learner/students gather around the lecturer/teacher and take notes related to the subject/course, as he or she is the primary means of knowledge. It is the safest and easiest

teaching method, which allows the lecturer/teacher the most control within the classroom setting. By making use of lecturing, positive outcomes can be achieved when both the lecture and lecturer are well prepared (Bradshaw & Lowenstein, 2014: 128). For the lecturer method to be successful, the lecturer must convey an atmosphere of safety, warmth, acceptance, interest, enthusiasm and a sense of humour. This will allow students to feel free to participate, comment, ask questions and learn (Hughes, 2013: 195). Adult students like to be involved in the lecture. The lecturer can make use of buzz groups, incomplete handouts, quiz or tests to involve students (Hughes, 2013: 196).

Outcomes-based teaching and learning strategy is commonly used. Outcome-based education teaches critical thinking, which will lead to lifelong learning throughout people's careers and adult lives. It enables professionals to continue to develop professionally (Bruce, 2011: 195). This type of education indicates what a student will know and be able to do after completion of a program. The learning outcomes guide the lecturer in what to educate/teach students (Bruce, 2011: 194). In outcomes-based teaching and learning, students are expected to gain knowledge and develop a conceptual understanding of the knowledge learned (Boore & Deeny, 2012: 119).

Variants of teaching and learning strategies can be used, namely *demonstrations* (to show), team teaching and dialogue (Hughes, 2013: 198). Demonstrations teaches cognitive-, affective- and psychomotor aspects, allowing students to learn by performing the skill themselves (kinaesthetic feedback) (Hughes, 2013: 200). It explain facts, concepts and procedures in a visual manner and is especially used to teach practical/clinical nursing skills. It teaches students how to carry out a procedure and why they should carry it out (Bruce, 2011: 213).

In the *small-group teaching and learning strategy*, group discussion allow students to interact face-to-face in order to exchange ideas, feelings and viewpoints (Hughes, 2013: 201). A group discussion is defined as a way of allowing problem solving, to enhance members' knowledge regarding an issue, to address a question and to reach a consensus regarding an issue. It stimulates knowledge, critical thinking, thinking for themselves, gaining confidence and develop the ability to express their viewpoint (Bruce, 2011: 214; Boore & Deeny, 2012: 148).

According to Brown (1996), it allows students to develop interactive and collaborative skills, which is necessary for employment and research. Small-group teaching allows lecturers the opportunity for more intimate and rewarding engagements with students (Hughes, 2013: 201). Group discussions allow students to engage, explore diverse ideas and clarify their own thinking. The learning outcomes must be clear and ground rules must be adhere to (Oermann, 2015: 48). Small group discussions will allow students from different cultural backgrounds to be less shy and

participate by contributing information that could be helpful to the class (Bradshaw & Lowenstein, 2014: 27).

Experiential learning is learning that results from experience, meaning active involvement of the student by doing. The characteristics of experiential learning is conceived as a continuous process grounded in experience, leading to resolution of conflicts, as a holistic process of adaptation to the world. It involves transactions between the person and the environment and is a process of creating knowledge. Learning takes place from experience through experience (Hughes, 2013: 202).

According to Kolb (1984), experiential learning is a "process whereby knowledge is created through transformation of experience" (Bruce, 2011: 197). Experiential learning can take place through small group teaching, role-play, reflective diaries, problem solving, return demonstrations and simulations (Bruce, 2011: 194). Observation and reflection are central aspects in experiential learning (Boore & Deeny, 2012: 130).

Simulation as a teaching strategy imitate a real life situation to teach students e.g. airline pilots spend time working in flight simulators or re-enacting a cardiac-arrest scenario. Simulation allows students to engage in active learning, creative thinking and high-level problem solving (Hughes, 2013: 226). Simulation replicate aspects of a real life situation, for example, students injecting medication into a piece of fruit to feel the sensation of puncturing a barrier. Learning takes place in the cognitive, affective and psychomotor domains (Oermann, 2015: 51).

During simulation, computerized, life-sized mannequins can be used to allow students to interact and practise a skill as they would have on a real patient in the clinical environment, for example, neonatal resuscitation, wound care, intravenous therapy and endotracheal suctioning. Simulation allows students critical thinking, to develop skills and ensure patient safety (Bradshaw & Lowenstein, 2014: 203; Boore & Deeny, 2012: 188). Simulation is done in a skills laboratory, where procedures are practiced, learning outcomes are evaluated and clinical skills are reinforced. A skills laboratory provides true-to-life clinical situations (Bradshaw & Lowenstein, 2014: 225).

Demonstration as teaching and learning strategy involves visibly showing students how to do something. Demonstration includes mental and psychomotor skills. Students demonstrate the skills learned back, which aids in retention of knowledge/skilled learned (Billings, 2012: 268).

Game-based learning dictate very precise sets of rules (Billings, 2012: 270). Educational games include board games, card games, quizzes and software applications. The aim of game-based learning is to create a method of learning that is both enjoyable and beneficial for learning (Hughes, 2013: 229; Bradshaw & Lowenstein, 2014: 171). During game-based learning, one or more players compete with themselves, with one another or with a computer by making use of their knowledge or skills to reach a specific goal. Students immediately receive feedback regarding their performance (Bradshaw & Lowenstein, 2014: 172). Educational games can be low technology or high technology (Oermann, 2015: 54).

Problem-based learning is a teaching strategy that confront students with real-life problems (patient scenarios), that allows critical thinking, collaborative work, effective team communication and self-taught content. Students prefer this method of teaching, because it is more effective in structuring knowledge, is interesting and enjoyable. The lecturer becomes the learning facilitator and students are more responsible and self-directed in their learning (Hughes, 2013: 230; Oermann, 2015: 50; Bradshaw & Lowenstein, 2014: 149). It allows students to work towards the understanding or resolution of a problem (Billings, 2012: 273).

Problem-based learning is a teaching-learning strategy that teaches students in small groups through problem solving and reflection. The learning enables students in groups to seek solutions to problems or situations by reasoning, hypothesising, planning and evaluating (Bruce, 2011: 199; Bradshaw & Lowenstein, 2014: 149). Students should be responsible for their own learning and the educator/teacher are the facilitators (Bruce, 2011: 200, 201, 215; Bradshaw & Lowenstein, 2014: 149).

During problem-based learning, there are four basic stages, namely problem analysis (what is known and unknown), brainstorming (identify resources), self-directed learning (each group member researches and gathers information), student responsibility and solution testing (group members share resources and information to test the solution) (Oermann, 2015: 51: Bradshaw & Lowenstein, 2014: 149). Problem-based learning is a constructivist approach to learning (Bradshaw & Lowenstein, 2014: 149) and focuses on enabling students to learn (Boore & Deeny, 2012: 117).

Case studies are a description of a situation/case/problem that can be genuine of fictional. Case studies provide a trigger for the discussion of issues and the examination of a real-life event (Hughes, 2013: 234; Billings, 2012: 267). The case study stimulates learning by allowing students to use their knowledge, skills and attitudes to answer/manage/solve the case (develop problem

solving skills) (Bruce, 2011: 204; Boore & Deeny, 2012: 150). Case studies allow students to make decisions, narrow down solutions and request additional information from the lecturer/teacher to solve a situation/case/problem. The lecturer/teacher must also debrief students/learners by discussing the problems and solutions identified (Oermann, 2015: 49).

Community-based education is where teaching and learning takes place within the community as a learning environment. It allows students to learn of community health problems (Bruce, 2011: 206).

Co-operative learning refers to group/team learning to allow the goals that they share to be achieved, meaning group members need each other to achieve the learning goals. Each group member is responsible for learning material, which is needed to achieve the goal. In the group/team communication, trust building, conflict resolution, cohesion and productivity skills are needed (Bruce, 2011: 206). Cooperative learning is a "form of highly structured group work that focuses on problem solving". During cooperative learning, tasks are assigned that require cooperation and cannot be completed alone. Students learn how to manage group dynamics, ensuring participation by all group members, and how to treat group member's contributions with respect and reach consensus as a group (Oermann, 2015: 50).

Cooperative learning promotes active- and reflective learning, encourage teamwork and promote student accountability. Large assignments and projects can be accomplished effectively through this teaching and learning strategy (Billings, 2012: 268). Cooperative learning is based on Vygotsky's social development theory, where students are dependent on other group members to achieve their goals. Learning occurs through mutual interaction and shared understanding, and leads to enhance intellectual development (Bradshaw & Lowenstein, 2014: 151).

Assignments are tasks that the lecturer allocates to a student/group. It may include reading assignments, case assignments, portfolio assignments or exercises for practising a skill. A guided learning activity is given to students. An assignment is a written report and may be used as part of formative assessments (Bruce, 2011: 217, 218).

A *portfolio* is a collection of written evidence; it allows personal and professional development by critical analysis of the contents. Compiling a portfolio allow students to have control over their learning and motivated student will learn more (Billings, 2012: 272).

Projects are investigations of a problem/issue that lead to learning. It is presented in a visual manner e.g. essay, a scrapbook, a portfolio or other forms of creative work. The project must always have educational content and must be in line with learning outcomes (Bruce, 2011: 219).

Workbooks/worksheets are guided self-instruction. Workbooks guide students through observations they should make and activities they should do while working in different wards in the hospital or in different community health clinics. Workbooks must be submitted by specific submission dates for assessment and evaluation. It is usually awarded a mark, as part of formative assessment (Bruce, 2011: 220).

Field trips are visits to outside agencies. Field trips should be planned with a define purpose in line with learning outcomes and be a learning experience. It is usually used for teaching/learning regarding district health services, rural healthcare and environmental health (Bruce, 2011: 221, 222).

Seminars as a learning and teaching strategy, is a method of organising a class for a guided discussion of a specific topic/problem. It requires knowledge and clinical experience and is suited for senior students and postgraduate students. A student or a group of students prepare and present the topic. When a group of students is used, each student should prepare and present the aspect of the topic that he/she have prepared (Bruce, 2011: 223, 224; Billings, 2012: 276).

A *tutorial* is a teaching method suitable for senior students, who can work on their own as individuals. The tutor present the course in the format of a lecture and allocate individual reading regarding the study material. The tutor asks questions regarding the assigned reading material to assess if students understand the subject matter and to identify any gaps that needs clarity (Bruce, 2011: 224).

A *symposium* is a strategy where two or more speakers present a topic, and at the end of the session, the audience can ask questions. A symposium involves a large group of people, where time is used effectively, and expert views are offered (Bruce, 2011: 225).

Debate refers to a means by which to address a topic, where more than one viewpoint is presented. The value of a debate as a teaching and learning strategy is to allow presentation of different viewpoints and not necessarily to find a resolution to the topic. A debate is discussing viewpoints from opposing positions or arguments to make their perspectives known. Debates stimulate critical thinking and active learning about issues in any discipline. Usually, two points of

view will be discussed and debated on. Debates encourage participants to identify the essential nature of the issue by evidence, to win a debate (Bradshaw & Lowenstein, 2014: 159; Billings, 2012: 267).

Role-play is a dramatic technique where participants behave in a certain manner to illustrate expected actions of persons in a situation. A scenario is given, and each person is given character roles to role-play. It mimics reactions and behaviours for students/learners to observe, analyse, discuss and give feedback. Role-play can be used to teach skills in ethical or culturally sensitive situations and why people behave as they do. This learning experience must always be in line with the actual learning outcome context (Bradshaw & Lowenstein, 2014: 183; Billings, 2012: 275). After each role-play session, debriefing must take place (Boore & Deeny, 2012: 150).

Reflection consists of stages through which the student should progress, having completed an experience. The student reflects using the following stages namely, returning to the experience (replay), attending to feelings, re-evaluating the experience and learning (could they have dealt better with the situation, what was learned from the experience). Reflection as a learning and teaching tool promotes lifelong learning and continuous professional development (Hughes, 2013: 206; Boore & Deeny, 2012: 131). In a research study done by Scanlan et al. (2002), it was found that reflection is a highly sophisticated intellectual skill and like all skills, requires learning (Hughes, 2013: 208).

Skills required for reflection are self-awareness, critical thinking, problem solving, evaluation, synthesis skills, open mindedness, ability to recall and honesty (Hughes, 2013: 209). The reflection learning model differentiates between reflection-before-action, reflection-in-action and reflection-on-action. This teaching strategy teach students to engage in self-assessment, to criticise the state of affairs, to promote change and adapt to change (Bruce, 2011: 198). Reflective learning sessions have not been used before in this particular nursing college. The researcher decided to implement reflective sessions as an intervention in the hope to improve the midwifery theoretical assessment results.

2.9 REFLECTION

Within the context of higher education, reflective learning has been seen as a process that can be used to improving students' learning and to promote lifelong learning as professionals. To enhance learning, students can be taught reflective skills, but students also need to develop and practise reflective skills for it to be effective (Ryan et al., 2012: 245).

2.9.1 Definition of reflection

Reflection is defined as the re-examination and evaluation of an experience, beliefs and knowledge. Reflection implies looking back at experience, beliefs, ideas, situations and knowledge. Reflection will lead to new perceptions/insight regarding knowledge learnt (Hatlevik, 2012: 870). Reflection includes critical thinking and is a metacognitive process (Rogers, 2001: 37). Reflection is part of active learning, where the student becomes an active constructor of knowledge and meaning (Oermann, 2015: 40).

Reflection is a thinking process which consists of five elements; thoughts and actions (content – what one thinks about when reflecting), attentive, exploratory and repetitive processes (how one thinks when reflecting), the underlying conceptual frame, the view on change and the self (Nguyen, Fernandez, Karsenti & Charlin, 2014: 1178, 1180). In simpler terms, reflection can be defined as the image viewed when looking into a reflective mirror. Its surroundings and the viewer's perspective influence the opinion formed regarding the image viewed (Roberts, 2016: 20).

2.9.2 Reflection framework

The Reflection framework, which is to be used, depends on the expectations of the learning outcomes (Lucas, 2012: 164). Reflection begins with a problem and the experience (inductive) of the problem, cause students to start reflecting. The reflective thinking process consists of range of steps/processes:

- Firstly a problem needs to be identified (understanding of the problem),
- Secondly a solution to the problem needs to be found, meaning a search needs to be done to find literature (deductive) regarding the problem, to solve the problem,
- Decide to plan and act to find a solution to the problem (thinking with the purpose of change),
- Organising and examining the information,
- Make assumptions and draw a conclusion (Rogers, 2001: 39, 44, 45, 50; Nguyen et al., 2014:1180, 1181).

Reflection takes place on different levels. Similarly, Bain, Ballantyne, Mills and Lester (2002) identified five levels of reflection and developed the five 'R's' framework of reflection. The reflective five 'R's' framework consists of Reporting, Responding, Relating, Reasoning and Reconstructing (Ryan, 2013: 147).

- **Level 1 - Reporting/responding:**

  This is the most basic level of reflection. At this level, students are taught to notice, deliberate and form an opinion about an issue (problem or experience) regarding the subject under study (theoretical midwifery) (Ryan, 2013: 147).

  During reporting/responding to problem-based scenarios, stimulating strategies can provide opportunities for students to reflect on themselves and their peers in a non-threatening environment. During discussions and negotiations, students will have the opportunity to find new ideas and actions to solve the issue (problem or experience) (Ryan, 2013: 154).

- **Level 2 – Relating:**

  At this level, it is required of students to reflect on the issues (problem or experience) in terms of their own previous experiences regarding the issues (problem or experience). Students must incorporate their knowledge, skills, values and priorities to deal with the issue (problem or experience). Following this, it will become clear if they need to consult others or access other resources to deal with the issue (problem or experience) (Ryan, 2013: 149). When relating, students analyse their knowledge regarding the subject under study, plan and justifying their responses to scenarios and make comparisons (Ryan, 2013: 157).

- **Level 3 – Reasoning:**

  At this level, students will intellectually analyse the issue (problem or experience). Students become actively involved in finding ways (knowledge of the subject) to solve the issue (problem or experience). Explanations and discussions will take place amongst students to examine different possibilities as a solution to the issue (problem or experience) (Ryan, 2013: 149).

  During reasoning, students need to be aware of the literature/theory regarding the subject, to be able to analyse the issue (problem or experience) (Ryan, 2013: 157). Students need key literature/theory in academic learning to solve an issue (problem and experience) through explanation and discussion (Ryan, 2013: 159).

- **Level 4 – Reconstructing:**

  This is the highest level of reflection and is difficult to achieve. At this level, students should demonstrate new ideas, new ways of thinking and new ways of approaching the issue (problem or experience) (Ryan, 2013: 157). At this level the importance of action plans are emphasised. Students engage in analysing the effects of different actions in a scenario. Possible responses

and their effects are analysed and discussed. Constructive feedback by the facilitator/mentor will enhance learning in class and lead to an improvement in academic performance (Ryan, 2013: 161).

Three types of reflection was identified, namely content reflection, process reflection and premise reflection. During *content reflection***,** students will think about the content/knowledge that was learnt. The questions that will be asked is “WHAT”, e.g. “what is the concept I am teaching?” (Cox, 2013: 2). *Process reflection* focuses on the way in which learning is taking place. The questions that will be asked is ‘’HOW’’, e.g. “How have I taught this concept before?” Alternatively, “How could I teach this concept differently?” (Cox, 2013: 2). *Premise reflection* focuses on our underlying assumptions or beliefs about things. The questions that will be asked is “WHY”, e.g. “Why is it important to teach this?” (Cox, 2013: 2).

These steps will allow students to critically reflect on their knowledge and assumptions. Metacognition (critical thinking) will be stimulated by asking What, How and Why questions about knowledge (issues/problems/experiences). In this way, students will learn from difficult situations, through failure and when things were difficult (Cox, 2013: 3).

2.9.3 Knowledge about reflection

Reflection guides students to refining and reshaping knowledge in their field of study and to facilitate “multiple ways of knowing”. During academic reflection, students need to show evidence of deep, active learning and a growing in professional knowledge (Ryan et al., 2012: 247). Data input occurs during teaching and assessing reflective learning (TARL). When information is used in different ways, new knowledge is generated and incorporated into existing knowledge, then this knowledge is applied in new ways of thinking over time (Ryan at al., 2012: 253).

According to Ryan (2013) reflection consists of two key elements namely; “making sense of experience in relation to self, others and contextual conditions and reimagining and/or planning future experience for personal and social benefit” (Ryan, 2013: 146). To enhance learning, students must reach higher, more abstract levels of critical or transformative reflection. During reflection, students have to re-examine/review their ideas and thoughts regarding the content knowledge, to change the way they responded or acted in a situation (Ryan, 2013: 146, 147). For a student to be able to reflect, the student must engage in self-assessment, criticise the existing state of affairs, promote change and adapt to change and practise as an autonomous professional (Bruce, 2011: 198).

Conventional teaching and learning methods lead to an isolated leaning environment, which is teacher/lecturer centred, instead of student engagement in teaching and learning (Kupczynski, Mundy & Maxwell, 2012: 86, 91). In conventional teaching, the lecturer is transferring information and knowledge in a formal lecture setting (Yeung & O'Malley, 2014: 59). Then students are left alone to understand, analyse and apply information/knowledge (Yeung et al., 2014: 59).

Reflection is an important skill for students to develop, which will guide students to greater depth of understanding, thinking and learning. It allows students to examine the bigger picture and view the situation (issue, problem, experience) more holistically. Reflection enables students to understand better and be able to manage situations. Critical thinking develops over time, leading to professional development and lifelong learning (Lucas, 2012: 163, 164).

2.9.4 Reflection method

Three reflection methods can be used, namely refection-before-action, reflection-in-action and reflection-on-action. *Reflection-before-action* refers to reflection that occurs before a developmental experience (Rogers, 2001: 40). *Reflection-in-action* refers to reflection that occurs during a developmental or challenging experience (Rogers, 2001: 40). Reflection-in-action is implemented when experiences are examined at the time they occur (Roberts, 2016: 21; Bruce, 2011: 198). Reflection takes place in the moment of the experience/event. It requires one to think and be aware of one's thinking, to experience and yet be aware of how and what one is experiencing all at the same time (Rogers, 2001: 54; Boore & Deeny, 2012: 130). Reflection-in-action occurs when a student is confronted with a problem-situation that needs to be resolved. The resolution occurs when the problem is seen differently during the actions. According to Schön, reflection-in-action consists of intelligence in the act itself (in Hughes, 2013: 484).

Reflection-on-action refers to reflection "after the fact", people are usually better at reflecting "after the fact" (Rogers, 2001: 54). Reflection-on-action is defined as a process that takes place after a specific event or teaching. It refers to the time when reflection will be done (Roberts, 2016: 21; Boore & Deeny, 2012: 130). After a certain experience, for example a patient having collapsed, the team members will get together and reflect on the management and care of the patient that were provided to save the patient's life. By making use of reflection, shortcomings will be identified, corrected and learning will take place were needed (Bruce, 2011: 198). Reflection methods include journaling, role modelling, use of questions and critical thinking (use of scenarios) to enhance learning (Rogers, 2001: 38).

In this research, reflection-on-action will be used. Reflection-on-action results in the development of knowledge. Students have to be ready, willing, responsible and actively participating, so that a new understanding of knowledge can occur (Rogers, 2001: 37, 42). Reflection-on-action guides students to reflect on an experience after it has taken place. The students explore their role in it and how they can change the result/outcome (Bruce, 2011: 198).

It is expected of students to reflect and act after feedback on formal assessment tasks, so as to enhance learning and reveal new ways of thinking (Ryan, 2013: 144, 145). By using reflection, students are encouraged to search for answers themselves to enhance learning. The lecturer's role will be to provide information and direction (Velo et al., 2012: 130). Constructive feedback will help to identify areas, which need development and improvement (Velo et al., 2012: 132).

In the past, reflection sessions were not used in the teaching and learning of theoretical midwifery. By implementing reflection sessions in theoretical midwifery teaching and learning, the researcher hopes that the theoretical midwifery results will improve, preparing midwifery nursing students to become critical thinkers (analyse and interpret) and lifelong learners, as professional registered nurses. Reflection will also help with the transition process from being a student nurse to becoming a professional nurse along with the demands of clinical practice. The use of reflection in teaching promotes growth, professional development and lifelong learning (Hatlevik, 2012: 869).

In Australia, reflection has been emphasised as a person-centred approach. The role of the lecturer is to facilitate, may it be per individual or in a group. By making use of reflection, the facilitator creates conditions, which enable others to grow, learn and develop new understanding of the learning content (Middleton, 2017: 1). According to Fay (1987), reflection enlightens, empowers and leads to the transformation of a student, which is required for higher education (Middleton, 2017: 3).

2.9.5 Reflection environment

The reflective learning environment must be safe, trusting and encouraging. The lecturer must engage, motivate and be interested in the students. A friendly, trustworthy relationship has to be established between the lecturer and students (Velo et al., 2012: 130, 131).

On the other hand, students need to be open and willing to engage in the process of reflection. The lecturer needs to carefully plan and prepare for reflective sessions in order to be successful. To effectively facilitate the reflective learning process, the lecturer needs to be self-sufficient, flexible,

provide effective feedback to students, connect with the students, have access to faculties and have problems/challenges clarified. The lecturer needs to plan the reflective sessions effectively (Rogers, 2001: 50, 51). Reflection can be done with an individual student or in a group setting. The lecturer/mentor has to develop a mentoring relationship with the students (Rogers, 2001: 52, 53)

2.9.6 Advantages of reflection

Reflection teaches nursing students to function independently, become critical thinkers, problem solvers and lifelong learners (Velo et al., 2012: 129). Reflection leads to personal and professional effectiveness, a new understanding, and allow for better actions (Rogers, 2001: 37, 41).

Reflection guides students to change their way of thinking and to develop new skills and ideas. According to Schőn (1983), change in thinking during reflection sessions lead to a new understanding of theoretical knowledge. Reflection leads to a broadened and deepened understanding of theoretical knowledge and enhanced learning. Personal and professional effectiveness and retention of knowledge/information takes place (Rogers, 2001: 45, 48, 49).

At the University of St. Gallen, it is emphasised and required that students need to be able to reflect. Reflection fosters personal growth, self-regulated learning and professional competence. Reflection enhances critical thinking, decision making, responsibility and leadership. Reflection is a target of higher educational institutions (Wagner et al., 2016:1). One advantage of teaching students how to reflect is that it will lead to life-long learning and ongoing development in their career, to ensure that they will provide the best nursing care to their patients (Watson & Kenny, 2014: 57).

2.9.7 Evaluation of reflection

Reflection sessions will be successful when individual and environmental factors are managed properly (Rogers, 2001: 43). Reflection allows students to learn, it helps students to learn from experience and to gain a new perspective, which leads to personal and professional effectiveness. In evaluating if students really learnt how to use reflection to enhance their learning process, students may be asked to analyse their own efforts in using reflection (Rogers, 2001: 55).

Reflection as a teaching and learning method was previously not used to communicate, integrate, utilize and re-enforce knowledge, rather conventional methods of education were used. The researcher decided to implement and analyse a new method at the college of learning and

teaching in the hope to improve the theoretical midwifery results and be a facilitator of learning. The method reflection-on-action were used. Previously, students have only been exposed to conventional methods of education regarding their learning outcomes/content. During the reflective sessions, students will be guided to reflect on the previous day midwifery theoretical knowledge and clarify midwifery theoretical knowledge, which was not clear and understood. From the MNS 100 students, Group 1 received traditional formal lecturers and reflective sessions, while Group 2 will only receive traditional formal lecturers. The researcher identified reflective learning sessions as the gap that if addressed, could improve the midwifery theoretical assessment results.

2.9 CONCLUSION

Chapter 2 provided a literature review related to the study, which included nursing education, midwifery education, assessment of students, academic performance, learning theories, teaching and learning strategies and reflection.

In Chapter 3, the research methodology will be discussed, namely the research question, aim, objectives, design, unit of analysis, sampling method, sample size, research instrument, data collection, intervention, data gathering and organisation, data analysis and interpretation, validity and reliability.

CHAPTER 3
RESEARCH METHODOLOGY

3.1 INTRODUCTION

Literature related to nursing education, midwifery education, academic performance, learning theories, teaching and learning strategies and reflection were discussed in Chapter 2. Conventional teaching methods have been used most of the time in education and in most educational institutions. By introducing reflective sessions in education, it is hoped to enhance the learning of students and to establish life-long learning in students.

It has been observed that in a particular nursing college in Gauteng, a high failure rate in theoretical midwifery occurred. Conventional midwifery education has been practised and it does not focus on development of reflective methods/skills. By combining conventional midwifery education with the development of reflective methods/skills in midwifery education, students might be able to reflect on what they know regarding theoretical midwifery and what knowledge still needs to be learned and/or reinforced to improve academic performance of their theoretical midwifery assessment results.

Reflection implies a careful re-examination and evaluation of experience, beliefs and knowledge and often involves looking back or reviewing past actions (Hatlevik, 2012: 870). In this study, reflective sessions were used as an intervention to enhance learning in midwifery theory.

3.2 RESEARCH QUESTION

The research question that guided the research conducted during this study, was formulated as follows:
What are the effectiveness of reflective sessions on the academic performance of Level 2 midwifery students?

3.3 AIM OF THE STUDY

The aim of the study was to determine the effectiveness of reflective sessions on the academic performance of Level 2 midwifery students, enrolled in the four-year Diploma in Nursing Sciences at a Gauteng Nursing College.

3.4 RESEARCH OBJECTIVES

- To determine the academic performance of the experimental group (Group 1) of Level 2 midwifery students, enrolled in a four-year Diploma in Nursing Sciences at a Gauteng Nursing College.
- To determine the academic performance of the control group (Group 2) of Level 2 midwifery students, enrolled in a four-year Diploma in Nursing Sciences at a Gauteng Nursing College.
- To compare the academic performance of the experimental group (Group 1) and the control group (Group 2) of Level 2 midwifery students, enrolled in a four-year Diploma in Nursing Sciences at a Gauteng Nursing College.

3.5 RESEARCH DESIGN

The research followed a quantitative design that was a quasi-experimental non-equivalent control group design.

Quantitative research design is defined as a formal, objective, rigorous, systematic process of collecting numerical data. The quantitative research design describe examined relationships among variables and determine the effectiveness of intervention (Grove, Gray & Burns, 2015: 32). Quantitative research design refers to investigation of phenomena (interventions) that lend itself to precise measurement (Polit & Beck,2017: 739). The quantitative design was used because numerical data will be used for the research (Brink et al., 2013: 115). A quantitative design was chosen because it measures findings (formative and summative assessments) that were tested in the real world (Polit & Beck,2017: 13) and ensure valid and reliable results (Botma et al., 2015: 82). The researcher does not participate in the research data gathering, which minimize biases (Botma et al., 2015: 82). Quantitative research allows control strategies to minimize biases and to maximize precision and validity (Polit & Beck,2017: 13, 14).

The unit of analysis in quantitative research is numbers (in this research formative and summative assessment marks), which cannot be manipulated or changed and are statistical analysed. It also allows generalisation of results to larger contexts (Botma et al., 2015: 83). Quantitative research design allows precise measurement of an independent variable (reflection sessions) (Wood & Ross-Kerr, 2011: 120) and the effectiveness of an intervention (reflection sessions). A quasi-

experimental, non-equivalent control group design was chosen because it controls many threats to validity in a situation and produces the strongest level of evidence (Botma et al., 2015: 115).

A *quasi-experimental non-equivalent control group design* was chosen to determine the effect of one variable on another. The research design allows implementation of an intervention and examining the effect of the intervention by making use of numerical measurement (marks) (Grove, et al., 2015: 34). In quasi-experimental non-equivalent control group design, two groups of participants were involved. In one group, an intervention was implemented and in the other group, no intervention was implemented (Polit et al.,2017: 217).

Quasi-experimental non-equivalent control group design was used, as described by Polit and Beck (2017: 217), De Vos et al. (2011: 145), Brink et al. (2008: 92) and Grove et al. (2015: 56) to explore "reflection sessions" as an intervention factor, which was implemented to improve the academic performance of theoretical midwifery assessment results. Quasi-experimental, non-equivalent control group design allows an intervention to be tested over time (Wood & Ross-Kerr, 2011: 136). A quasi-experimental, non-equivalent control group design was chosen because it controls many threats to validity in the situation and produces the strongest level of evidence (Botma et al., 2015: 115). The design provides high levels of control and precision in measurement (Grove et al., 2015: 45).

By using a quasi-experimental, non-equivalent control group design, the researcher hoped to determine if a specific intervention (independent variable) (reflection sessions) would have an effect on the unit of analysis (dependent variable) (academic performance) without randomization.

3.6 RESEARCH SETTING

Refer to Chapter 1 for a detailed description of the research setting.

3.7 UNIT OF ANALYSIS AND SAMPLING

The unit of analysis refers to the inclusion criteria (formative– and summative assessment marks) (Botma et al., 2015: 124) and the elements thereof in which the researcher is interested (Polit et al.,2017: 274).

Sampling refers to the selected elements (tests and exam marks) with which to conduct a study (Grove et al., 2015: 249). Sampling is the process of selecting a portion of the unit of analysis that represent the unit of analysis (assessment marks of the students) (Botma et al., 2015: 124).

3.7.1 Unit of analysis

The unit of analysis was the academic performance of the Level 2 students studying midwifery theory at a Gauteng Nursing College during the 2018 academic year. Formative- and summative assessment results of both participant groups will be used as the unit of analysis. The study was done in a particular Gauteng Nursing College, as that is the context where the researcher observed the high failure rate in theoretical midwifery. As the researcher is working in the particular Gauteng Nursing College, the marks were accessible. The researcher was able to introduce reflective sessions every morning from 07h00-07h45 during the second block week (19-23 February 2018), third block week (18-22 June 2018) and before the theoretical summative assessment (08 October 2018).

3.7.2 Sampling method

At the specific Gauteng Nursing College, students are allocated to two groups due to the large number of students, limited classroom space and clinical placement facilities. The division of Level 2 students into two groups is part of the administrative process at the nursing college and the lecturer is not involved or have any control over the process.

The estimated number of Level 2 students for 2018 was 278. Half of the students will be allocated to Group 1 (137 students) and the other half (141 students) to Group 2, according to alphabetical order. The two groups were available, but the researcher had to decide which group would receive the intervention and which one would be the control group. An “out of hat” selection was used for this purpose. Group 1 was the intervention group and Group 2 was the control group. It was estimated that at least 100 students would be recruited.

3.7.2.1 Inclusion criteria

- All formative– and summative assessment results for the Level 2 theoretical midwifery component were included.

3.7.3 Sample size

The sample size influence the feasibility of the research study and it must be adequate and sufficient (Botma et al., 2015: 129). In quantitative research, the largest sample size needs to be used to reduce error and to ensure accuracy (Botma et al., 2015: 130).

The number of Level 2 assessment results (marks) that will be used in the study is 278. Assessment results from Group 1 (who was introduced to reflective sessions) was 137. Assessment results from Group 2 (control group – who was not receiving reflective sessions) was 141.

3.8 RESEARCH INSTRUMENT

The researcher used existing data as the data for the study (Botma et al., 2015: 143). The research instrument was a spreadsheet list with the students' formative– and summative assessment results (tests- and examination marks) (Annexure F). All the data for the research study was available. The researcher had permission from the college management to use the student's formative– and summative assessment results. The researcher coded the existing data, consisting of formative– and summative assessment results (tests- and examination results). The data was compiled on spreadsheet, where all three test results, year marks and examination marks were captured.

The advantages of using existing data were no cost of funding, resources being involved and limited bias (Botma et al., 2015: 143). The researcher also did not need to rely on participant's cooperation (Polit et al., 2017:190). A demographic data collection instrument (Annexure E) was used. Only age and gender were analysed in the research study.

3.9 DATA COLLECTION

Data collection is the formal, precise and systematic gathering of information/data to address a research problem and in quantitative research, data are numerical (Botma et al., 2015: 131). The researcher invited all the midwifery students of the selected intervention group to participate in the study at the beginning of the first block week. The researcher explained the study to the students and obtained written informed consent from students who were willing to participate after information was given about the aim of the study (Annexure B).

The voluntary participants were requested to complete the demographic details of the questionnaire (Annexure F). The first block week served to obtain baseline data, therefore there were no reflective sessions for either of the groups and both groups were exposed to conventional teaching methods.

3.9.1 Intervention

The respondents' classroom at the nursing college was used as the venue for the research study. Scheduled contact sessions continued according to normal practise at the nursing college in terms of content, approach and conventional teaching methods. From the second block week, the intervention group was introduced to reflective sessions. Every morning from Monday to Friday between 07h00 to 07h45, during the students second and third theoretical block weeks, the lecturer (researcher) facilitated reflective sessions, which were voluntarily attended by the participants in the study.

The lecturer made use of guided reflection as described by Burton (2003: 1009) by using questions such as "What"? (facts of what had been learned), "So what?" (what was my positive/negative experience/s, what did I learn, what does it mean for practise), and "Now what?" (what insight did I gain, what change in myself, how can I use it in the future, how should practise change). This allowed students to reflect on what they have learned the previous day and which midwifery theoretical knowledge needs more clarification and explanation, but also how theory and practice are integrated. The students made their own short summary in the form of a reflective diary to assess their own growth and if learning took place, but this information will not be included for the purpose of this study.

The researcher anticipates that by making use of reflective sessions it will enhance learning and midwifery theoretical assessment results might improve over time.

3.10 DATA-GATHERING AND ORGANISATION

Data gathering was done in a formal manner and numerical data was obtained (Botma et al., 2015: 131). Data was gathered from midwifery lectures (tests result list) and examination office (examination result list). The data will include the midwifery theoretical assessment results of the formative assessment (three tests at the end of each block) and the summative examination (one examination paper). Data collection took place during February, April, July and October 2018 (Refer to Annexure F).

3.11 DATA ANALYSIS AND INTERPRETATION

Data analysis is the systematic organization and synthesis of research data in quantitative studies (Polit et al., 2012: 725). Formative - and summative assessment results were computerised on an Excel spreadsheet and exported to the statistical data analysis software system for processing of the documented data. Statistical analysis enables the researcher to organize, interpret and communicate numeric information (Polit et al., 2012: 379).

The assessment results and demographic data were analysed through a multivariate analysis of covariance (MANCOVA). MANCOVA refers to a method of analysis, which allows analyses of confounding variables (covariates) if there are two or more dependent variables (Polit et al., 2012, 447), “To test the difference between the means of two groups for two dependent variables simultaneously, while controlling for one covariate (confounding variable)” (Polit et al., 2012, 459).

The data gathered consisted of assessment results, in percentage (%). The averages of the respective groups were used. The block one test results (T1) was used as baseline data in both groups, as there was only conventional teaching and no additional intervention in either of the groups. The intervention (guided reflection sessions) was introduced to the selected group (Group 1) from block two onwards. There was a test at the end of each block, of which the groups’ average results were compared to the baseline data (T1) of the respective groups. The difference (modus and median) that occurred within the respective groups from their baseline data was then compared to determine the effect of the intervention (reflective sessions in addition to conventional teaching) on their academic performance: averages and median in the experimental group indicated a positive effect.

Statistical consultation was obtained for statistical techniques and interpretation of results as suggested by Botma et al. (2015: 146, 147). A statistician of the University of Pretoria assisted with the data analysis. The findings of data analysis are discussed in Chapter 4.

3.12 VALIDITY AND RELIABILITY

3.12.1 Validity

“Validity refers to the degree to which a measurement represents a true value” and how threats to the research study are prevented (Botma et al., 2015: 174; Polit et al., 2017, 336). Validity indicates the degree to which an instrument measures what it is intended to measure (Polit et al., 2017, 745). Validity is always a matter of degree (Polit et al., 2017, 236). Threats to validity must

be controlled and are the reasons that conclusions regarding the research study could be wrong (Polit et al., 2017, 236).

Internal validity contributes to the fact that the independent variable (reflection session) is truly causing variations in the dependent variable (assessment results) (Polit et al., 2017, 244). Validity measures the accuracy of the findings obtained in the research study, and is central to obtaining quality results and finding in a research study (Grove et al., 2015: 224). In the research study, a large group of respondents (by estimation 278 students) was used to ensure validity. Statistical methods were used to support inferences (Polit et al., 2017, 241). An attendance list only displaying student numbers was used. The researcher is not involved in the compiling and marking of the formative - and the summative assessments.

3.12.2 Reliability

Reliability is the degree of consistency with which an instrument accurately measures an attribute (Polit et al., 2017, 741, 331; Grove et al., 2015: 226). Reliability refers to a measuring instrument, which is used amongst different groups of participants, under the same circumstances and which will produce the same results (Botma et al., 2015: 174).

As the study was done only in one academic year, it was not possible to determine reliability, but it is recommended to continue with the study for more than one year and more than one group of students, to determine reliability. Formative assessment marks (two tests results) and summative assessment marks (examination results) were used in the study. The marks truly reflected the students' academic performance. Therefore, the findings is reliable and cannot be manipulated.

3.13 ETHICAL CONSIDERATIONS

The researcher followed the ethical principles as outlined and discussed in Chapter 1, described by Botma et al. (2015: 3, 4, 17, 19, 277) and Polit et al. (152, 154). As guided by the ethical considerations, participants were respected and treated fairly, and privacy and confidentiality were maintained throughout (Botma et al., 2015: 4, 17, 277).

The following principles were adhered to during the research study, as discussed in Chapter 1:

- Permission from institution to conduct the research study,
- Respect, beneficence, justice for the participants,
- Maintain confidentiality regarding data.

3.14 CONCLUSION

This chapter discussed the research methodology used in this study. It includes the research question, research aim, research objective, research design and research method. The research setting as well as the unit of analysis used for the study were discussed. The realization of data collection and method for data analysis were included. Validity and reliability were discussed and the importance of ethical issues was referred to, as was discussed in Chapter 1. The results of the study are discussed in Chapter 4.

CHAPTER 4
RESEARCH FINDINGS

4.1 INTRODUCTION

In Chapter 3, the research method, design and methodology were explained in depth. In this chapter, the findings of the data analysis are provided and discussed according to the research aim and objectives. The assessment results and demographic data was analysed through multivariate analysis of covariance (MANCOVA).

The research question was: ‘’What are the effectiveness of reflective sessions on the academic performance of Level 2 midwifery students?” The aim of the study was to determine the effectiveness of reflective sessions on the academic performance of Level 2 midwifery students, enrolled in a four-year Diploma in Nursing Sciences at a Gauteng Nursing College.

The research objectives included:

- To determine the academic performance of the experimental group (Group 1) of Level 2 midwifery students, enrolled in a four-year Diploma in Nursing Sciences at a Gauteng Nursing College.
- To determine the academic performance of the control group (Group 2) of Level 2 midwifery students, enrolled in a four-year Diploma in Nursing Sciences at a Gauteng Nursing College.
- To compare the academic performance of the experimental group (Group 1) and the control group (Group 2) of Level 2 midwifery students, enrolled in a four-year Diploma in Nursing Sciences at a Gauteng Nursing College.

Participants completed a demographic data collection instrument (Annexure E). The researcher completed a data collection mark sheet (Annexure F). The mark sheet consisted of demographic information regarding age and gender, three (3) test results, year marks, examination marks and final marks. The data are illustrated in graphs and tables.

4.2 RESPONSE RATE

The number of Level 2 assessment results (marks) that will be used in the study is 278. Assessment results from Group 1 (who was introduced to reflective sessions) was 137. Assessment results from Group 2 (control group – who was not receiving reflective sessions) was

141. The number of students in each group was not equal due to the administrative process of the college. The student affairs department divide students in more or less equal two groups. The researcher is not involved in this process and have no control over it. The data collection marks sheet was completed in full, because the formative- and summative assessment marks of respondents (278 students) (unit of analysis) were collected from the MNS 100 theoretical lecture and examination office.

4.3 DEMOGRAPHIC DATA

The respondents in this study were Level 2 midwifery students, enrolled in a four-year Diploma in Nursing Sciences at a Gauteng Nursing College. The age and gender, three (3) test results, year marks, examination marks and final marks of the respondents are discussed.

4.3.1 Respondents' age

Students included in the research ranged from the ages of 19 to 55 years. Most of the students entered the programme immediately after school, as can be seen in Figure 4.1. According to the recruitment policy of the Gauteng Department of Health, the cut off age for admission to study nursing is 35 years of age. Students older than 35 years of age are usually internal candidates of the Department of Health, who have been given an opportunity to continue their professional development. Auxiliary and staff nurses can apply for study leave and be given an opportunity to qualify himself/herself as a registered nurse. The distribution of age of the respondents in the study is summarised in Figure 4.1.

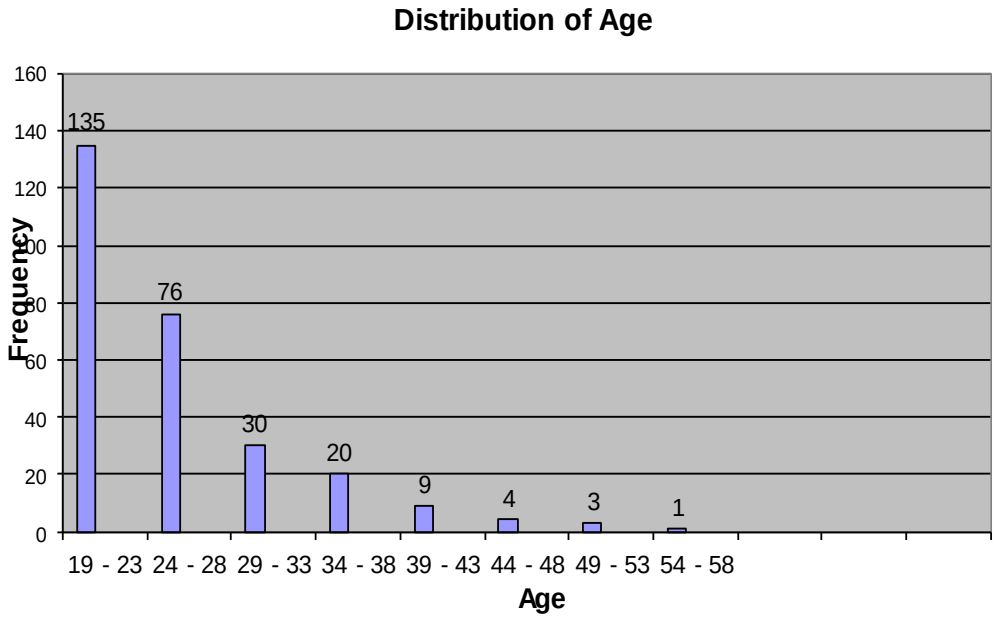

Figure 4.1: Age of the respondents

The majority of school leavers (age Group 19 to 28, which is the age between adolescence and early adulthood) seek a tertiary qualification and occupation after completing their matric (Buthelezi, Fakude, Martin & Daniels, 2015: 3; Zamanzadeh, Azadi, Valizadeh, Keogh, Monadi & Negarandeh, 2013: 222), as can be seen by the age findings in the graph above.

According to another study on nursing education, older students were more likely to complete a programme than younger students (Pryjmachuk, Easton & Littlewood, 2008: 149). Most of the students between the age of 34 and 55 already completed an enrolled nursing course or a staff-nursing course and are now given the opportunity to further their studies and become qualified registered nurses. According to Swindell (2009), research have showed that studying at older age have beneficial effects on people's health systems (maintaining mental\intellectual and biological/physiological health) and life satisfaction (Simandi, 2018: 64). A benefit regarding age difference in students is that young and old students come with different knowledge and experience, which they can share with each other and learn from one another (Simandi, 2018: 65).

4.3.2 Respondents' gender

Students included in the research were mostly females. Eighty-two percent (82%) of the respondents were female and 18 per cent (18%) were male. Nursing is pre-dominantly an

occupation for woman, due to the caring aspect of the profession. The distribution of gender of the respondents in the study is summarised in Figure 4.2.

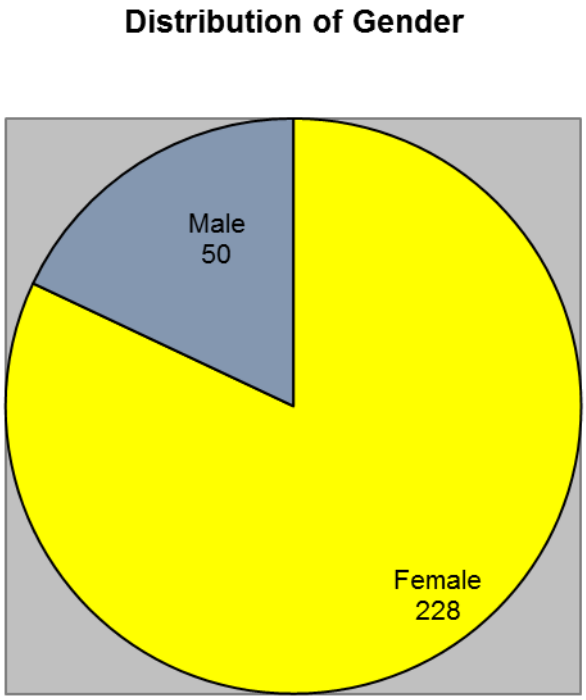

Figure 4.2: Gender of the respondents

More men are starting to choose nursing as a profession because men realise that nursing provides job security, economic stability and is centred around people's care (Zamanzadeh et al., 2013: 222, 223). Men also have caring abilities. From the time of Byzantine Empire until the time of ancient Rome, men where usually the caregivers. It was only at the beginning of the 19th Century and during the First Word War that nursing became a female dominant occupation (Liminana-Gras, Sanchez-Lopez, Saavedra-San Roman & Javier Corbalan-Berna, 2013: 135, 136). In countries such as Canada, the United States and the United Kingdom, the number of men entering the nursing profession increased since 2007 (Liminana-Gras et al., 2013: 137; Buthelezi et al., 2015: 1). During war times (Iran-Iraq war), the demand for male nurses increased due to the need for men to provide emergency care in war areas. That lead to an increase of 50 per cent in men studying for a Baccalaureate degree (1985-1988) in nursing in Iran (Zamanzadeh et al., 2013: 220).

The career ladder in nursing have provided nurses with so many different options with which to continue to develop professionally. The traditional paternalistic pattern continues, allowing male nurses to have access to better posts and have a higher social status than woman. Male nurses

also prefer to work night shifts, because it makes them more independent in their work (Liminana-Gras et al., 2013: 136). Nursing as a career option for woman have continued throughout the years because woman have been seen as leaders in the provision of care for patients (Liminana-Gras et al., 2013: 136, 140).

Gender segregation also plays a role in that more male students are selected to study nursing, because in some cases female nurses are not allowed to take care of male patients. In developed countries, less than 10 per cent of the nursing workforce consist of males. There is a tendency that male nurses are provided with academic support (Kingdom of Saudi Arabia) to help increase the number of registered male nurses in the nursing profession (Alshammari, Pasay-an, Altheban & Al-Shammari, 2018: 66).

Nursing as a career option for woman have continued to be popular through the years, because it allowed woman to provide for their families. The shift-based working hours allowed nurses (women specially) to be available for their children. Due to a shortage of staff, nursing have given people the opportunity to work overtime to increase their monthly income and provide for their families.

4.4 TEST FINDINGS

4.4.1 Formative assessment – Test 1

The data gathered was assessment results (unit of analysis) in percentage (%). The averages of the respective groups were used. The block one/Test 1 results (T1) were used as baseline data in both groups, as there was only conventional teaching and no additional intervention in either of the groups.

The pass rate for a test is 40 per cent, which will give students a year mark of 40 per cent and access to write the examination. The histogram shows that only seven (7) students (5%) of Group 1 failed Test 1 and 19 students (13%) of Group 2 (control group) failed Test 1. The histogram showed that 130 (95%) students of Group 1 and 122 (87%) students of Group 2 (control group) passed Test 1. The distribution of Test 1 results for both groups (Group 1 and Group 2) in the study is summarised in Figure 4.3. The class average for Group 1 (n = 137) was 61 per cent and for Group 2 (n = 141) 51 per cent.

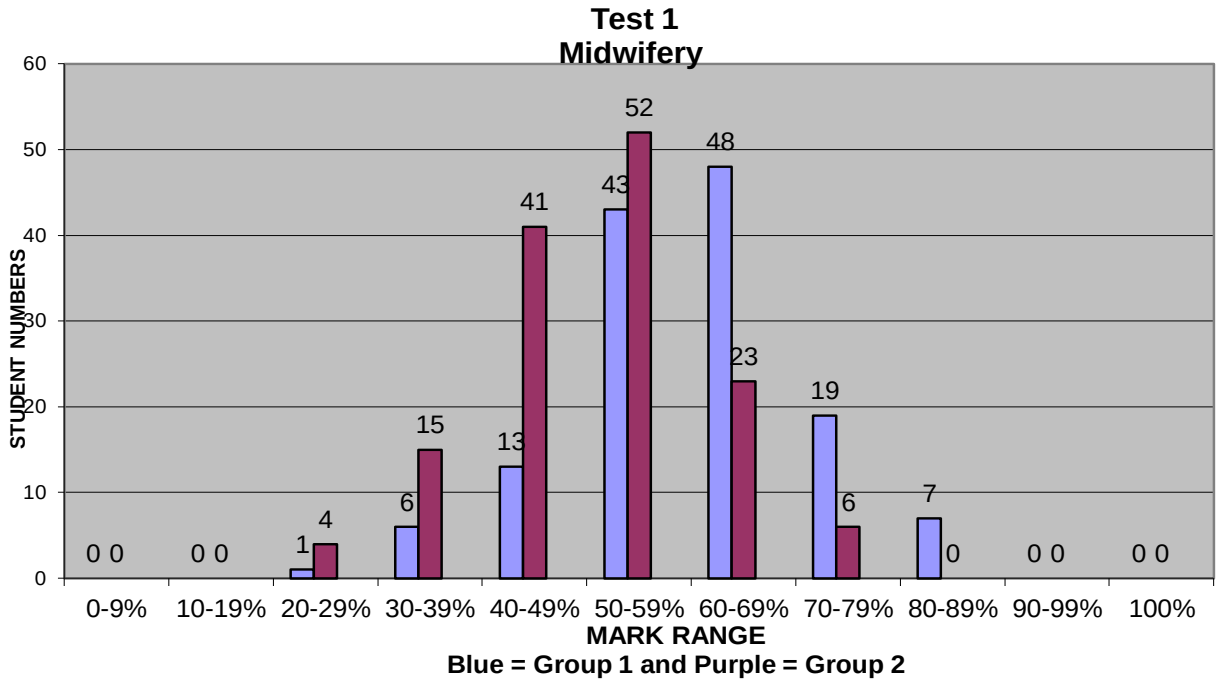

Figure 4.3: Block one - Test 1 results (T1) – Group 1 and Group 2

4.4.2 Formative assessment – Test 2

The intervention (guided reflection sessions) was introduced to the selected group (Group 1) from block two onwards. There was a test at the end of each block, after which the groups' average results were compared to the baseline data (T1) of the respective groups. The difference (modus and median) that occurred within the respective groups in terms of their baseline data was then compared to determine the effect of the intervention (reflective sessions in addition to conventional teaching) on their academic performance: averages and median in the experimental group indicated a positive effect.

The Histogram showed the following:

- In Group 1 Test 2 more students who received reflective sessions have passed the test, compared to Test 1, where reflective sessions was not yet introduced.
- In Group 2 (control group) Test 2, even more students failed the test, compared to Test 1.

The distribution of Test 2 results for both groups (Group 1 and Group 2) in the study is summarised in Figure 4.4. The class average for Group 1 (n = 137) was 64 per cent and for Group 2 (control

group) (n = 140) 52 per cent. In Group 2, one student applied for extension of training. The total number of students in Group 2 was 141 to start with, and was now 140.

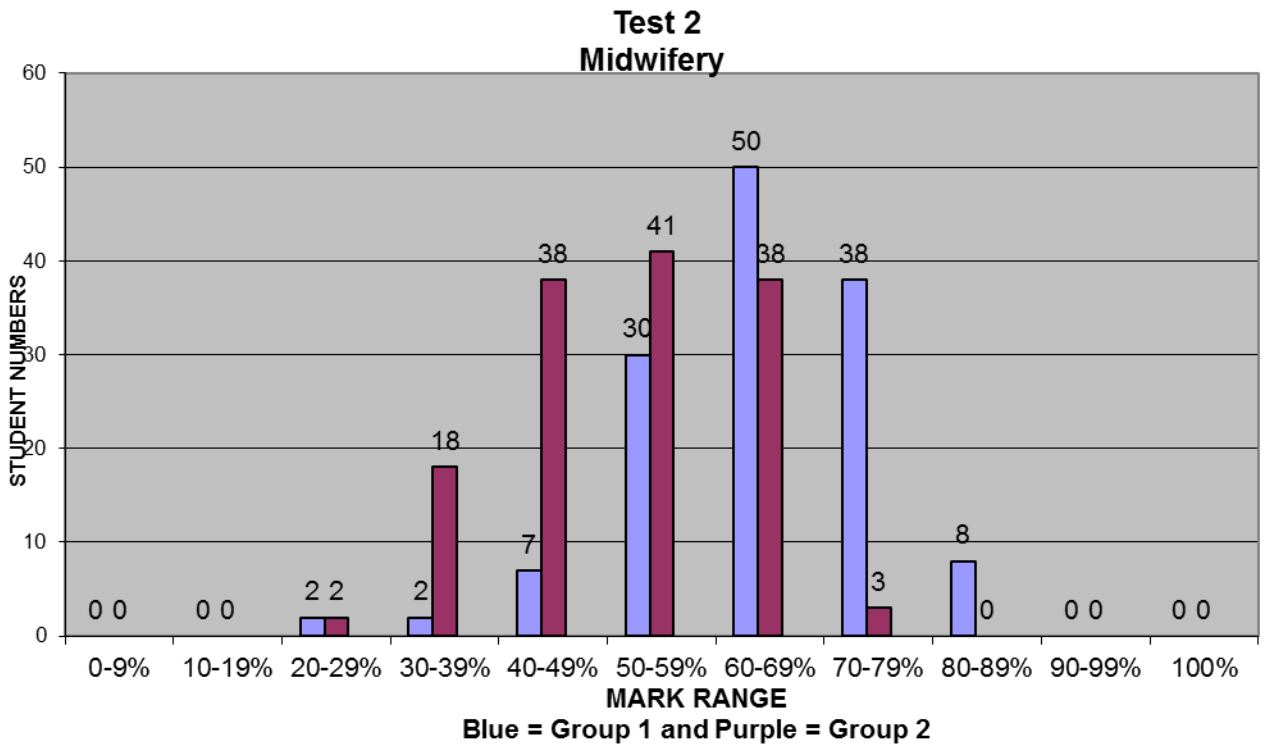

Figure 4.4 Block two - Test 2 results (T2) – Group 1 and Group 2

4.4.3 Formative assessment – Test 3

The Histogram showed the following:

- In Group 1 Test 3 more students failed the test, compared to Test 2, even though reflective sessions were given.
- In Group 2 (control group) Test 3 more students passed the test, compared to Test 2.

The distribution of Test 3 results for both groups (Group 1 and Group 2) in the study is summarised in Figure 4.5. The class average for Group 1 (n = 135) was 61 per cent and for Group 2 (n – 140) 64 per cent. In Group 1, two (2) students applied for extension of training. The total amount of students in Group 1 was 137 to start with, and was now 135.

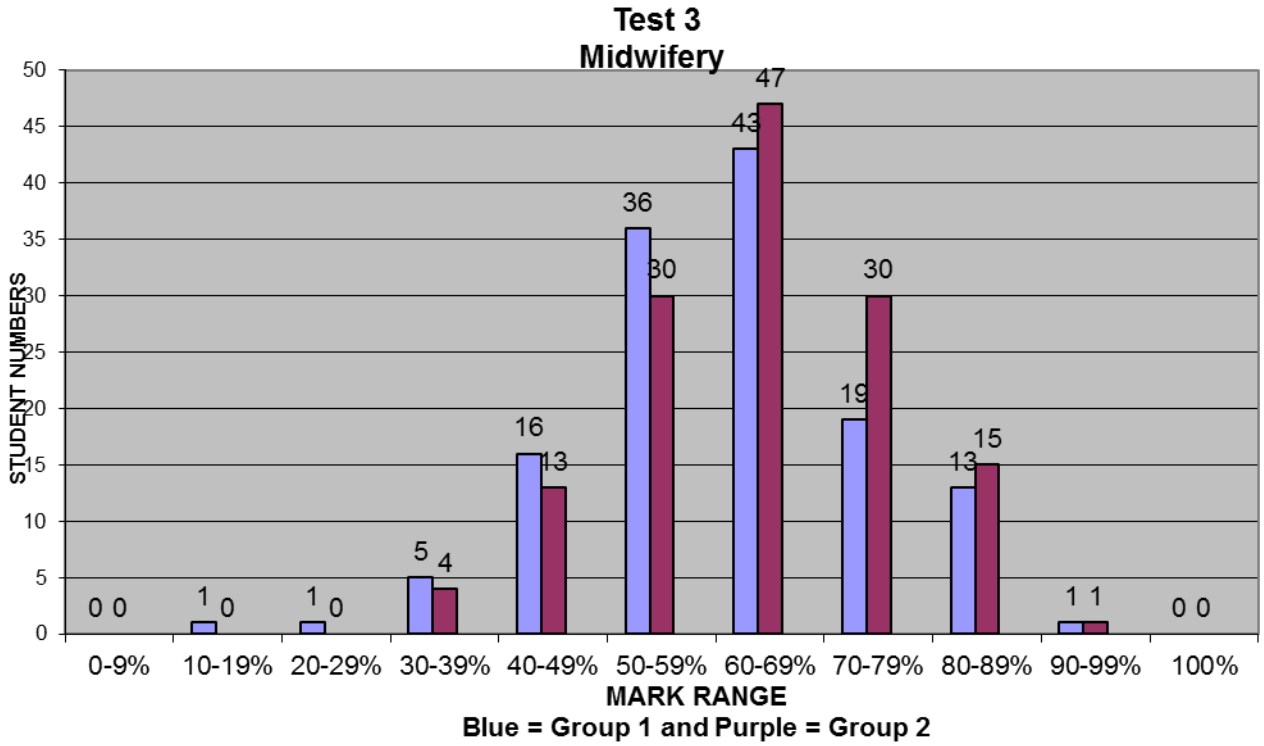

Figure 4.5 Block three - Test 3 results (T3) – Group 1 and Group 2

4.4.4 Year marks

Student's year marks were calculated as follows:

- 30% of Test 1 mark
- 35% of Test 2 mark
- 35% of Test 3 mark

A year mark of 40 per cent was needed to gain access to the theoretical midwifery examination.

The Histogram showed the following:

- That Group 1 (reflection sessions were done) student's year marks where higher than that of Group 2 (control group) students

The histogram showed that Group 2 students (control group – who did not receive reflective sessions) had a larger portion of students who had less than 50 per cent year mark. This indicates that they had to work/study harder for the examination. The histogram also showed that 24 (17%) students from Group 2 had an average year mark between 40-49 per cent. These marks place them in the borderline category, compared to 12 (9%) students of Group 1 (who did receive reflective sessions).

The distribution of year mark results for both groups (Group 1 and Group 2) in the study is summarised in Figure 4.6. The class average for Group 1 (n = 134) was 62 per cent and for Group 2 (n – 140) 56 per cent. In Group 1, another one (1) student applied for extension of training. The total amount of students in Group 1 was 135 to start with, and was now 134.

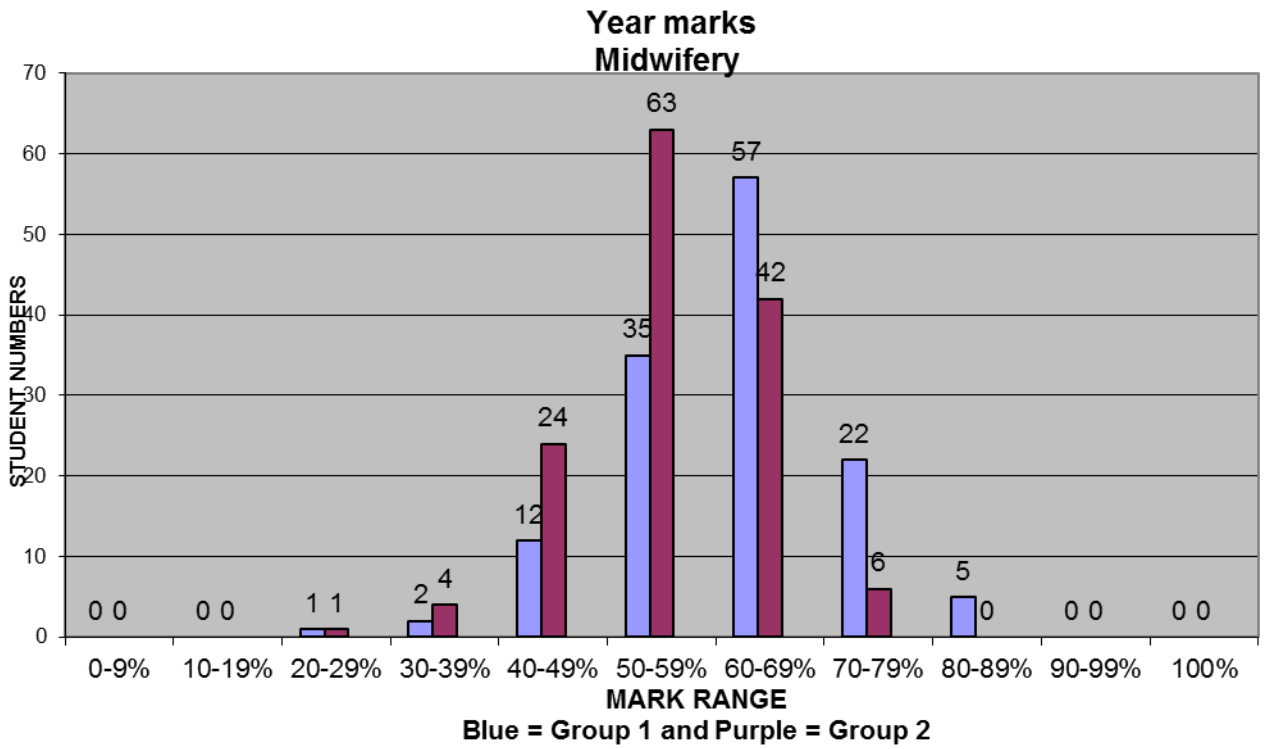

Figure 4.6 Year marks – Group 1 and Group 2

The year mark results indicated the marks with which students entered the examination. Students with a low year mark therefore had to work/study much harder to pass theoretical midwifery. Low year marks also increase students' stress levels, because they need to perform much better in the examination to obtain an average of 50 per cent to pass theoretical midwifery.

4.4.5 Summative assessment

Marks from Student's examination, which was written on the 08 October 2018, were used. Students had to have at least 40 per cent to pass the theoretical midwifery examination/assessment.

The Histogram showed the following:

That in Group 1 (reflection sessions were done) and Group 2 (control group) the same percentage of students (19%) failed the examination and the same amount of students (81%) passed the examination.

The distribution of examination mark results for both groups (Group 1 and Group 2) in the study is summarised in figure 4.7.

The class average for Group 1 (n = 126) was 50% and for Group 2 (n – 135) 49%.

In Group 1 three (3) student and in Group 2 four (4) students had less than 40% year mark and had no assess to write the examination. In Group 1 four (4) students and in Group 2 one (1) did not write examination and applied for supplementary examination due to being sick during the examination. The total amount of students in Group 1 was 134 and was now 126. The total amount of students in Group 2 was 140 and was now 135.

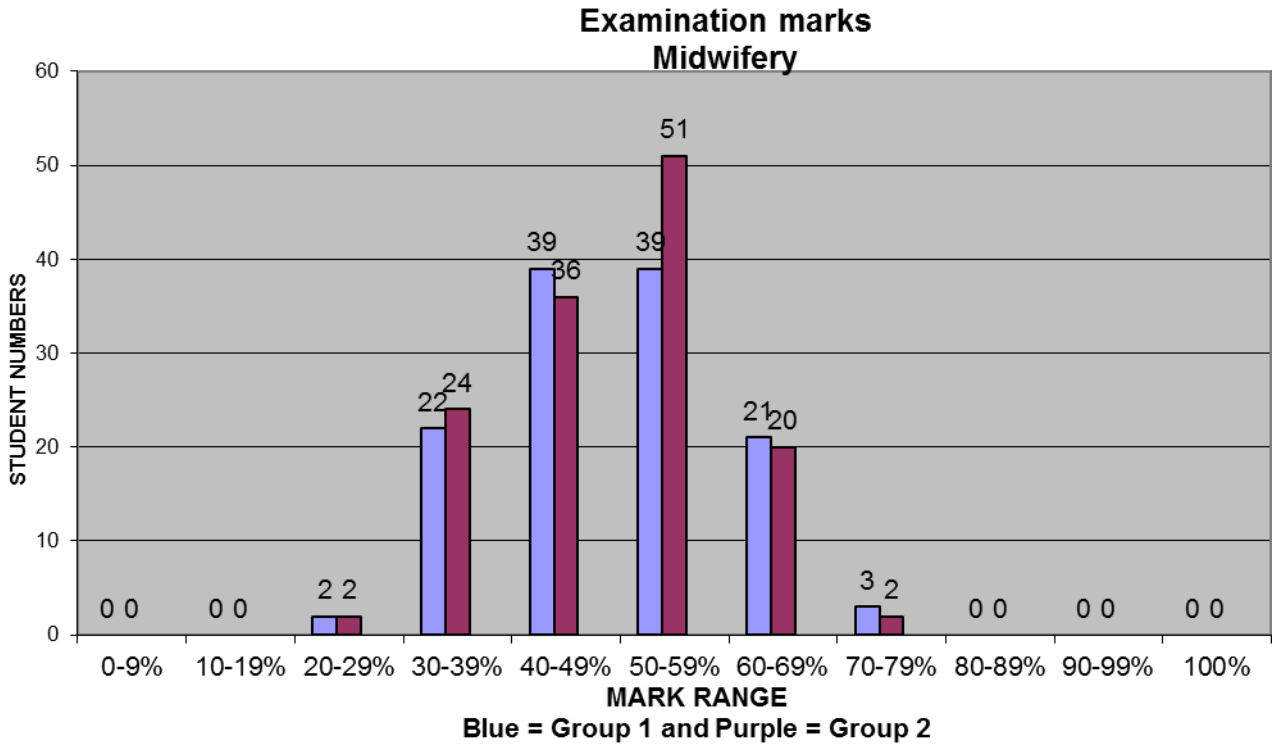

Figure 4.7 Examination marks – Group 1 and Group 2

4.4.5 Final marks

Student's final marks were determined by using 50 per cent of their year mark and 50 per cent of their examination mark. The final mark obtained had to be 50 per cent and more to pass theoretical midwifery.

The Histogram showed the following:
That Group 1 (reflection sessions were done) student's final marks where higher than that of Group 2 (control group) students.

The Histogram showed that Group 2 students (control group – who did not receive reflective sessions) had a larger portion (45 students = 33%) of students who failed the theoretical examination, compare to only 28 students (22%) of Group 1 (reflection sessions were done). In Group 1 twelve (12 = 10%) students performed well and received distinction for theoretical midwifery compare to only two (2 = 1%) students in Group 2.

The distribution of final mark results for both groups (Group 1 and Group 2) in the study is summarised in figure 4.8. The class average for Group 1 (n = 126) was 57% and for Group 2 (n – 135) 53%.

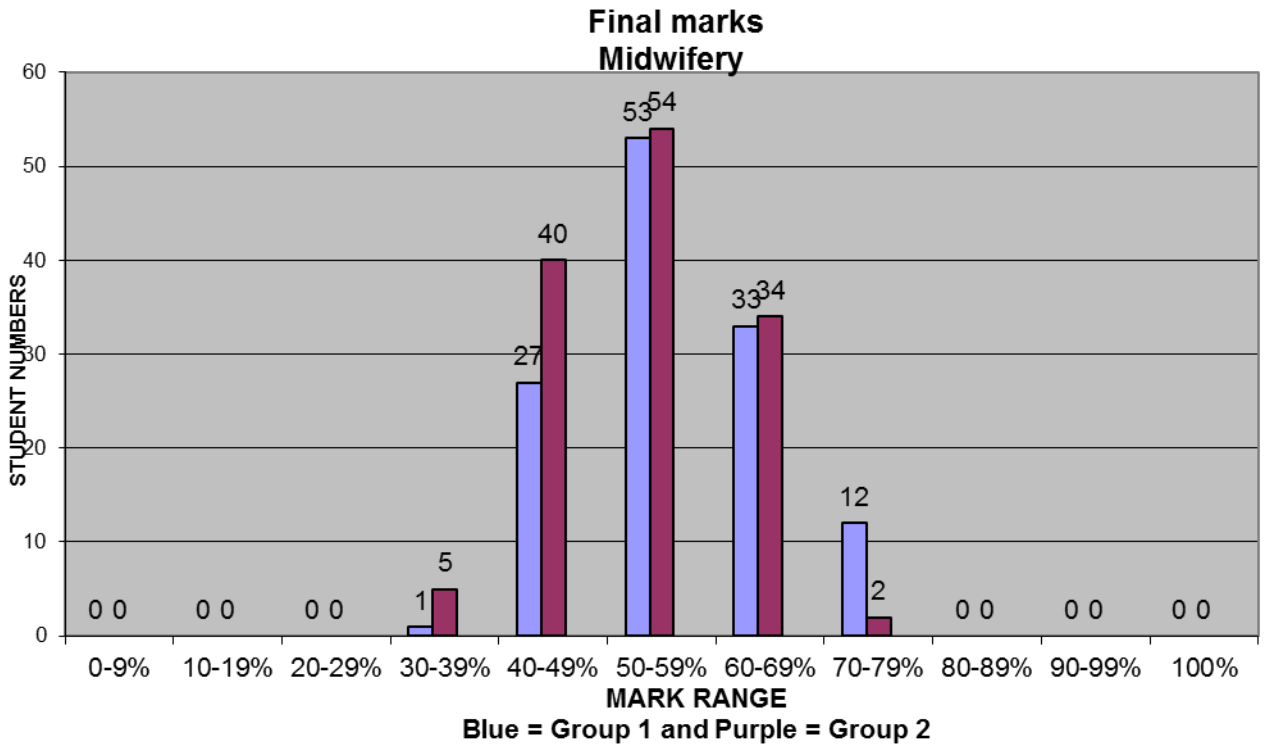

Figure 4.8 Final marks – Group 1 and Group 2

4.4.5.1 Normal distribution curve (Bell-shaped curve)

The normal distribution curve is a model, which is used in descriptive and inferential statistics (Brink, 2008: 69). The Bell Curve system is a ranking system (assessment results) imposed on the

students taking part in the research. The Bell Curve system is used to segregate the best, mediocre and the worst performers (Hermstein & Murry, 1994).

A normal Bell Curve distribution consist of a bell-shaped line and indicates the summary of the frequencies of the individual values (assessment results) of a random variable (Sartori, 2006: 410). A normal Bell Curve distribution shows how often a research/experiment will produce a particular result. Normal distributions are denser in the centre and less dense in tails (Hermstein & Murry, 1994). All the histograms in the research study show a normal distribution Bell Curve, which means that according to Brink (2008,69), all three measures of central tendency, the mean, median and mode, are identical and located at the exact centre of the normal distribution.

4.5 COMPARATIVE FINDINGS

In the comparative findings, the class average percentage was compared in relation to test results, year mark, examination mark and final mark of each group.

The Histogram showed the following:

- In Group 1 (intervention group) the class average percentage of Test 2 improved with 3 per cent after reflective sessions were introduced, compared to Test 1. The class average percentage of Test 3 declined by 3 per cent, even though reflective sessions were given.
- In Group 2 (control group), the class average percentage of Test 2 improved with 1 per cent, compared to Test 1. The class average percentage of Test 3 improved with 12 per cent, all though no reflective sessions were given.
- In Group 1, the class average percentage for their year mark was 62 per cent, compared to the class average percentage for Group 2, which was 56 per cent. The class average percentage between Group 1 (intervention group) and Group 2 (control group) differ with 6 per cent. The findings indicated that the reflective sessions did benefit Group 1 with regards to performing better in their formative assessment. Introducing reflective sessions assisted the students in Group 1 to obtain a good year mark.

In Group 1, the class average percentage for their examination mark was 50%, compared to the class average percentage for Group 2, which was 49%. The class average percentage between Group1 (intervention group) and Group 2 (control group) differentiate with 1%.

In Group 1, class average percentage for their final mark was 57%, compare to the class average percentage for Group 2, which was 53%. The class average percentage between Group 1

(intervention group) and Group 2 (control group) differentiate with 4%. The finding indicated that the reflective sessions benefitted Group 1 to perform better in their overall assessment.

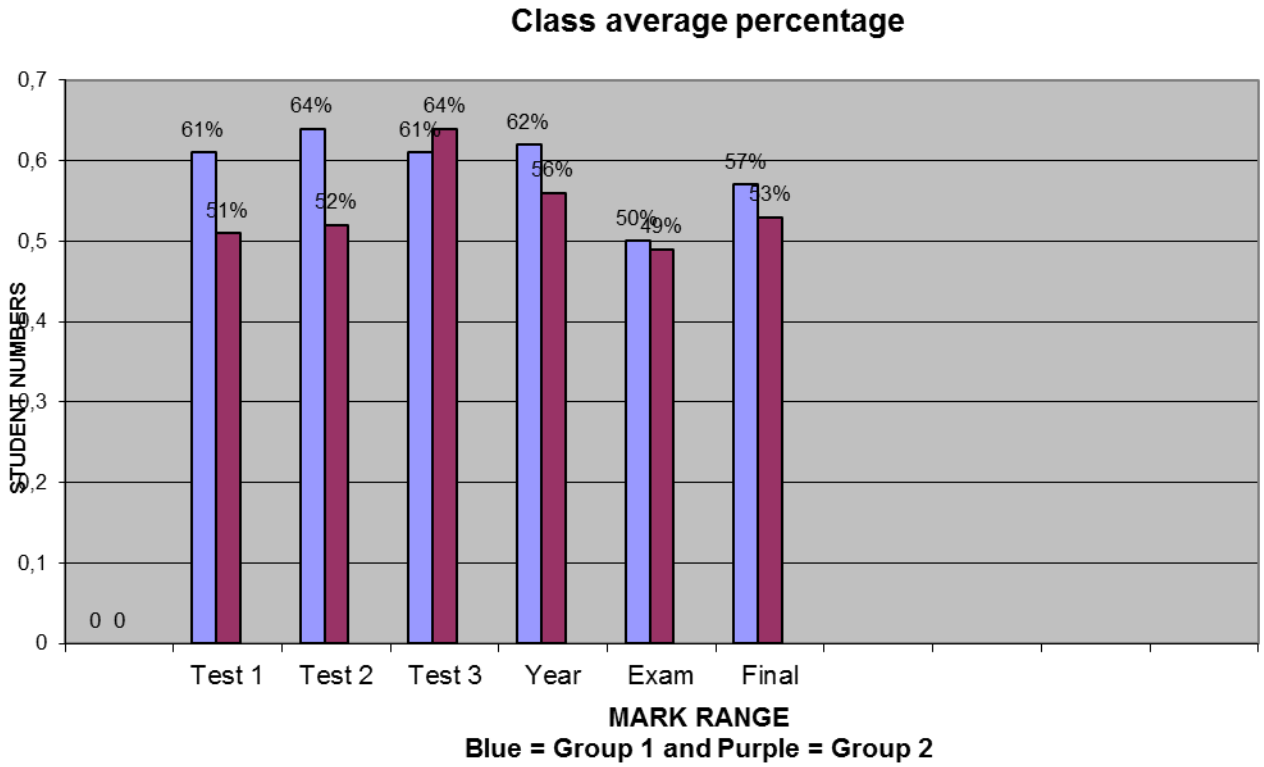

Figure 4.9 Class Average Percentage for Group 1 and Group 2

4.6 DISCUSSION

Factors that affected the performance in the semester tests are not clear. Mature students usually take their studies more seriously than adolescents, as previously mentioned in the study. Other factors that may have influenced the test result are that students needed a year mark of 40 per cent (College Regulation), to gain access to write examination. This factor may have played a role why Group 2 studied harder/more for test 3 and did very well in the formative assessment. In determining the year mark, 35 per cent of the Test 3 results will be used. Performing well in Test 3, increases Group 2's chance to gain a year mark of more than 40 per cent and have access to write examination.

4.7 CONCLUSION

Chapter 4 provided an overview of research findings, including the response rate, demographic data, test findings, year marks, examination marks, final marks and comparative findings.

In Chapter 5, the conclusions and recommendations of the study will be discussed, namely the summary of the results, recommendations, recommendations for further research and conclusion.

CHAPTER 5
RECOMMENDATIONS AND CONCLUSION

5.1 INTRODUCTION

Chapter 4 discussed the data analysis and interpretation. This chapter describes the summary of the results, makes recommendations and describes the limitations of the study and recommendations for further research.

The four-year nurse training programme is a comprehensive nursing programme, which is constituted of four disciplines. It is regulated by R425 of 1985, which is the regulation relating to the approval of and the minimum requirements for the education and training of a nurse (general, psychiatric and community) and midwife leading to registration (SANC 1985:1). At the end of this programme, students will be qualified in all four disciplines of which midwifery is one of the core disciplines. It came to the attention of the researcher that students had a high failure rate in theoretical midwifery assessment.

The researcher therefore decided to introduce reflective sessions to enhance learning in theoretical midwifery. Reflection implies a careful re-examination and evaluation of experience, beliefs and knowledge and often involves looking back or reviewing past actions (Hatlevik, 2012: 870).

During the second and third block week, Group 1 was introduced to reflective sessions. Every morning from Monday to Friday between 07h00 and 08h00, reflective sessions was conducted to enhance learning of the theoretical midwifery content, which was presented the previous day. During the reflective sessions, students had been given the opportunity to clarify theoretical midwifery content, which they did not understand or needed clarity on.

The aim of the study was to determine the effectiveness of the introduced reflective sessions on the academic performance of Level 2 midwifery students, enrolled in a four-year Diploma in Nursing Sciences at a Gauteng Nursing College.

The research objectives of this study were to:

- To determine the academic performance of the experimental group (Group 1) of Level 2 midwifery students, enrolled in a four-year Diploma in Nursing Sciences at a Gauteng Nursing College.

- To determine the academic performance of the control group (Group 2) of Level 2 midwifery students, enrolled in a four-year Diploma in Nursing Sciences at a Gauteng Nursing College.
- To compare the academic performance of the experimental group (Group 1) and the control group (Group 2) of Level 2 midwifery students, enrolled in a four-year Diploma in Nursing Sciences at a Gauteng Nursing College.

The research methodology followed a quantitative design that was a quasi-experimental non-equivalent control group design. The population chosen were Level 2 students (Groups 1 and 2). The unit of analysis was the student's theoretical midwifery formative - and summative assessment results.

The three objectives of this study were to compare the academic performance of the experimental group (Group 1) and the control group (Group 2) of Level 2 midwifery students, enrolled in a four-year Diploma in Nursing Sciences at a Gauteng Nursing College. These objectives were achieved during the data collection and analysis of the unit of analysis (theoretical midwifery formative- and summative assessment results). The researcher made recommendations based on the findings.

The literature review focused on related literature regarding nursing education, midwifery education, assessment of students, learning theories, teaching and learning strategies and reflection.

The research results were formulated and discussed in detail in Chapter 4.

5.2 SUMMARY OF RESULTS

5.2.1 Test 1 – Formative assessment

Test 1 (first block week) results for both groups where used as baseline data and reflective sessions were not introduced to Group 1 (intervention group). The test result did show that Group 1 performed better than Group 2.

5.2.2 Test 2 – Formative assessment

Test 2 (second block week) results showed that Group 1 (intervention group) performed better than Group 2 (control group).

In Group 1, 7 (5%) students failed Test 1, compared to Test 2 where only 4 (3%) students failed the test, after reflective sessions were introduced.

In Group 2, 19 (13%) students failed Test 1, compared to Test 2 where 20 (16%) students failed the test. If we compare Group 1 with Group 2, it becomes evident that more students from Group 2 failed than from Group 1. The results indicated that reflective sessions did enhance theoretical midwifery performance in Group 1.

5.2.3 Test 3 – Formative assessment

Test 3 (third block week) results showed that Group 2 (control group) performed better than Group 1 (intervention group). In Group 1, 7 (5%) students failed Test 3, compared to Test 2 where only 4 (3%) students failed the test, while reflective sessions were still introduced.

In Group 2, 4 (3%) students failed Test 3, compared to Test 2 of which 20 (16%) students failed the test. The assumption is made that students from Group 2 realised that they had to work/study harder to perform well in Test 3 or they would not accomplish a year mark of 40 per cent to get access to the examination.

This would also indicate that they would have to repeat a year of study. Another assumption is that the content of Test 3 (puerperium and neonate) was easier than the content of Test 1 (ante-natal) and Test 2 (ante-natal and labour), which could play a role in Group 2 performing much better. In Group 1 where 2 per cent more students failed in Test 3 compared to Test 2, indicated that students were certain that they had a good year mark and was more relaxed and did not work/study that hard.

5.2.4 Year mark results

The year mark results indicated that Group 1 performed much better that Group 2. In comparing the class average marks, Group 1 performed 6 per cent better than Group 2.

5.2.5 Examination results:

The examination mark results indicated that Group 1 and Group 2 nearly performed the same. In comparing the class average marks of Group 1 and Group 2 there was only 1% difference. The same percentage (19%) of students failed the examination.

5.2.6 Final mark results

The final mark results indicated that Group 1 performed better that Group 2. In comparing the class average marks Group 1 performed better with 4% to Group 2. From Group 2, 45 (33%) students failed the theoretical midwifery examination and only 28 (22%) of Group 1 failed the examination. This indicated that the reflection sessions that Group 1 received enhanced learning.

5.3 RECOMMENDATIONS

The purpose of the study was to determine the effectiveness of reflective sessions on the academic performance of Level 2 midwifery students, enrolled in a four-year Diploma in Nursing Sciences at a Gauteng Nursing College.

5.3.1 Recommendations for education

The introduction of reflective sessions enhanced learning in a specific course/subject. In 2017, the researcher, who was the midwifery lecturer at that time, introduced reflective session in theoretical midwifery throughout the year. A group of 291 students wrote the examination of which 25 (of which 12 were repeaters) students failed the examination. Of the 25 students who wrote the re-examination, 10 students passed the re-examination, 6 students did not attempt (was absent – all were repeaters) the re-examination and 9 failed the re-examination. In conclusion, 276 of the 291 passed their theoretical midwifery after reflective sessions were introduced.

In 2018, reflection sessions was introduced by the researcher, the examination results showed that 28 students (33%) of Group 1 (intervention group) failed their examination, compared to 45 students (33 %) of Group 2 (control group) failed their examination. In conclusion, reflection sessions do enhance learning and allow students to perform better in their theoretical midwifery.

Lecturers need to be acquaint with reflective session (in-service training) and be encouraged to make use of it to enhance learning among students who struggle with specific subject content. Reflective session can be used in all theoretical nursing subjects. It is a teaching strategy that can be easily applied and allow different methods to review/remediate theoretical content.

It is recommended that nurse educators utilise reflective sessions as a teaching strategy to stimulate students to get more involve in their studies and to participate in class.

5.3.2 Recommendations for clinical practice

Reflective sessions could also be introduced in clinical practise. In midwifery there is always the question whether students should be placed in the clinical field before or after theoretical midwifery is presented.

Reflective sessions could allow students in the clinical environment to reflect on patient care provided and determine if it was done correctly or not. By doing so it will give the student the opportunity to correct patient care to be provided and repeat skills where needed. This principal (reflective sessions) can also be applied where students have to master a clinical skill e.g. wound care.

Due to the fact that reflective session provide a more relaxed learning environment, it will allow students to be less stressed in the clinical learning environment when a new clinical skill is learnt. Reflection sessions in the clinical learning environment will allow students when mistakes are made to reflect, learn and correct the skill under the supervision of their mentor/lecturer.

5.3.3 Recommendations for students

Student marks had shown that reflective session do enhance learning. In communication with students, the feedback was that they benefitted from the reflective sessions and that theoretical content was better understood and remembered. Students who were late for reflective sessions also expressed the need to attend the sessions as the theoretical content was reflected on, clarified and better understood.

Reflective session motivated students to immediately review subject content after class so that content, which was not clear or misunderstood, can be clarified the next day in class. Reflective sessions enhance student's active participation in class discussions. Reflective sessions provide a supportive environment for students to ask questions and make mistakes without been criticised during the process of learning (Caruth, 2014: 29).

Students verbalised that they enjoyed the reflective sessions, that they felt comfortable to ask questions and that it was of great help for them. Students also realised that they failed because they did not understood the learning content and it helped them to know how much of the learning content that was presented they knew. Students verbalised that reflective sessions should be done after every study unit and in all subjects. A friendly, open atmosphere should be established which

will allow students to be more relaxed, accepted, less threatened to ask question and participate in the process of learning. The sociocultural context of the students was also not taken into consideration and can be further explored.

5.3.4 Recommendations for other educational institutions

The principle of introducing reflective sessions is very simple and could be implemented in all subjects/course at different education institutions. By making use of reflective sessions in all the subjects of a course in different learning institutions will allow students and lecturers to realise which learning content students still do not understand and need to be explained and clarified. Reflection sessions will benefit educational institutions by having a higher pass rate ratio and allow educated and skill professionals in to the working environment. Reflective practice can also be used as a means for the professional development of experienced nurses.

5.3.5 Recommendations for further research

Further research is needed regarding the introduction of reflective session to enhance learning in a specific subject by students. It is recommended that reflective sessions be used amongst other groups of students, as well as in different subjects and in different nursing educational institutions, so that a more balanced perspective of the experience of reflective sessions can be concluded.

Students can also reflect using tools such as an ePortfolio, which can promote differentiation of supervision and allow educators more time to supervise students who need more support. New reflective learning tools can also be developed.

5.4 STRENGTHS AND LIMITATIONS OF THE STUDY

The strength of this research study was that reflective sessions allowed a supportive and a relaxed environment that promoted learning. Students felt relaxed and less threatened to participate and give inputs during the reflective sessions in class. Students experience reflective sessions to be alive, fun and not to be missed, because it enhanced learning of theoretical midwifery.

Students immediately remediate learning outcomes after class to be able to come up with questions about learning outcomes that were not understood during lectures. Reflective sessions helped students to clarify theoretical midwifery content and understand it better. The effect of

reflective sessions became evident as students performed better in their formative and summative assessments.

As with any research, there are limitations to the study. This study was limited as it only focussed on one Gauteng Nursing College. This may decrease the generalisability of the findings.

5.5 CONCLUSION

The aim of this research study was to determine the effectiveness of reflective sessions on the academic performance of Level 2 midwifery students, enrolled in a four-year Diploma in Nursing Sciences at a Gauteng Nursing College.

The conclusion to the research study, the research outcomes indicated that the reflective sessions in theoretical midwifery allowed students to be more relaxed, participate in class without been threatened and was not afraid to ask question and clarify learning content. Students enjoyed the sessions and even requested that it have to be presented in all the subjects of courses. Students have realised the benefit and importance of reflective session, which allowed them to understand learning content better and to academically perform well.

In the research Group 1 (intervention group – reflective sessions introduced) results showed that they have performed better in the theoretical midwifery than Group 2 (test 2, year marks, examination marks and final marks results). Reflective sessions did enhance learning of theoretical midwifery and allowed Group 1 students to perform academically better than Group 2.

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ANNEXURE A
DECLARATION OF ORIGINALITY

UNIVERSITY OF PRETORIA

The **Department of Nursing** places great emphasis upon integrity and ethical conduct in the preparation of all written work submitted for academic evaluation.

While academic staff teaches you about referencing techniques and how to avoid plagiarism, you too have a responsibility in this regard. If you are at any stage uncertain as to what is required, you should speak to your lecturer before any written work is submitted.

You are guilty of plagiarism if you copy something from another author's work (e.g. a book, an article or a website) without acknowledging the source and pass it off as your own. In effect you are stealing something that belongs to someone else. This is not only the case when you copy work word-for-word (verbatim), but also when you submit someone else's work in a slightly altered form (paraphrase) or use a line of argument without acknowledging it. You are not allowed to use work previously produced by another student. You are also not allowed to let anybody copy your work with the intention of passing if off as his/her work.

Students who commit plagiarism will not be given any credit for plagiarised work. The matter may also be referred to the Disciplinary Committee (Students) for a ruling. Plagiarism is regarded as a serious contravention of the University's rules and can lead to expulsion from the University.

The declaration which follows must accompany all written work submitted while you are a student of the **Department of Nursing**. No written work will be accepted unless the declaration has been completed and attached.

Full names of student: Anna Susanna Alkema
Student number: 16279965
Topic of work: M. Cur Proposal

ANNEXURE B
DECLARATION AGAINST PLAGIARISM

1. I understand what plagiarism is and am aware of the University's policy in this regard.

2. I declare that this assignment (e.g. essay, report, project, assignment, dissertation, thesis, etc.) is my own original work. Where other people's work has been used (either from a printed source, internet or any other source), this has been properly acknowledged and referenced in accordance with departmental requirements.

3. I have not used work previously produced by another student or any other person to hand in as my own.

4. I have not allowed, and will not allow, anyone to copy my work with the intention of passing it off as his or her own work.

SIGNATURE
AS Alkema

ANNEXURE C
INFORMATION LEAFLET FOR THE PARTICIPANTS

Effectiveness of reflective sessions on the academic performance of midwifery students at a Gauteng nursing college

Dear Participant

I am inviting you to participate in a research study, regarding the effectiveness of reflective sessions on the academic performance of midwifery theoretical assessment results of the Four-year Nursing Diploma at a Gauteng Nursing College. The information leaflet provided will enable you to decide if you want to participate in the research study. If you have any questions regarding the research study after reading the information leaflet, please ask the researcher.

1. THE PURPOSE OF THE STUDY

The high failure rate in theoretical midwifery assessments, studying at Gauteng Nursing Colleges, has been a great concern. College management, lecturers and students (via the Student Representative Council 2016) have voiced their concern regarding this matter.

The aim of the study is to describe the effectiveness of guided reflective sessions in education together with conventional education on the academic performance of midwifery theoretical assessments results of Level 2 students, enrolled in a four-year Diploma in Nursing Sciences.

Your participation and input will be a valuable contribution to the study, and an important source of information on how the use of the intervention, reflective sessions in midwifery education, might enhance learning and improve the midwifery assessment results.

2. EXPLANATION OF THE PROCEDURES TO BE FOLLOWED

Between 07h15-08h00 your classroom will be used as the venue for the research study, at the nursing college. The researcher will use the intervention, reflective sessions, as a method to enhance learning and which might improve the academic performance of Midwifery theoretical results.

Data will be collected after each reflective session by using self-report. You will write a short summary of what you know about the midwifery topic, which was lectured the previous day, what you have learned during the reflective session (reflection-on-action) and apply newly gained knowledge of midwifery in critical thinking. From the short summary, after each reflective session, you will be able to assess your own growth and if learning took place.
The short summary by you according to the attached guideline (Annexure H) will be summarized under the headings to assess what the most general comments were and whether you benefited from the reflective sessions.

Theoretical assessment results of the formative assessment and the summative examination/defer-examination will be used to see if, reflection sessions in midwifery education has improved the academic performance of theoretical midwifery results.

The results of the three formative tests to be written at the end of each block will be analysed to see if there was an improvement in Test 2 and 3 results compared to Test 1, when reflective sessions was implemented.

3. RISK

No risk is involved. Information you provide will be managed in a confidential manner, and identity will be protected.

4. BENEFITS OF THE STUDY

The findings of the study will enable the researcher to make recommendations to the educators to use reflective sessions in education to enhance learning, which might help students to improve assessments results, retain their knowledge better, do critical thinking and progress to self-directed learning and become lifelong learners.

5. PARTICIPANTS' RIGHTS

Your participation in the study is voluntary. You have the right to refuse to participate at any time. There will be no penalty should you wish to withdraw from the study and it will not affect you in any way.

6. CONFIDENTIALITY

All information obtained will be confidential. After the researcher has analysed the data, all data will be kept safe for 15 years. Anonymity will be protected at all times by using student numbers or pseudo names.

7. ETHICAL APPROVAL TO CONDUCT THE STUDY

The researcher obtained ethical approval from the Research Ethics Committee of the Faculty of Health Sciences at the University of Pretoria. The management of the Gauteng Nursing College also gave permission to conduct the research study. Participants will not be financially compensated for participation.

8. INFORMATION OF THE RESEARCHER

The contact person for this study is Ansie Alkema. If you have any questions about the study please contact me at (012) 316 5785 or 079 89 777 16. My study supervisor at the University of Pretoria is Dr M Yazbek (contact number is 082 576 3558) and Dr C Maree (contact number is 083 286 6696). The contact number for the Research Ethics Committee at the Faculty of Health Sciences at the University of Pretoria is 012 356 3084 / 012 356 3085.

INFORMED CONSENT FORM

You are asked to participate in a research study that aims to determine the effectiveness of reflective sessions on the academic performance of midwifery students enrolled in a four-year Diploma in Nursing Sciences at a Gauteng nursing college.

The information leaflet was explained to me and an opportunity to ask questions was offered by Ms A.S. Alkema.

You may contact Ms A.S. Alkema at cell phone number 079 89 777 16 any time if you have questions about the research. You are invited to contact the Ethics Committee at …… if you have questions about your rights as a research subject.

Your participation in this research is voluntary, and you will not be penalised if you refuse to participate. You may withdraw from the study at any time without giving a reason.
If you agree to participate, you will be given a signed copy of this document and the participant information leaflet, which is a written summary of the research.

I understand what will happen to me if I participate and what my responsibilities will be. I voluntarily agree to participate.

_____ _____

Signature of Participant Date

_____ _____

Signature of Witness Date

ANNEXURE D
- LETTERS OF APPROVAL –

LETTER TO THE GAUTENG PROVINCIAL DEPARTMENT OF HEALTH TO OBTAIN PERMISSION TO CONDUCT RESEARCH STUDY.

Ansie Alkema
E-mail address: ansievz@hotmail.com

Gauteng Provincial Health Department
Pretoria

Dear ……

RE: Permission to conduct research for Master's Degree purposes

I am an M Cur student in the Department of Nursing Science at University of Pretoria and need to conduct research as part of my Master's degree. I hereby request permission to introduce reflection in midwifery education to enhance learning in Level 2 student, studying midwifery at a nursing college.

The title of the research study is: Effectiveness of reflective sessions on the academic performance of midwifery students at a Gauteng nursing college.

I will obtain the names and contact numbers of the Group 1 students from the educator. After discussing the information leaflet with them, I will invite them to participate voluntary in the research. The participants will sign voluntary informed consent forms.

When my study is completed, I will share the findings with the College management and the lectures educating midwifery at the college.

Yours sincerely
Ansie Alkema

ANNEXURE E
- LETTERS OF APPROVAL –

LETTER TO THE GAUTENG NURSING COLLEGE TO OBTAIN PERMISSION TO CONDUCT RESEARCH STUDY.

Ansie Alkema
E-mail address: ansievz@hotmail.com
Nursing College
Pretoria

Dear ……

RE: Permission to conduct research for Master's Degree purposes

I am an M Cur student in the Department of Nursing Science at University of Pretoria and need to conduct research as part of my Master's degree. I hereby request permission to introduce reflection in midwifery education to enhance learning in Level 2 student, studying midwifery at a nursing college.

The title of the research study is: Effectiveness of reflective sessions on the academic performance of midwifery students at a Gauteng nursing college.

I will obtain the names and contact numbers of the Group 1 students from the
educator. After discussing the information leaflet with them, I will invite them to participate voluntary in the research. The participants will sign voluntary informed consent forms.

When my study is completed, I will share the findings with the College management and the lectures educating midwifery at the college.

Yours sincerely

Ansie Alkema

ANNEXURE F

- DATA COLLECTION INSTRUMENT -

Demographic data

Age	
Gender	
Home language	
Year completed grade 12	
Any other qualifications	
Repeater	
Average marks in Level 1	
General Nursing Science	
Fundamental Nursing Science	
Basic Nursing Science (BNS)	
Sociology	

ANNEXURE G

- DATA COLLECTION SHEET - MARKS -

Group: _____

Participant	**Test 1 result**		**Test 2 result**		**Test 3 result**		**Year mark**	**Exam mark**	**Final mark**
P1									
P2									
Group Average	**Test 1**		**Test 2**		**Test 3**			**Exam**	

Group: _____

Assessment opportunity	**Difference between averages**
T1 and T2	
T1 and T3	
T1 and Exam	
T2 and T3	
T2 and Exam	
T3 and Exam	

ANNEXURE H
- GUIDE FOR REFLECTIVE SESSIONS –

Reflective sessions answer sheet.

Students will be asked to write a self-report after each reflective session by answering the following questions:

1 What? (Facts of what has been learned).

2 So what for practice? (Association between reality and theory: meaning for practice; new knowledge/skills).

3 So what for myself? (What was my positive/negative experience/s, what did I learn).

4 **Now what for practice? (Recommendations of what should be changed in practice)**

5 Now what for myself? (What insight did I gain, what change in myself, how can I use it in the future).

The Research Ethics Committee, Faculty Health Sciences, University of Pretoria complies with ICH-GCP guidelines and has US Federal wide Assurance.
- FWA 00002567, Approved dd 22 May 2002 and Expires 03/20/2022.
- IRB 0000 2235 IORG0001762 Approved dd 22/04/2014 and Expires 03/14/2020.

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Health Sciences Research Ethics Committee

6/11/2017

Approval Certificate
New Application

Ethics Reference No: 454/2017

Title: EFFECTIVENESS OF REFLECTIVE SESSIONS ON THE ACADEMIC PERFORMANCE OF MIDWIFERY STUDENTS AT A GAUTENG NURSING COLLEGE

Dear Ms Anna AS Alkema

The **New Application** as supported by documents specified in your cover letter dated 1/11/2017 for your research received on the 1/11/2017, was approved by the Faculty of Health Sciences Research Ethics Committee on its quorate meeting of 6/11/2017.

Please note the following about your ethics approval:
- Ethics Approval is valid for 1 year
- Please remember to use your protocol number (**454/2017**) on any documents or correspondence with the Research Ethics Committee regarding your research.
- Please note that the Research Ethics Committee may ask further questions, seek additional information, require further modification, or monitor the conduct of your research.

Ethics approval is subject to the following:
- The ethics approval is conditional on the receipt of **6 monthly written Progress Reports**, and
- The ethics approval is conditional on the research being conducted as stipulated by the details of all documents submitted to the Committee. In the event that a further need arises to change who the investigators are, the methods or any other aspect, such changes must be submitted as an Amendment for approval by the Committee.

We wish you the best with your research.

Yours sincerely

Dr R Sommers; MBChB; MMed (Int); MPharMed,PhD
Deputy Chairperson of the Faculty of Health Sciences Research Ethics Committee, University of Pretoria

The Faculty of Health Sciences Research Ethics Committee complies with the SA National Act 61 of 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 and 46. This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki, the South African Medical Research Council Guidelines as well as the Guidelines for Ethical Research: Principles Structures and Processes, Second Edition 2015 (Department of Health).

Protocol No. 454/2017

Principal Investigator(s) Declaration for the storage of research data and/or documents

I, the Principal Investigator(s), Ansie Alkema

of the following trial/study titled EFFECTIVENESS OF REFLECTIVE SESSIONS ON THE ACADEMIC PERFORMANCE OF MIDWIFERY STUDENTS AT A GAUTENG NURSING COLLEGE

will be storing all the research data and/or documents referring to the above mentioned trial/study at the following address: HW-Snyman R8-13, Department of Nursing, Prinshof Campus, University of Pretoria

I understand that the storage for the abovementioned data and/or documents must be maintained for a minimum of 15 years from the commencement of this trial/study.

START DATE OF TRIAL/STUDY: January 2018

END DATE OF TRIAL/STUDY: October 2018

UNTIL WHICH YEAR WILL DATA WILL BE STORED: 2033

Name Ansie Alkema/Mariatha Yazbek

Signature A.S. Alkema.

Date 17 October 2017

GAUTENG PROVINCE

HEALTH
REPUBLIC OF SOUTH AFRICA

Enquiries: Ms AS Alkema
Tel No: 012 319 5737
Cell number: 079 89 777 16
Fax: 012 319 5742

Email: ansie.alkema@gauteng.gov.za

ansievz@hotmail.com

ATTENTION: Ms MP Tjale
Principal

RE: Research study – Ms AS Alkema

I hereby would like to apply to do my research study at SG Lourens Nursing College.

The Proposed title is: Effectiveness of Reflective sessions on the academic performance of midwifery students at a Gauteng nursing college.

The population of the study will be Level 2 (Group 1) students studying midwifery theory (MNS 100) at SG Lourens Nursing College.

Documents included in my application:

- Research proposal
- Ethical clearance letter from UP
- Consent forms for the research participants
- Information leaflet for the participants
- Awaiting Ethical clearance letter from the Gauteng Department of Health

Thank you for your kind cooperation and consideration.
Kind Regards

AS Alkema

Ms AS Alkema
Student Counsellor/Lecturer

14/12/2017
Date

GAUTENG PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

Annexure 1

Declaration of intent from the SG Lourens Nursing College Principal

I give preliminary permission (Ansie Alkema) to do her research on EFFECTIVENESS OF REFLECTIVE SESSIONS ON THE ACADEMIC PERFORMANCE OF MIDWIFERY STUDENTS AT A GAUTENG NURSING COLLEGE (research topic) in SG Lourens Nursing College (name of College).

I know that the final approval will be from the SG Lourens Nursing College Research Ethics Committee and that this is only to indicate that the college is willing to assist.

Other comments or conditions prescribed by the College Principal:

Signature
Ms MP Tjale
Principal

13/2/2018
Date

GAUTENG PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

Enquiries : Ms. K.P Olyn
Tel : 012 319 5671
Contact No. : 082 646 1673
E-mail :patience.olyn@gauteng.gov.za

Ms A Alkema
NHRD reference number: GP 2017 12 030

SUBJECT: APPROVAL FOR DATA COLLECTION

This serves as a response to your request in undertaking the study on Effectiveness of reflections on the academic performance of midwifery students at a Gauteng Nursing College.
Permission is hereby granted for the collection of data as indicated in your proposal.
Please take note of the following:

- All information and data collection should be treated as confidential and ethical considerations adhered to as stated in the proposal.
- At the end of the study kindly furnish the college with the study results.
- The committee might invite you to present during their annual research day.

Warm regards

K.P Olyn (Research Committee Chairperson) — Date: 14. 2. 2018

Ms. MP Tjale (College Principal) — Date: 14/2/2018

GAUTENG PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

Enquiries : Ms. M.P Tjale
Tel : 012 319 5619
Fax : 012 319 5742
E-Mail : Patricia.Tjale@gauteng.gov.za

To : Ms. A.S. Alkema
MNS Lecturer: Department 4

Date : 26 October 2016

SUBJECT: MNS 100 AND 200 EXAMINATION MARKS FOR RESEARCH PROPOSAL

Your correspondence dated 24 October 2016 has reference.

Permission is hereby granted to use MNS 100 and MNS 200 examination marks obtained by SG Lourens Nursing College D4L2 And D4L3 students enrolled for the Diploma in Nursing (General, Community and Psychiatric) and Midwifery from 2010 to 2015 for your research proposal.

Trusting that the names of the students and the College will be treated with confidentiality

Regards,

MS. M.P. TJALE
PRINCIPAL

GAUTENG PROVINCE

REPUBLIC OF SOUTH AFRICA

Outcome of the provincial protocol review committee

RESEARCHER'S NAME	Anna Susanna Alkema
ORGANIZATION/INSTITUTION	SG NURSING COLLEGE
RESEARCH TITLE	EFFECTIVENESS OF REFLECTIVE SESSIONS ON THE ACADEMIC PERFORMANCE OF MIDWIFERY STUDENTS AT A GAUTENG NURSING COLLEGE
CONTACT NUMBER	079 8977716
PROTOCOL NUMBER/PROPOSAL NUMBER	GP_201712030
SITES	SG NURSING COLLEGE

Your permission to conduct the above-mentioned research has been reviewed by the Province and the permission has been granted.

It is requested that you submit the research report on completion of your study and present the findings and the recommendations to the Gauteng Department of Health.

YES	Permission granted

Recommended

Yvonne Skosana
Director: Nursing Education and Training
Date: 13/02/2017

GAUTENG PROVINCE
REPUBLIC OF SOUTH AFRICA

Enquiries: Dr. Lufuno Razwiedani
Tel: +27 12 451 9036
E-mail: lufuno.razwiedani@gauteng.gov.za

TSHWANE RESEARCH COMMITTEE: CLEARANCE CERTIFICATE

MEETING: 11/2017
PROJECT NUMBER: 13/2018
NHRD REFERENCE NUMBER: GP_ 201712 _030

TOPIC: Effectiveness of Reflective Sessions on the Academic Performance of Midwifery Students at a Gauteng Nursing College

Name of the Researcher:	Anna Susanna Alkema
Supervisor:	Dr M. Yazbek
Co –supervisor:	Dr C. Maree
Facility:	*SG Lourence Nursing College*
Name of the Department:	University of Pretoria

NB: THIS OFFICE REQUEST A FULL REPORT ON THE OUTCOME OF THE RESEARCH DONE AND

NOTE THAT RESUBMISSION OF THE PROTOCOL BY RESEARCHER(S) IS REQUIRED IF THERE IS DEPARTURE FROM THE PROTOCOL PROCEDURES AS APPROVED BY THE COMMITTEE.

DECISION OF THE COMMITTEE: APPROVED

.....
Dr. Robert Oyedipe
Acting Chairperson: Tshwane Research Committee
Date: 14/02/2018

.....
Mr. Pitsi Mothomone
Chief Director: Tshwane District Health
Date: 2018-02-20